

| Facility: <u>Arkansas Nuclear One Unit 2</u>  |                                     | Date of Examination: <u>08/27/2012</u> |
|---|-------------------------------------|--|
| Exam Level: RO <input checked="" type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U <input type="checkbox"/>  |                                     | Operating Test No.: <u>2012-1</u>      |
| Control Room Systems <sup>@</sup> (8 for RO); (7 for SRO-I); (2 or 3 for SRO-U, including 1 ESF)  |                                     |  |
| System / JPM Title  | Type Code*                          | Safety Function                        |
| S1. ANO-2-JPM-NRC-SIT09<br>006 A4.02 RO-4.0/SRO-3.8<br>Isolate SITs following SIAS with SIAS reset  | A/D/EN/L/S                          | 2<br>Inventory Control                 |
| S2. ANO-2-JPM-NRC-ELEC05<br>062 A4.01 RO3.3/SRO3.1<br>Transfer Auxiliaries from SU#2 to SU#3 for 2A-1   | N/S                                 | 6<br>Electrical                        |
| S3. ANO-2-JPM-NRC-SDBC2<br>041 A4.05 RO-3.1/SRO-3.3<br>Manually Operate SDBCS valves  | A/L/N/S                             | 4<br>Heat Removal                      |
| S4. ANO-2-JPM-NRC-CCW01<br>008 A4.01 RO-3.3/SRO-3.1<br>Secure CCW system using EOP  | D/L/S                               | 8<br>Plant service systems             |
| S5. ANO-2-JPM-NRC-CNMT2<br>103 A3.01 RO-3.9/SRO-4.2<br>Drain the containment sump   | A/D/P/S                             | 5<br>Containment Integrity             |
| S6. ANO-2-JPM-NRC-CEA01<br>001 A4.03 RO-4.0/SRO-3.7<br>Perform a CEA exercise   | D/P/S                               | 1<br>Reactivity control                |
| S7. ANO-2-JPM-NRC-CPC06<br>012 A4.02 RO-3.3/SRO-3.4<br>Place #1 CEAC to inop on "B" CPC   | D/S                                 | 7<br>Instrumentation                   |
| S8. ANO-2-JPM-NRC-AOP3<br>010 A2.02 RO-3.9/SRO-3.9<br>Isolate failed PZR spray valve  | A/D/P/S                             | 3<br>Pressure Control                  |
| In-Plant Systems <sup>@</sup> (3 for RO); (3 for SRO-I); (3 or 2 for SRO-U)   |                                     |  |
| P1. ANO-2-JPM-NRC-EDDCB<br>064 A4.01 RO-4.0/SRO-4.3<br>Start EDG 2K-4B without DC   | A/D/E/L                             | 6<br>Electrical                        |
| P2. ANO-2-JPM-NRC-MGSU<br>001 A4.08 RO-3.7/SRO-3.4<br>Start the First MG set  | D/L                                 | 1<br>Reactivity control                |
| P3. ANO-2-JPM-NRC-FPEM1<br>033 A2.03 RO-3.1/SRO-3.5<br>Perform emergency SW make up to SFP  | D/E/R                               | 8<br>Plant service systems             |
| <p>@ All RO and SRO-I control room (and in-plant) systems must be different and serve different safety functions; all 5 SRO-U systems must serve different safety functions; in-plant systems and functions may overlap those tested in the control room.</p> |                                     |  |
| * Type Codes  | Criteria for RO / SRO-I / SRO-U     |  |
| (A)lternate path  | 4-6 / 4-6 / 2-3                     |  |
| (C)ontrol room  |                                     |  |
| (D)irect from bank  | ≤ 9 / ≤ 8 / ≤ 4                     |  |
| (E)mergency or abnormal in-plant  | ≥ 1 / ≥ 1 / ≥ 1                     |  |
| (EN)gineered safety feature   | - / - / ≥1 (control room system)    |  |
| (L)ow-Power / Shutdown  | ≥ 1 / ≥ 1 / ≥ 1                     |  |
| (N)ew or (M)odified from bank including 1(A)  | ≥ 2 / ≥ 2 / ≥ 1                     |  |
| (P)revious 2 exams  | ≤ 3 / ≤ 3 / ≤ 2 (randomly selected) |  |
| (R)CA   | ≥ 1 / ≥ 1 / ≥ 1                     |  |
| (S)imulator   |                                     |  |

| Facility: <u>Arkansas Nuclear One Unit 2</u>  |               | Date of Examination: <u>08/27/2012</u>  |
|---|---------------|---|
| Examination Level: RO <input checked="" type="checkbox"/> SRO <input type="checkbox"/>  |               | Operating Test Number: <u>2012-1</u>  |
| Administrative Topic<br>(see Note)  | Type<br>Code* | Describe activity to be performed   |
| A1. Conduct of Operations<br>2.1.25 RO (3.9)  | D/P/R         | Determine any limits for CEA positions using the COLR PDIL<br>ANO-2-JPM-NRC-ADMIN-PDIL  |
| A2. Conduct of Operations<br>2.1.23 RO (4.3)  | D/R           | Calculate Time to Boil using computer program<br>ANO-2-JPM-NRC-ADMIN-TTBCRO   |
| A3. Equipment Control<br>2.2.42 RO (3.9)  | D/R           | Review 2P-89B surveillance to determine operability<br>ANO-2-JPM-NRC-ADMIN-2P89BSURV  |
| A4. Radiation Control<br>2.3.4 RO (3.2)   | N/R           | Calculate expected dose for Re-entry during emergency and if applicable limits will be exceeded<br>ANO-2-JPM-NRC-ADMIN-EMGRES P |
| Emergency Procedures/Plan   |               |   |
| NOTE: All items (5 total) are required for SROs. RO applicants require only 4 items unless they are retaking only the administrative topics, when all 5 are required.   |               |   |
| * Type Codes & Criteria:<br>(C)ontrol room, (S)imulator, or Class(R)oom<br>(D)irect from bank ( $\leq 3$ for ROs; $\leq 4$ for SROs & RO retakes)<br>(N)ew or (M)odified from bank ( $\geq 1$ )<br>(P)revious 2 exams ( $\leq 1$ ; randomly selected) |               |   |

| Facility: <u>Arkansas Nuclear One Unit 2</u>  |               | Date of Examination: <u>08/27/2012</u>   |
|---|---------------|--|
| Examination Level: RO <input type="checkbox"/> SRO <input checked="" type="checkbox"/>  |               | Operating Test Number: <u>2012-1</u>   |
| Administrative Topic<br>(see Note)  | Type<br>Code* | Describe activity to be performed  |
| A5. Conduct of Operations<br>2.1.32 SRO (4.0)   | D/R           | Review performing transferring Unit Auxiliary Calculation and determine if it they can be transferred.<br>ANO-2-JPM-NRC-ADMIN-SU2LOADSRO |
| A6. Conduct of Operations<br>2.1.23 SRO (4.4)   | D/R           | Review Time to Boil Calculation.<br>ANO-2-JPM-NRC-AMDIN-TTBCSRO  |
| A7. Equipment Control<br>2.2.14 SRO (4.3)   | D/R           | Supervisory review of maintenance activities for configuration control<br>ANO-2-JPM-NRC-ADMIN-MAINT                                      |
| A8. Radiation Control<br>2.3.4 SRO (3.7)  | N/R           | Calculate expected dose for Re-entry during an emergency and determine if entry is allowed.<br>ANO-2-JPM-NRC-ADMIN-EMGRESPSRO            |
| A9. Emergency<br>Procedures/Plan<br>2.4.41 SRO (4.6)  | D/P/R         | Determine Emergency Action Level for given conditions.<br>ANO-2-JPM-NRC-ADMIN-EAL11  |
| NOTE: All items (5 total) are required for SROs. RO applicants require only 4 items unless they are retaking only the administrative topics, when all 5 are required.   |               |  |
| * Type Codes & Criteria:<br>(C)ontrol room, (S)imulator, or Class(R)oom<br>(D)irect from bank ( $\leq 3$ for ROs; $\leq 4$ for SROs & RO retakes)<br>(N)ew or (M)odified from bank ( $\geq 1$ )<br>(P)revious 2 exams ( $\leq 1$ ; randomly selected) |               |  |

ANO-2-JPM-NRC-ADMIN-PDIL  
ADMINISTRATIVE JOB PERFORMANCE MEASURE

UNIT:   2   REV #:   002   DATE: \_\_\_\_\_

SYSTEM/DUTY AREA:   Conduct of Operations A1  

TASK:   Determine limits for CEA positions using the COLR PDIL.  

JTA#:   ANO-2-RO-OPROC-NORM-62  

KA VALUE RO:   3.9   SRO:   4.2   KA REFERENCE:   2.1.25  

APPROVED FOR ADMINISTRATION TO: RO:   X   SRO: \_\_\_\_\_

TASK LOCATION: INSIDE CR: \_\_\_\_\_ OUTSIDE CR: \_\_\_\_\_ BOTH:   X  

**SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):**

PLANT SITE: \_\_\_\_\_ SIMULATOR:   Perform   CLASSROOM:   Perform  

POSITION EVALUATED: RO: \_\_\_\_\_ SRO: \_\_\_\_\_

ACTUAL TESTING ENVIRONMENT: SIMULATOR: \_\_\_\_\_ PLANT SITE: \_\_\_\_\_ CLASSROOM: \_\_\_\_\_

TESTING METHOD: SIMULATE: \_\_\_\_\_ PERFORM: \_\_\_\_\_

APPROXIMATE COMPLETION TIME IN MINUTES:   15 Minutes  

REFERENCE(S):   OP-2102.004, Unit 2 Tech Specs, and Unit 2 COLR  

EXAMINEE'S NAME: \_\_\_\_\_ Badge #: \_\_\_\_\_

EVALUATOR'S NAME: \_\_\_\_\_

THE EXAMINEE'S PERFORMANCE WAS EVALUATED AGAINST THE STANDARDS CONTAINED IN THIS JPM AND IS DETERMINED TO BE:

SATISFACTORY: \_\_\_\_\_ UNSATISFACTORY: \_\_\_\_\_

PERFORMANCE CHECKLIST COMMENTS:

\_\_\_\_\_

Start Time \_\_\_\_\_ Stop Time \_\_\_\_\_ Total Time \_\_\_\_\_

SIGNED: \_\_\_\_\_ DATE: \_\_\_\_\_

SIGNATURE INDICATES THIS JPM HAS BEEN COMPARED TO ITS APPLICABLE PROCEDURE BY A QUALIFIED INDIVIDUAL (NOT THE EXAMINEE) AND IS CURRENT WITH THAT REVISION.

**THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:**

The examiner shall ensure that the examinee has been briefed on NUREG 1021 Appendix E.

**JPM INITIAL TASK CONDITIONS:**

- The plant has been at 100% since January 1<sup>st</sup> of this year with CEAs at the program insertion limit.
- The following conditions were established on 8-20-12 at 12:00 which was 250 EFPD:
  - Plant power was lowered to 70% power due to 'A' Main Feedwater pump outage for bearing replacement.
  - Group P CEAs are full out.
  - Group 6 CEAs are being used for ASI control and are 75" withdrawn.
  - COLSS ASI is -.07.
  - #1 CEAC is inoperable for Surveillance testing.
  - #2 CEAC is operable.

**TASK STANDARD:** Determine that group 6 CEAs are inserted into the long term steady state insertion limits and that the 5 EFPD limit has not been exceeded.

**TASK PERFORMANCE AIDS:** OP-2102.004, Unit 2 Tech Specs, and Unit 2 COLR

**ANO-2-JPM-NRC-ADMIN-PDIL**  
**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

**INITIATING CUE:**

It is now 8-23-12 at 02:00 (251.8 EFPD) and the SM/CRS directs "Using OP-2102.004A for the conditions stated above determine applicable CEA insertion limits (if any) and if any time limits for the current configuration have been exceeded."

|            | PERFORMANCE CHECKLIST  | STANDARD  | (Circle One)  |
|------------|--|---|---------------|
|            | 1. Using OP-2102.004 determines that the COLR must be referenced to determine if any limits are applicable.                              | Examinee correctly derived from OP-2102.004 that the COLR must be referenced to determine if any limits apply.                                | N/A SAT UNSAT |
| (C)        | 2. Using cycle 22 COLR figure 3 determines that Group 6 CEA's are inserted into the long term steady state insertion limit of operation. | Examinee correctly derived from graph based on given values that CEAs are inserted into the long term steady state insertion limits (LTSSIL). | N/A SAT UNSAT |
| (C)        | 3. Using Tech Spec 3.1.3.6 or OP-2102.004 determines the limits for present CEA configuration.   | Examinee determines that the current CEA configuration is limited to $\leq 5$ EFPD per 30 EFPD and $\leq 14$ EFPD per calendar year.          | N/A SAT UNSAT |
| (C)        | 4. Using Tech Spec 3.1.3.6 or OP-2102.004 determines if any time limits have been exceeded for LTSSIL.                                   | Examinee determines that 1.8 EFPD is less than 5 EFPD and no limits have been exceeded  | N/A SAT UNSAT |
| <b>END</b> |  |   |               |

## EXAMINER'S COPY

### JPM INITIAL TASK CONDITIONS:

- The plant has been at 100% since January 1<sup>st</sup> of this year with CEAs at the program insertion limit.
- The following conditions were established on 8-20-12 at 12:00 which was 250 EFPD:
  - Plant power was lowered to 70% power due to 'A' Main Feedwater pump outage for bearing replacement.
  - Group P CEAs are full out.
  - Group 6 CEAs are being used for ASI control and are 75" withdrawn.
  - COLSS ASI is -.07.
  - #1 CEAC is inoperable for Surveillance testing.
  - #2 CEAC is operable.

### INITIATING CUE:

It is now 8-23-12 at 02:00 (251.8 EFPD) and the SM/CRS directs "Using OP-2102.004A for the conditions stated above determine applicable CEA insertion limits (if any) and if any time limits for the current configuration have been exceeded."

Applicable CEA insertion limits (If any) Long Term Steady State Insertion Limits

Have any time limits for the current configuration been exceeded? Yes  No  
Circle One

## EXAMINEE'S COPY

### JPM INITIAL TASK CONDITIONS:

- The plant has been at 100% since January 1<sup>st</sup> of this year with CEAs at the program insertion limit.
- The following conditions were established on 8-20-12 at 12:00 which was 250 EFPD:
  - Plant power was lowered to 70% power due to 'A' Main Feedwater pump outage for bearing replacement.
  - Group P CEAs are full out.
  - Group 6 CEAs are being used for ASI control and are 75" withdrawn.
  - COLSS ASI is -.07.
  - #1 CEAC is inoperable for Surveillance testing.
  - #2 CEAC is operable.

### INITIATING CUE:

It is now 8-23-12 at 02:00 (251.8 EFPD) and the SM/CRS directs "Using OP-2102.004A for the conditions stated above determine applicable CEA insertion limits (if any) and if any time limits for the current configuration have been exceeded."

Applicable CEA insertion limits (If any) \_\_\_\_\_

Have any time limits for the current configuration been exceeded? \_\_\_\_\_  
Yes / No  
Circle One

ADMINISTRATIVE JOB PERFORMANCE MEASURE

UNIT: 2 REV #: 002 DATE: \_\_\_\_\_

SYSTEM/DUTY AREA: Conduct of Operations A2

TASK: Calculate Time to Boil using computer program

JTA#: ANO2-RO-NORM4

KA VALUE RO: 4.3 SRO: 4.4 KA REFERENCE: 2.1.23

APPROVED FOR ADMINISTRATION TO: RO: X SRO: \_\_\_\_\_

TASK LOCATION: INSIDE CR: \_\_\_\_\_ OUTSIDE CR: \_\_\_\_\_ BOTH: X

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE: \_\_\_\_\_ SIMULATOR: Perform Classroom Perform : \_\_\_\_\_

POSITION EVALUATED: RO: X SRO: \_\_\_\_\_

ACTUAL TESTING ENVIRONMENT: SIMULATOR: \_\_\_\_\_ PLANT SITE: \_\_\_\_\_ Classroom: \_\_\_\_\_

TESTING METHOD: SIMULATE: \_\_\_\_\_ PERFORM: \_\_\_\_\_

APPROXIMATE COMPLETION TIME IN MINUTES: 15 Minutes

REFERENCE(S): 1015.008 Attachment E

EXAMINEE'S NAME: \_\_\_\_\_ KCN#: \_\_\_\_\_

EVALUATOR'S NAME: \_\_\_\_\_

THE EXAMINEE'S PERFORMANCE WAS EVALUATED AGAINST THE STANDARDS CONTAINED IN THIS JPM AND IS DETERMINED TO BE:

SATISFACTORY: \_\_\_\_\_ UNSATISFACTORY: \_\_\_\_\_

PERFORMANCE CHECKLIST COMMENTS:

\_\_\_\_\_  
\_\_\_\_\_

Start Time \_\_\_\_\_ Stop Time \_\_\_\_\_ Total Time \_\_\_\_\_

SIGNED: \_\_\_\_\_ DATE: \_\_\_\_\_

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**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

**THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:**

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The examiner shall ensure that the examinee has been briefed on NUREG 1021 Appendix E.

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**JPM INITIAL TASK CONDITIONS:**

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Plant shutdown for repair of Steam Generator Tube Leak. Making preparations for draining the RCS to 24 inches above the bottom of the hotleg to install nozzle dams. PZR level is 40%.

---

Time after shutdown = 50 hours; one (1) PZR code safety valve is removed; PZR manway is installed;

---

ECCS vent valves are de-energized OPEN; NO RCP seal work inprogress; NO RCS cold or hot leg openings;

---

RCS Temperature is 105°F. Nozzle Dams are not installed.

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**TASK STANDARD:**

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Time to boil calculation(TTB) and time to core uncover (TTCU)calculated using the computer program and

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Values calculated are TTB = 15 min. to 16 min. and TTCU=2hrs to 2hrs 10 min.

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**TASK PERFORMANCE AIDS:**

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1015.008 attachment E, Computer operational with the current revision of LOSDC2 installed

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(SP-94-C-0001-01, Rev. 13), set up shortcut to program on the desktop.

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**SIMULATOR SETUP:**

NA

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**EXAMINER'S NOTES:**

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**ADMINISTRATIVE JOB PERFORMANCE MEASURE****INITIATING CUE:**

CRS/SM directs: "Perform 1015.008 Attachment E steps 1 through 4, Time to boiling/Core Uncovery Estimate, for the projected level using data given."

| <b>PERFORMANCE CHECKLIST</b>                                      |    |  | <b>STANDARDS</b>   | (Circle One)  |
|---|----|--|--|---------------|
|   | 1. | Start a time to boil (TTB) calculation using LOSDC2 program. | Computer program started                                     | N/A SAT UNSAT |
|   | 2. | Time since shutdown:<br>2days 2 hours                        | Recorded time<br>50 hours                                    | N/A SAT UNSAT |
|   | 3. | Decay Heat Produced<br>12,765.59 BTU/Sec                     | Recorded decay heat<br>12,765.59 BTU/Sec                     | N/A SAT UNSAT |
| (C)   | 4. | Time until coolant boils:<br>15 min                          | Recorded to boil<br>14.5 to 15.5 min.                        | N/A SAT UNSAT |
| (C)   | 5. | Time until core uncovery:<br>2 hours 5 min 15 sec            | Recorded time to core uncovery<br>2 hours to 2 hours 10 min. | N/A SAT UNSAT |
|   | 6. | Makeup rate:<br>86 gpm                                       | Recorded makeup rate<br>86 gpm                               | N/A SAT UNSAT |
|   | 4. | Heat Up rate:<br>7.13 °F/min                                 | Recorded heat up rate<br>7.13 °F/min                         | N/A SAT UNSAT |
|   | 5. | RCS eq. Press:<br>47.1 psia                                  | Recorded RCS eq. Press<br>47.1 psia                          | N/A SAT UNSAT |
|   | 6. | Time until 10 F from bulk boiling:<br>13.6 min               | Recorded time to 10° from bulk boiling<br>13.6 min           | N/A SAT UNSAT |
| <b>EXAMINER'S NOTE:</b>   |    |  |  |               |
| Prompt the Examinee that the file should not be printed or saved. |    |  |  |               |
| <b>END</b>  |    |  |  |               |

**ADMINISTRATIVE JOB PERFORMANCE MEASURE****EXAMINER'S COPY****JPM INITIAL TASK CONDITIONS:**

Given the following Plant conditions:

- Plant shutdown for repair of Steam Generator Tube Leak
- Making preparations for draining the RCS to 24 inches above the bottom of the hot leg to install nozzle dams
- This is considered the initial calculation
- PZR level is 40% and open to atmosphere
- Time after shutdown = 50 hours
- One (1) PZR code safety valve is removed
- PZR manway is installed
- ECCS vent valves are de-energized OPEN
- NO RCP seal work in progress
- NO RCS cold or hot leg openings
- RCS Temperature is 105°F
- Nozzle Dams are not installed

**INITIATING CUE:**

CRS/SM directs: "Perform 1015.008 Attachment E steps 1 through 4, Time to boiling/Core Uncovery Estimate, for the projected level using data given." (Do not print data or save file.)

Record calculations below:

Time since shutdown: \_\_\_\_\_

Decay Heat Produced: \_\_\_\_\_

Time until coolant boils: \_\_\_\_\_

Time until core uncovery: \_\_\_\_\_

Makeup rate: \_\_\_\_\_

Heat Up rate: \_\_\_\_\_

RCS eq. Press: \_\_\_\_\_

Time until 10 °F from bulk boiling: \_\_\_\_\_

**ADMINISTRATIVE JOB PERFORMANCE MEASURE****EXAMINEE'S COPY****JPM INITIAL TASK CONDITIONS:**

Given the following Plant conditions:

- Plant shutdown for repair of Steam Generator Tube Leak
- Making preparations for draining the RCS to 24 inches above the bottom of the hot leg to install nozzle dams
- This is considered the initial calculation
- PZR level is 40% and open to atmosphere
- Time after shutdown = 50 hours
- One (1) PZR code safety valve is removed
- PZR manway is installed
- ECCS vent valves are de-energized OPEN
- NO RCP seal work in progress
- NO RCS cold or hot leg openings
- RCS Temperature is 105°F
- Nozzle Dams are not installed

**INITIATING CUE:**

CRS/SM directs: "Perform 1015.008 Attachment E steps 1 through 4, Time to boiling/Core Uncovery Estimate, for the projected level using data given." (Do not print data or save file.)

**Record calculations below:**

Time since shutdown: \_\_\_\_\_

Decay Heat Produced: \_\_\_\_\_

Time until coolant boils: \_\_\_\_\_

Time until core uncovery: \_\_\_\_\_

Makeup rate: \_\_\_\_\_

Heat Up rate: \_\_\_\_\_

RCS eq. Press: \_\_\_\_\_

Time until 10 °F from bulk boiling: \_\_\_\_\_

ADMINISTRATIVE JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

UNIT:  2

REV #:  002

SYSTEM/DUTY AREA:  Equipment Control A3

TASK:  Review 2P-89B surveillance to determine operability

JTA#:  ANO2ROHPSISURV16

KA VALUE RO:  3.7  SRO:  4.1  KA REFERENCE:  2.2.12

APPROVED FOR ADMINISTRATION TO: RO:  X  SRO: \_\_\_\_\_

TASK LOCATION: INSIDE CR: \_\_\_\_\_ OUTSIDE CR: \_\_\_\_\_ BOTH:  X

**SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):**

PLANT SITE: \_\_\_\_\_ SIMULATOR:  Perform  LA B: \_\_\_\_\_

POSITION EVALUATED: RO: \_\_\_\_\_ SRO: \_\_\_\_\_

ACTUAL TESTING ENVIRONMENT: SIMULATOR: \_\_\_\_\_ PLANT SITE: \_\_\_\_\_ LAB: \_\_\_\_\_

TESTING METHOD: SIMULATE: \_\_\_\_\_ PERFORM: \_\_\_\_\_

APPROXIMATE COMPLETION TIME IN MINUTES:  15 Minutes

REFERENCE(S):  OP 2104.039 Supplement 2

EXAMINEE'S NAME: \_\_\_\_\_ KCN#: \_\_\_\_\_

EVALUATOR'S NAME: \_\_\_\_\_

**THE EXAMINEE'S PERFORMANCE WAS EVALUATED AGAINST THE STANDARDS CONTAINED IN THIS JPM AND IS DETERMINED TO BE:**

SATISFACTORY: \_\_\_\_\_ UNSATISFACTORY: \_\_\_\_\_

PERFORMANCE CHECKLIST COMMENTS:

\_\_\_\_\_  
\_\_\_\_\_

Start Time \_\_\_\_\_ Stop Time \_\_\_\_\_ Total Time \_\_\_\_\_

SIGNED: \_\_\_\_\_ DATE: \_\_\_\_\_

**SIGNATURE INDICATES THIS JPM HAS BEEN COMPARED TO ITS APPLICABLE PROCEDURE BY A QUALIFIED INDIVIDUAL (NOT THE EXAMINEE) AND IS CURRENT WITH THAT REVISION.**

ADMINISTRATIVE JOB PERFORMANCE MEASURE

**THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:**

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The examiner shall ensure that the examinee has been briefed on NUREG 1021 Appendix E.

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**JPM INITIAL TASK CONDITIONS:**

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Plant is at 100% power and all ESF equipment is in normal alignment.

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2P89C is aligned to the GREEN side.

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The 2P-89B Quarterly test has been completed using OP 2104.039 Supplement 2.

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**TASK STANDARD:**

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Determine the following for 2P-89B surveillance results:

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Pump  $\Delta P$  is out of LIMITING RANGE FOR OPERABILITY.

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Correct the calculation of pump  $\Delta P$ .

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Determine a Condition report must be initiated due to mechanical seal leakage.

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Determine that 2P-89B in inoperable.

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**TASK PERFORMANCE AIDS:**

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Marked-up copy of Supplement 2 2P-89B quarterly test

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**SIMULATOR SETUP:**

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NA

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**EXAMINER'S NOTES:**

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ADMINISTRATIVE JOB PERFORMANCE MEASURE

Initiating CUE:

The Control Room Supervisor directs determination of the operability of the 'B' HPSI pump, 2P89B, by reviewing the completed surveillance data OP 2104.039 Supplement 2 step 3.1 through 3.3. Complete the remainder of section 3 through step 3.6 and correct any errors identified. If any actions are required then note them below.

| <u>PERFORMANCECHECKLIST</u>  |    | <u>STANDARD</u>  | <u>CIRCLE ONE</u>   |
|--|----|--|---|
| <b>NOTE:</b> Provide a marked-up copy of Supplement 2, 2P-89B quarterly test |    |  |   |
|  | 1. | Perform review of the surveillance procedure results.  | Reviews the surveillance procedure provided.<br>N/A   |
| (C)  | 2. | Pump ΔP is out of LIMITING RANGE FOR OPERABILITY.  | Pump D/P is out of LIMITING RANGE FOR OPERABILITY.<br><br>'NO' should be circled instead of 'YES' on far right column.<br>N/A SAT UNSAT |
| (C)  | 3. | Calculation for determining lower pump ΔP limit is in error.<br><b>This calculation is below the table in supplement 2 section 3 and recorded in the table on the line for pump Δ P.</b> | Corrects the calculation for determining lower pump D/P limit to between 1380 - 1382 psid.<br>N/A SAT UNSAT                             |
| (C)  | 4. | Pump inboard mechanical seal leakage is greater than 17 drops per minute.  | Notes that a CR should be initiated due to the pump inboard mechanical seal leakage.<br>N/A SAT UNSAT                                   |
| (C)  | 5. | High Pressure Safety injection pump inoperability  | Notes that 2P-89B must be declared inoperable.<br>N/A SAT UNSAT   |
| END  |    |  |   |

ADMINISTRATIVE JOB PERFORMANCE MEASURE

**EXAMINER's COPY**

**INITIAL PLANT CONDITIONS**

Plant is at 100% power and all ESF equipment is in normal alignment. 2P89C is aligned to the GREEN side. The 2P-89B Quarterly test has been completed using OP 2104.039 Supplement 2.

**Initiating CUE:**

The Control Room Supervisor directs determination of the operability of the 'B' HPSI pump, 2P89B, by reviewing the completed surveillance data OP 2104.039 Supplement 2 step 3.1 through 3.3. Complete the remainder of section 3 through step 3.6 AND correct any errors identified. If any actions are required then note them below.

ADMINISTRATIVE JOB PERFORMANCE MEASURE

**EXAMINEE's COPY**

**INITIAL PLANT CONDITIONS**

Plant is at 100% power and all ESF equipment is in normal alignment. 2P89C is aligned to the GREEN side. The 2P-89B Quarterly test has been completed using OP 2104.039 Supplement 2.

**Initiating CUE:**

The Control Room Supervisor directs determination of the operability of the 'B' HPSI pump, 2P89B, by reviewing the completed surveillance data OP 2104.039 Supplement 2 step 3.1 through 3.3. Complete the remainder of section 3 through step 3.6 AND correct any errors identified. If any actions are required then note them below.

|  |  |   |
|--|--|---|
| PROC./WORK PLAN NO.<br><b>2104.039</b> | PROCEDURE/WORK PLAN TITLE:<br><b>HPSI SYSTEM OPERATION</b> | PAGE: <b>123 of 244</b><br>CHANGE: <b>069</b> |
|--|--|---|

SUPPLEMENT 2

3.0 ACCEPTANCE CRITERIA

3.1 Record values observed during 2P-89B operation below AND compare with limiting range of values for operability.

| TABLE 1  |                                      |   |                               |                                      |   |
|--|--------------------------------------|---|-------------------------------|--------------------------------------|---|
| TEST QUANTITY                                  | INSTRUMENT<br>(INCLUDE<br>TEST INST) | MEASURED<br>VALUE   | ACCEPTABLE<br>NORMAL<br>RANGE | LIMITING<br>RANGE FOR<br>OPERABILITY | IS DATA IN<br>LIMITING<br>RANGE?                              |
| Running Suct.<br>Pressure                      | 2PI-5100<br>(local)                  | 33.5 psig   | ≥ 8 psig                      | ≥ 8 psig                             | <input checked="" type="radio"/> YES <input type="radio"/> NO |
| Discharge<br>Pressure                          | 2PI-5101<br>(local)                  | 1389 psig   | N/A                           | N/A                                  | N/A   |
|  | 2PI-5109<br>(2C16)                   | 1379 psig   | N/A                           | N/A                                  | N/A   |
| RWT Temperature                                | 2TIS-5675<br>(2C17)                  | 90 °F   | 40 to 110°F                   | N/A                                  | N/A   |
| Pump ΔP<br>{4.3.1}                             | 2PI-5101 -<br>2PI-5100               | 1355.5 psid   | N/A                           | 1360.81(1) to<br>1612.8 psid         | <input checked="" type="radio"/> YES <input type="radio"/> NO |
| Mechanical Seal<br>leakage (inboard)           | N/A                                  | 18 DPM  | ≤17 DPM                       | N/A                                  | N/A   |
| Mechanical Seal<br>leakage (outboard)          | N/A                                  | 0 DPM   | ≤17 DPM                       | N/A                                  | N/A   |
| Motor Running<br>Amps<br><br>(CR-1-96-0272-07) | Ammeter at<br>2A-406                 | ØA <u>34</u> Amps<br>ØB <u>33</u> Amps<br>ØC <u>35</u> Amps | N/A                           | N/A                                  | N/A   |

Note 1: For RWT temperature (T), minimum acceptable pump ΔP is:

$$1372.9 + 20.41 \text{ (Instrument error)} - [(T-40)/4] \text{ psid}$$

$$\text{Minimum } \Delta P = 1393.31 - [(\underline{90} - 40)/4] = \underline{1360.81} \text{ psid}$$

3.2 Independently verify pump ΔP calculation.

Performed By: Jimmy Reactor

3.3 Document observation of check valve stroke in Table 2.

| TABLE 2     |                |                     |                                   |
|-------------|----------------|---------------------|-----------------------------------|
| CHECK VALVE | TEST DIRECTION | TEST CRITERIA       | IS PROPER VALVE STROKE INDICATED? |
| 2SI-10C     | Closed         | 2P-89C NOT rotating | <u>YES</u> NO N/A                 |
| 2SI-10B     | Closed         | 2P-89B NOT rotating | <u>YES</u> NO N/A                 |

- 3.4 IF NO circled in Table 1 OR 2,  
THEN perform the following:
- Declare affected component inoperable.
  - Refer to Tech Spec 3.5.2 OR 3.5.3.
  - Notify Shift Manager.
  - Initiate WR/WO as applicable.

3.5 IF mechanical seal leakage greater than 5 DPM,  
THEN initiate a Work Request.

3.6 If mechanical seal leakage greater than 17 DPM, THEN  
initiate a Condition Report

**NOTE**

If HPSI pump 2P-89A OR 2P-89C inoperable, then 2SI-10C/2SI-10B testing may be deferred until inoperable HPSI pump restored to operable as per IST Coordinator.

- 3.7 IF 2SI-10C AND/OR 2SI-10B NOT tested (N/A circled in Table 2),  
THEN perform the following:
- Initiate notification to perform test during current quarter OR as directed by IST Coordinator.
  - Annotate on status board.
  - Annotate in Work Exceptions section of WR/WO.

3.8 Pump Data recorded in database AND reviewed by SRO.

3.9 IF this surveillance performed as PMT,  
THEN complete Unit 2 IST Data Collection (1015.0160).

Comments \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Performed By Jimmy Reactor Date TODAY  
Sammy Reactor

|   |   |   |
|---|---|---|
| <b>PROC./WORK PLAN NO.</b><br><b>2104.039</b> | <b>PROCEDURE/WORK PLAN TITLE:</b><br><b>HPSI SYSTEM OPERATION</b> | <b>PAGE: 125 of 244</b><br><b>CHANGE: 069</b> |
|---|---|---|

SUPPLEMENT 2

4.0 SUPERVISOR REVIEW AND ANALYSIS

- 4.1 Do all measured values recorded in ACCEPTANCE CRITERIA fall within specified LIMITING RANGE FOR OPERABILITY? YES NO
- 4.2 Do all measured values recorded in ACCEPTANCE CRITERIA fall within ACCEPTABLE NORMAL RANGE? (N/A if all results outside normal range also outside limiting range.) YES NO NA
- 4.3 IF NO answered to 4.1,  
THEN perform the following corrective actions:
- Verify LCO Tracking Record initiated per Conduct of Operations (1015.001).
  - Verify Condition Report initiated.
- 4.4 IF NO circled in 4.2,  
THEN perform the following corrective actions:
- Verify WR/WO has been initiated.
  - Complete Surveillance Test Schedule Change Request (1000.009D) to double test frequency.

Comments \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

- 4.5 Are all administrative requirements of this test satisfied? YES NO

Supervisor \_\_\_\_\_ Date \_\_\_\_\_

ADMINISTRATIVE JOB PERFORMANCE MEASURE

UNIT: 2 REV #: 001 DATE :  
\_\_\_\_\_

SYSTEM/DUTY AREA: Radiation Control A4

TASK: Calculated expected dose for Re-entry during emergency and if applicable limits will be exceeded

LP#: ASLP-RO-RADP

KA VALUE RO: 3.2 SRO: 3.7 KA REFERENCE: 2.3.4

APPROVED FOR ADMINISTRATION TO: RO: X SRO: \_\_\_\_\_

TASK LOCATION: INSIDE CR: \_\_\_\_\_ OUTSIDE CR: \_\_\_\_\_ BOTH: X

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE: \_\_\_\_\_ SIMULATOR: \_\_\_\_\_ Classroom: Perform

POSITION EVALUATED: RO: \_\_\_\_\_ SRO: \_\_\_\_\_

ACTUAL TESTING ENVIRONMENT: SIMULATOR: \_\_\_\_\_ PLANT SITE: \_\_\_\_\_ Classroom: \_\_\_\_\_

TESTING METHOD: SIMULATE: \_\_\_\_\_ PERFORM: \_\_\_\_\_

APPROXIMATE COMPLETION TIME IN MINUTES: 15 Minutes

REFERENCE(S): 1903.033 and 1903.033A form

EXAMINEE'S NAME: \_\_\_\_\_ KCN#: \_\_\_\_\_

EVALUATOR'S NAME: \_\_\_\_\_

THE EXAMINEE'S PERFORMANCE WAS EVALUATED AGAINST THE STANDARDS CONTAINED IN THIS JPM AND IS DETERMINED TO BE:

SATISFACTORY: \_\_\_\_\_ UNSATISFACTORY: \_\_\_\_\_

PERFORMANCE CHECKLIST COMMENTS:

\_\_\_\_\_  
\_\_\_\_\_

Start Time \_\_\_\_\_ Stop Time \_\_\_\_\_ Total Time \_\_\_\_\_

SIGNED: \_\_\_\_\_ DATE: \_\_\_\_\_

SIGNATURE INDICATES THIS JPM HAS BEEN COMPARED TO ITS APPLICABLE PROCEDURE BY A QUALIFIED INDIVIDUAL (NOT THE EXAMINEE) AND IS CURRENT WITH THAT REVISION.

**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

**THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:**

The examiner shall ensure that the examinee has been briefed on NUREG 1021 Appendix E.

**JPM INITIAL TASK CONDITIONS:**

The plant is tripped from 100% power.

300 gpm LOCA in progress.

Loss of Offsite power is in progress.

LOCA EOP is being implemented.

RDACS indicates an off site release in progress.

Whole body dose rates in area of work are 3.5 Rem/hr.

The SM and TSC director have not authorized exceeding 10CFR20 dose limits.

Site Area Emergency has been declared.

RP estimates that it will take approximately 65 minutes to complete emergency actions and stop the release to prevent exceeding RDACS General emergency criteria.

You have been selected to make the entry to stop the release.

Your ERIMS dose to date 943 mR.

**TASK STANDARD:**

Calculated estimated dose for the entry to be between 4443 and 4793 mR.

Determined that 10CFR20 dose limits are applicable (5R)

Determined that 10CFR20 limits would not be exceeded.

**TASK PERFORMANCE AIDS:**

1903.033 Protective Action Guidelines for Recue/Repair and Damage Control Teams.

**SIMULATOR SETUP:**

NA

**EXAMINER'S NOTES:**

**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

**INITIATING CUE:**

SM directs: "Using 1903.033 Protective Action Guidelines for Rescue/Repair and Damage control Teams determine your estimated year to date total dose for repair and determine if entry is allowed".

| PERFORMANCE CHECKLIST |    |  | STANDARDS  | (Circle One)  |
|-----------------------|----|--|--|---------------|
| (C)                   | 1. | Determine applicable dose limits.  | Using 1903.033 determines that administrative does limits do not apply and 10CFR20 limits do apply. (5 Rem)<br><br><b>Examiner note: the applicant may include a note about 200 mR allowance for exit but this is not required and is used for the EAD setpoint.</b> | N/A SAT UNSAT |
| (C)                   | 2. | Calculate the Operator's estimated dose  | Calculated the Operator's estimated dose to in the following range:<br><br>4443 to 4793 mR   | N/A SAT UNSAT |
| (C)                   | 5. | Determine if the Operator will exceed dose limits for entry to stop the release. | Determined that Jimmy Operator will not exceed 10CFR20 dose limits.  | N/A SAT UNSAT |
| <b>END</b>            |    |  |  |               |

**ADMINISTRATIVE JOB PERFORMANCE MEASURE****EXAMINER'S COPY****JPM INITIAL TASK CONDITIONS:**

Given the following Plant conditions:

- The plant is tripped from 100% power.
- 300 gpm LOCA in progress.
- Loss of Offsite power is in progress.
- LOCA EOP is being implemented.
- RDACS indicates an off site release in progress.
- Whole body dose rates in area of work are 3.5 Rem/hr.
- The SM and TSC director have not authorized exceeding 10CFR20 dose limits.
- Site Area Emergency has been declared.
- RP estimates that it will take approximately 65 minutes to complete emergency actions and stop the release.
- You have been selected to make the entry to stop the release.
- Your ERIMS dose to date 943 mR.

**INITIATING CUE:**

SM directs: "Using 1903.033 Protective Action Guidelines for Rescue/Repair and Damage control Teams determine your estimated year to date total dose for repair and determine if entry is allowed".

Your estimated TEDE dose: 4443 – 4793 mR

Applicable dose limits is: 5 rem

Can you perform re-entry and complete the task within applicable dose limits? (circle one) **YES** / NO

**ADMINISTRATIVE JOB PERFORMANCE MEASURE****EXAMINEE'S COPY****JPM INITIAL TASK CONDITIONS:**

Given the following Plant conditions:

- The plant is tripped from 100% power.
- 300 gpm LOCA in progress.
- Loss of Offsite power is in progress.
- LOCA EOP is being implemented.
- RDACS indicates an off site release in progress.
- Whole body dose rates in area of work are 3.5 Rem/hr.
- The SM and TSC director have not authorized exceeding 10CFR20 dose limits.
- Site Area Emergency has been declared.
- RP estimates that it will take approximately 65 minutes to complete emergency actions and stop the release.
- You have been selected to make the entry to stop the release.
- Your ERIMS dose to date 943 mR.

**INITIATING CUE:**

SM directs: "Using 1903.033 Protective Action Guidelines for Rescue/Repair and Damage control Teams determine your estimated year to date total dose for repair and determine if entry is allowed".

Your estimated TEDE dose: \_\_\_\_\_ mR

Applicable dose limits is: \_\_\_\_\_

Can you perform re-entry and complete the task within applicable dose limits? YES / NO

ADMINISTRATIVE JOB PERFORMANCE MEASURE

UNIT:  2  REV #:  002  DATE: \_\_\_\_\_

SYSTEM/DUTY AREA:  Conduct of Operations A5

TASK:  Perform Transferring Unit Auxiliaries from SU3 or Unit Aux to SU2

JTA#:  ANO-2-RO-ELECD-NORM-026

KA VALUE RO:  3.8  SRO:  4.0  KA REFERENCE:  2.1.32

APPROVED FOR ADMINISTRATION TO: RO: \_\_\_\_\_ SRO:  X

TASK LOCATION: INSIDE CR: \_\_\_\_\_ OUTSIDE CR: \_\_\_\_\_ BOTH:  X

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE:  Perform  SIMULATOR:  Perform  LAB: \_\_\_\_\_

POSITION EVALUATED: RO: \_\_\_\_\_ SRO: \_\_\_\_\_

ACTUAL TESTING ENVIRONMENT: SIMULATOR: \_\_\_\_\_ PLANT SITE: \_\_\_\_\_ LAB: \_\_\_\_\_

TESTING METHOD: SIMULATE: \_\_\_\_\_ PERFORM: \_\_\_\_\_

APPROXIMATE COMPLETION TIME IN MINUTES:  15 Minutes

REFERENCE(S):  OP 2107.001 Attachment P

EXAMINEE'S NAME: \_\_\_\_\_ KCN: \_\_\_\_\_

EVALUATOR'S NAME: \_\_\_\_\_

THE EXAMINEE'S PERFORMANCE WAS EVALUATED AGAINST THE STANDARDS CONTAINED IN THIS JPM AND IS DETERMINED TO BE:

SATISFACTORY: \_\_\_\_\_ UNSATISFACTORY: \_\_\_\_\_

PERFORMANCE CHECKLIST COMMENTS:

\_\_\_\_\_  
\_\_\_\_\_

Start Time \_\_\_\_\_ Stop Time \_\_\_\_\_ Total Time \_\_\_\_\_

SIGNED: \_\_\_\_\_ DATE: \_\_\_\_\_

SIGNATURE INDICATES THIS JPM HAS BEEN COMPARED TO ITS APPLICABLE PROCEDURE BY A QUALIFIED INDIVIDUAL (NOT THE EXAMINEE) AND IS CURRENT WITH THAT REVISION.

**ADMINISTRATIVE JOB PERFORMANCE MEASURE****THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:**


---

The examiner shall ensure that the examinee has been briefed on NUREG 1021 Appendix E.

---

**JPM INITIAL TASK CONDITIONS:**


---

Mode 4; 250 EFPD. All ESF systems are in normal alignment.

---

Startup Transformer #3 is supplying all AC electrical busses.

---

'A' and 'B' Condensate Pumps are running for post maintenance testing and 'C' and 'D' Condensate Pumps are in pull to lock.

---

'B' Circulating Water Pump is running and 'A' Circulating Water Pump is in pull to lock.

---

'B' and 'D' Reactor Coolant Pumps are running and 'A' and 'C' Reactor Coolant Pumps are secured.

---

Auto-transformer is out of service for the next 12 hours due to emergency forced outage, design engineering has completed an evaluation to allow SU#2 to be placed in service without the Auto-transformer being in service.

---

Unit 1 is at 100% and all busses energized from their Unit Auxiliary Transformer and with no equipment out of service.

---

Unit 1 SU#2 feeder to A1 (A111) is in normal after stop.

---

SU#2 Voltage Regulator is NOT in voltage reduction mode.

---

2H2 loading is 4MVA, 2H1 loading is 5 MVA

---

Data from Feeder breaker 2A112:  $V_{ab} = 4102\text{VAC}$ ;  $V_{bc} = 4150\text{VAC}$ ;  $V_{ca} = 4120\text{VAC}$

---

Data from Feeder breaker 2A113:  $I_a = 1810\text{amps}$ ;  $I_b = 1820\text{amps}$ ;  $I_c = 1810\text{amps}$

---

Data from Feeder breaker 2A212:  $V_{ab} = 4102\text{VAC}$ ;  $V_{bc} = 4150\text{VAC}$ ;  $V_{ca} = 4120\text{VAC}$

---

Data from Feeder breaker 2A213:  $I_a = 1600\text{amps}$ ,  $I_b = 1610\text{amps}$ ;  $I_c = 1620\text{amps}$

---

**TASK STANDARD:** Identify 3 errors in OP-2107.001 section 11.0

---

Procedure step 11.6 was marked as NA when the initial conditions stated that the auto-transformer was out of service.

---

Procedure step 11.8.2 was marked as complete when initial conditions stated that unit 1 breaker A111 (A1) was not in pull to lock but in normal after stop.

---

Procedure step 11.8.5 was marked as complete when the loading of 2A1 and 2A2 exceeded the limit and precaution value for 4160VAC winding loading of 21 MVA with forced air and oil available (Calculation done on Attachment 'P is correct)

---

And Identified the error that SU#2 can not be placed in service in current configuration.

---

|  |
|--|
| <b>TASK PERFORMANCE AIDS:</b> OP-2107.001 limits and precautions (section 5), completed section 11.0, and completed Attachment 'P' |
|--|

---

**EXAMINER'S NOTES:**


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**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

**INITIATING CUE:**

The SM directs, "Maintenance on Startup transformer #3 is planned and must be removed from service. Startup #2 must be placed in service with load shed BYPASSED. OP-2107.001 section 11.0 has been completed up to step 11.8.6. Step 11.7 of OP-2107.001 is NOT applicable. Perform verification of steps completed, identify errors and determine if Startup transformer #2 may be placed in service." Current Plant Conditions are the same as the initial plant conditions.

| PERFORMANCE CHECKLIST |    |  | STANDARDS   | (Circle One)  |
|-----------------------|----|--|---|---------------|
| (C)                   | 1. | Reviewed procedure OP-2107.001 section 11.0 and Attachment 'P' for errors. | Identified errors:<br>1) Procedure step 11.6 was marked as NA when the initial conditions stated that the auto-transformer was out of service.<br>2) Procedure step 11.8.2 was marked as complete when initial conditions stated that unit 1 breaker A111 (A1) was not in pull to lock but in normal after stop.<br>3) Procedure step 11.8.5 was marked as complete when the loading of 2A1 and 2A2 exceeded the limit and precaution value for 4160VAC winding loading of 21 MVA with forced air and oil available (Calculation done on Attachment 'P' is correct) | N/A SAT UNSAT |
| (C)                   | 2. | Determined that SU#2 availability.   | Determined that SU#2 could not be placed in service in current configuration.   | N/A SAT UNSAT |
| END                   |    |  |   |               |

**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

**EXAMINER's COPY**

**INITIAL PLANT CONDITIONS**

- Mode 4; 250 EFPD. All ESF systems are in normal alignment.
- Startup Transformer #3 is supplying all AC electrical busses.
- 'A' and 'B' Condensate Pumps are running for post maintenance testing and 'C' and 'D' Condensate Pumps are in pull to lock.
- 'B' Circulating Water Pump is running and 'A' Circulating Water Pump is in pull to lock.
- 'B' and 'D' Reactor Coolant Pumps are running and 'A' and 'C' Reactor Coolant Pumps are secured.
- Auto-transformer is out of service for the next 12 hours due to emergency forced outage, design engineering has completed an evaluation to allow SU#2 to be placed in service without the Auto-transformer being in service.
- Unit 1 is at 100% and all busses energized from their Unit Auxiliary Transformer and with no equipment out of service.
- Unit 1 SU#2 feeder to A1 (A111) is in normal after stop.
- SU#2 Voltage Regulator is NOT in voltage reduction mode.
- 2H2 loading is 4MVA, 2H1 loading is 5 MVA
- Data from Feeder breaker 2A112: Vab = 4102VAC; Vbc = 4150VAC; Vca = 4120VAC
- Data from Feeder breaker 2A113: Ia = 1810amps; Ib = 1820amps; Ic=1810amps
- Data from Feeder breaker 2A212: Vab = 4102VAC; Vbc = 4150VAC; Vca = 4120VAC
- Data from Feeder breaker 2A213: Ia = 1600amps, Ib = 1610amps; Ic = 1620amps

**Initiating CUE:**

The SM directs, "Maintenance on Startup transformer #3 is planned and must be removed from service. Startup #2 must be placed in service with load shed BYPASSED. OP-2107.001 section 11.0 has been completed up to step 11.8.6. Perform verification of steps completed, identify errors and determine if Startup transformer #2 may be placed in service." Current Plant Conditions are the same as the initial plant conditions.

List any errors identified below:

\_\_\_\_\_ Refer to performance standards on page 3 \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Can Startup Transformer #2 be placed in service given the initial condition information?       No



ANO-2-JPM-NRC-ADMIN-TTBCSRO  
ADMINISTRATIVE JOB PERFORMANCE MEASURE

UNIT:   2   REV #:   003   DATE: \_\_\_\_\_

SYSTEM/DUTY AREA:   Conduct of Operations     A6  

TASK:   Review Time to Boil Calculation  

JTA#:   ANO2-RO-NORM-4  

KA VALUE RO:   4.3   SRO:   4.4   KA REFERENCE:   2.1.23  

APPROVED FOR ADMINISTRATION TO: RO: \_\_\_\_\_ SRO:   X  

TASK LOCATION: INSIDE CR: \_\_\_\_\_ OUTSIDE CR: \_\_\_\_\_ BOTH:   X  

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE: \_\_\_\_\_ SIMULATOR:   Perform   Classroom:   Perform  

POSITION EVALUATED: RO: \_\_\_\_\_ SRO:   X  

ACTUAL TESTING ENVIRONMENT: SIMULATOR: \_\_\_\_\_ PLANT SITE: \_\_\_\_\_ Classroom: \_\_\_\_\_

TESTING METHOD: SIMULATE: \_\_\_\_\_ PERFORM: \_\_\_\_\_

APPROXIMATE COMPLETION TIME IN MINUTES:   20 Minutes  

REFERENCE(S):   OP-1015.008 Attachment E and OP-2103.011  

EXAMINEE'S NAME: \_\_\_\_\_ KCN: \_\_\_\_\_

EVALUATOR'S NAME: \_\_\_\_\_

THE EXAMINEE'S PERFORMANCE WAS EVALUATED AGAINST THE STANDARDS CONTAINED IN THIS JPM AND IS DETERMINED TO BE:

SATISFACTORY: \_\_\_\_\_ UNSATISFACTORY: \_\_\_\_\_

PERFORMANCE CHECKLIST COMMENTS:

\_\_\_\_\_  
\_\_\_\_\_

Start Time \_\_\_\_\_ Stop Time \_\_\_\_\_ Total Time \_\_\_\_\_

SIGNED: \_\_\_\_\_ DATE: \_\_\_\_\_

SIGNATURE INDICATES THIS JPM HAS BEEN COMPARED TO ITS APPLICABLE PROCEDURE BY A QUALIFIED INDIVIDUAL (NOT THE EXAMINEE) AND IS CURRENT WITH THAT REVISION.

**THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:**

---

The examiner shall ensure that the examinee has been briefed on NUREG 1021 Appendix E.

---

---

**JPM INITIAL TASK CONDITIONS:**

---

Plant shutdown for repair of Steam Generator Tube Leak. Making preparations for draining the RCS to 24 inches above the bottom of the hotleg to install nozzle dams. PZR level is 40%.

---

Time after shutdown = 35 hours; one (1) PZR code safety valve is removed; PZR manway is installed;

---

ECCS vent valves are de-energized OPEN; NO RCP seal work in progress; NO RCS cold or hot leg openings;

---

RCS Temperature is 115°F.

---

---

**TASK STANDARD:**

---

Identify errors in the original Time to boil calculation :

---

1) Initial RCS water level was recorded as 42" above the bottom of the hot leg instead of the correct 24".

---

2) Current RCS temperature was recorded as 80°F instead of 115°F as stated in the initial conditions.

---

AND

---

Identify that the RCS cannot be drained to lowered inventory due to TTCU is less than 2 hours or TTB <15 minutes

---

**TASK PERFORMANCE AIDS:**

---

Computer operational with the current revision of LOSDC2 installed.

---

(SP-94-C-0001-01, Rev. 13), set up shortcut to program on the desktop. Marked up copy of LOSDC2 printout.

---

**SIMULATOR SETUP:**

---

NA

---

**EXAMINER'S NOTES:**

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---

**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

**INITIATING CUE:**

CRS/SM directs: "Perform a supervisory review of the given time to boil and time to core uncover calculation using LOSDC2 program and identify any errors and determine if conditions are met to drain the RCS to lowered inventory."

| PERFORMANCE CHECKLIST   |    |  | STANDARDS   | (Circle One)  |
|---|----|--|---|---------------|
|   | 1. | Compare time to boil (TTB) calculation using LOSDC2 program.   | Computer program independently run and calculations compared  | N/A SAT UNSAT |
| (C)   | 2. | Identified errors  | 1) Initial RCS water level was recorded as 42" above the bottom of the hot leg instead of the correct 24".<br><br>2) Current RCS temperature was recorded as 80°F instead of the correct 115°F. | N/A SAT UNSAT |
| (C)   | 3. | Determined that the actual Time until core uncover is < 2 hours<br>or<br>Time to boil: is < 15 minutes | Determined that the RCS cannot be drained to lowered inventory.   | N/A SAT UNSAT |
| <b>EXAMINER'S NOTE:</b>   |    |  |   |               |
| Prompt the Examinee that the file SHOULD NOT be printed or saved. |    |  |   |               |
| <b>END</b>  |    |  |   |               |

EXAMINER'S COPY

**JPM INITIAL TASK CONDITIONS:**

Given the following Plant conditions:

- Plant shutdown for repair of Steam Generator Tube Leak
- Making preparations for draining the RCS to 24 inches above the bottom of the hot leg to install nozzle dams
- PZR level is 40%
- Time after shutdown = 35 hours
- One (1) PZR code safety valve is removed
- PZR manway is installed
- ECCS vent valves are de-energized OPEN
- NO RCP seal work in progress
- NO RCS cold or hot leg openings
- RCS Temperature is 115°F

**INITIATING CUE:**

CRS/SM directs: "CRS/SM directs: "Perform a supervisory review of the given time to boil and time to core uncover calculation using LOSDC2 program and determine if conditions are met to drain the RCS to lowered inventory IAW plant procedures."

**Do not print data or save LOSDC2 file.**

List the errors identified below:

\_\_\_\_\_ See task standards page 3 \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Can the RCS be drained to reduced inventory given the initial condition information? No

**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

**EXAMINEE'S COPY**

**JPM INITIAL TASK CONDITIONS:**

Given the following Plant conditions:

- Plant shutdown for repair of Steam Generator Tube Leak
- Making preparations for draining the RCS to 24 inches above the bottom of the hot leg to install nozzle dams
- PZR level is 40%
- Time after shutdown = 35 hours
- One (1) PZR code safety valve is removed
- PZR manway is installed
- ECCS vent valves are de-energized OPEN
- NO RCP seal work in progress
- NO RCS cold or hot leg openings
- RCS Temperature is 115°F

CRS/SM directs: “CRS/SM directs: “Perform a supervisory review of the given time to boil and time to core uncover calculation using LOSDC2 program and determine if conditions are met to drain the RCS to lowered inventory.”

**Do not print data or save LOSDC2 file.**

List any errors identified below:

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Can the RCS be drained to reduced inventory given the initial condition information? \_\_\_\_\_

ADMINISTRATIVE JOB PERFORMANCE MEASURE

UNIT:  2  REV #:  003  DATE: \_\_\_\_\_

SYSTEM/DUTY AREA:  Equipment Control A7

TASK:  Supervisory review of maintenance activities for configuration control

JTA#:  ANO-SRO-ADMIN-NORM-48

KA VALUE RO:  3.9  SRO:  4.3  KA REFERENCE:  2.2.14

APPROVED FOR ADMINISTRATION TO: RO: \_\_\_\_\_ SRO:  X

TASK LOCATION: INSIDE CR: \_\_\_\_\_ OUTSIDE CR: \_\_\_\_\_ BOTH:  X

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE: \_\_\_\_\_ SIMULATOR:  Perform  Classroom:  Perform

POSITION EVALUATED: RO: \_\_\_\_\_ SRO:  X

ACTUAL TESTING ENVIRONMENT: SIMULATOR: \_\_\_\_\_ PLANT SITE: \_\_\_\_\_ Classroom: \_\_\_\_\_

TESTING METHOD: SIMULATE: \_\_\_\_\_ PERFORM: \_\_\_\_\_

APPROXIMATE COMPLETION TIME IN MINUTES:  10 Minutes

REFERENCE(S):  1025.003, Conduct of Maintenance, 2104.029 Service Water system operations

EXAMINEE'S NAME: \_\_\_\_\_ KCN: \_\_\_\_\_

EVALUATOR'S NAME: \_\_\_\_\_

THE EXAMINEE'S PERFORMANCE WAS EVALUATED AGAINST THE STANDARDS CONTAINED IN THIS JPM AND IS DETERMINED TO BE:

SATISFACTORY: \_\_\_\_\_ UNSATISFACTORY: \_\_\_\_\_

PERFORMANCE CHECKLIST COMMENTS:

\_\_\_\_\_  
\_\_\_\_\_

Start Time \_\_\_\_\_ Stop Time \_\_\_\_\_ Total Time \_\_\_\_\_

SIGNED: \_\_\_\_\_ DATE: \_\_\_\_\_

SIGNATURE INDICATES THIS JPM HAS BEEN COMPARED TO ITS APPLICABLE PROCEDURE BY A QUALIFIED INDIVIDUAL (NOT THE EXAMINEE) AND IS CURRENT WITH THAT REVISION.

**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

**THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:**

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The examiner shall ensure that the examinee has been briefed on NUREG 1021 Appendix E.

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**JPM INITIAL TASK CONDITIONS:**

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I&C Maintenance personnel have completed troubleshooting the Spent Fuel Cooling radiation monitor 2RE-1525.

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The troubleshooting required isolating AND draining the radiation monitor.

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There are currently no Equipment Status Log (ESL) entries.

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Maintenance Configuration Tracking Log 1025.003C was used for configuration control.

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**TASK STANDARD:**

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Identified errors.

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1) 2SW-1525A 'Restoration' position is listed as CLOSED when required to be OPEN.

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2) 2SW-1525M 'Require position for Maintenance' is listed as CLOSED when required to be OPEN to drain the system.

---

3) 2SW-1525H 'Restoration' position is listed as OPEN when required to be CLOSED.

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4) 2SW-1525J Restorer and Verifier initials are the same.

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**TASK PERFORMANCE AIDS:**

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Marked up copy of form 1025.003C, Maintenance Configuration Tracking Log

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Copy of OP-2104.029 or computer.

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**SIMULATOR SETUP:**

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NA

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**EXAMINER'S NOTES:**

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**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

**INITIATING CUE:**

CRS/SM directs: "Perform an Operations verification of the given 1025.003C form, Maintenance Configuration Tracking Log following maintenance on SFP cooling radiation monitor 2RE-1525. List any error(s) with the form completion below"

| PERFORMANCE CHECKLIST  |    | STANDARDS   |   | (Circle One)  |
|--|----|---|---|---------------|
| <b>Evaluator's Note: Provide examinee with a copy of 1025.003, Maintenance Configuration Tracking Log Sheet.</b> |    |   |   |               |
|  | 1. | Review the Maintenance Configuration Tracking Log Sheet | Examinee reviewed the Maintenance Configuration Tracking Log Sheet and compared it to the normal lineup in 2104.029, Attachment E.  | N/A SAT UNSAT |
| (C)  | 2. | Identify errors.  | Identify errors<br><br>1) 2SW-1525A 'Restoration' position is listed as CLOSED when required to be OPEN.<br><br>2) 2SW-1525M 'Require position for Maintenance' is listed as CLOSED when required to be OPEN to drain the system.<br><br>3) 2SW-1525H 'Restoration' position is listed as OPEN when required to be CLOSED.<br><br>4) 2SW-1525J Restorer and Verifier initials are the same. | N/A SAT UNSAT |
| <b>END</b>   |    |   |   |               |





**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

UNIT: 2 REV #: 001 DATE :  
\_\_\_\_\_

SYSTEM/DUTY AREA: Radiation Control A8

TASK: Calculated expected dose for Re-entry during an emergency and determine if entry is allowed

LP#: ASLP-RO-RADP

KA VALUE RO: 3.2 SRO: 3.7 KA REFERENCE: 2.3.4

APPROVED FOR ADMINISTRATION TO: RO: SRO: X

TASK LOCATION: INSIDE CR: OUTSIDE CR: BOTH: X

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE: SIMULATOR: Classroom: Perform

POSITION EVALUATED: RO: SRO:

ACTUAL TESTING ENVIRONMENT: SIMULATOR: PLANT SITE: Classroom:

TESTING METHOD: SIMULATE: PERFORM:

APPROXIMATE COMPLETION TIME IN MINUTES: 15 Minutes

REFERENCE(S): 1903.033 and 1903.033A form

EXAMINEE'S NAME: KCN:

EVALUATOR'S NAME:

THE EXAMINEE'S PERFORMANCE WAS EVALUATED AGAINST THE STANDARDS CONTAINED IN THIS JPM AND IS DETERMINED TO BE:

SATISFACTORY: UNSATISFACTORY:

PERFORMANCE CHECKLIST COMMENTS:

\_\_\_\_\_  
\_\_\_\_\_

Start Time Stop Time Total Time

SIGNED: DATE:

SIGNATURE INDICATES THIS JPM HAS BEEN COMPARED TO ITS APPLICABLE PROCEDURE BY A QUALIFIED INDIVIDUAL (NOT THE EXAMINEE) AND IS CURRENT WITH THAT REVISION.

**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

**THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:**

The examiner shall ensure that the examinee has been briefed on NUREG 1021 Appendix E.

**JPM INITIAL TASK CONDITIONS:**

The plant is tripped from 100% power.

300 gpm LOCA in progress.

Loss of Offsite power is in progress.

LOCA EOP is being implemented.

RDACS indicates an off site release in progress.

A Site Area Emergency has been declared based on the RDACS dose rate.

RDACS dose rates are continuing to rise and the trend indicates they will exceed GE criteria if the release is not terminated.

Whole body dose rates in area of work are 7.3 Rem/hr.

RP estimates that it will take approximately 75 minutes to complete emergency actions and stop the release which will prevent exceeding RDACS General emergency criteria.

Joe Mechanic and Ralph RP have been selected to make the entry to stop the release but have not volunteered.

Joe Mechanic and Ralph RP have been briefed on the task and entry requirements.

Joe Mechanic's ERIMS dose to date is 382 mR and has badge number 20031.

Ralph RP's ERIMS dose to date 1353 mR and has badge number 20005.

**TASK STANDARD:**

Determine that 10CFR20 limits can be exceeded for protection of Large populations by calculating Joe Mechanics and Ralph RP's dose and complete 1903.033A form for entry.

**TASK PERFORMANCE AIDS:**

1903.033 Protective Action Guidelines for Recue/Repair and Damage Control Teams.

**SIMULATOR SETUP:**

NA

**EXAMINER'S NOTES:**

**ADMINISTRATIVE JOB PERFORMANCE MEASURE****INITIATING CUE:**

The SM directs, use 1903.033 Protective Action Guidelines for Rescue/Repair and Damage control Teams determine Joe Mechanic and Ralph RP's estimated year to date total dose for repair and determine if entry is allowed and complete 1903.033A if entry is allowed.

| PERFORMANCE CHECKLIST   |    |   | STANDARDS   | (Circle One)  |
|---|----|---|---|---------------|
| (C)   | 1. | Calculate Joe Mechanic's estimated dose                                       | Calculated Joe Mechanic's estimated dose to in the following range:<br>9307 to 9707 mR  | N/A SAT UNSAT |
| (C)   | 2. | Calculate Ralph RP's estimated dose   | Calculated Ralph RP's estimated dose to in the following range:<br>10278 to 10678 mR  | N/A SAT UNSAT |
| (C)   | 3. | Determine if Joe Mechanic's is allowed to make the entry to stop the release. | Determined that Joe Mechanic is allowed to make the entry for protection of Large populations.  | N/A SAT UNSAT |
| (C)   | 4. | Determine if Ralph RP's is allowed to make the entry to stop the release.     | Determined that Ralph RP is allowed to make the entry for protection of Large populations.  | N/A SAT UNSAT |
| (C)   | 5. | Complete 1903.033A  | Completed section 1 of 1903.033A, selected box 2 for protection of large populations (dose < 25 Rem)<br><br>Completed section 2 of 1903.033A included Joe Mechanic and Ralph RP as exceeding 10CFR20 dose limits. | N/A SAT UNSAT |
| <b>Examiner Note: If the applicant fills out the 1903.033A but does not sign the form for the TSC director or for the briefing being complete this is still considered they completed the task correctly.</b> |    |   |   |               |
| <b>END</b>  |    |   |   |               |

**ADMINISTRATIVE JOB PERFORMANCE MEASURE****EXAMINER'S COPY****JPM INITIAL TASK CONDITIONS:**

Given the following Plant conditions:

- The plant is tripped from 100% power.
- 300 gpm LOCA in progress.
- Loss of Offsite power is in progress.
- LOCA EOP is being implemented.
- RDACS indicates an off site release in progress.
- A Site Area Emergency has been declared based on the RDACS dose rate.
- RDACS dose rates are continuing to rise and the trend indicates they will exceed GE criteria if the release is not terminated.
- Whole body dose rates in area of work are 7.3 Rem/hr.
- RP estimates that it will take approximately 75 minutes to complete emergency actions and stop the release which will prevent exceeding GE criteria.
- Joe Mechanic and Ralph RP have been selected to make the entry to stop the release but have not volunteered.
- Joe Mechanic and Ralph RP have been briefed on the task and entry requirements.
- The TSC director has authorized 10CFR20 limits can be exceeded.
- Joe Mechanic's ERIMS dose to date is 382 mR and has badge number 20031.
- Ralph RP's ERIMS dose to date 1353 mR and has badge number 20005.

**INITIATING CUE:**

The SM directs, use 1903.033 Protective Action Guidelines for Rescue/Repair and Damage control Teams determine Joe Mechanic and Ralph RP's estimated year to date total dose for repair and determine if entry is allowed and complete 1903.033A if entry is allowed.

Joe Mechanic's estimated TEDE dose: 9507 (acceptable band 9307 to 9707) mR

Ralph RP's estimated TEDE dose: 10478 (acceptable band 10278 to 10678) mR

Can Joe Mechanic perform re-entry and complete the task?  YES / NO

Can Ralph RP perform re-entry and complete the task?  YES / NO

**ADMINISTRATIVE JOB PERFORMANCE MEASURE****EXAMINEE'S COPY****JPM INITIAL TASK CONDITIONS:**

Given the following Plant conditions:

- The plant is tripped from 100% power.
- 300 gpm LOCA in progress.
- Loss of Offsite power is in progress.
- LOCA EOP is being implemented.
- RDACS indicates an off site release in progress.
- A Site Area Emergency has been declared based on the RDACS dose rate.
- RDACS dose rates are continuing to rise and the trend indicates they will exceed GE criteria if the release is not terminated.
- Whole body dose rates in area of work are 7.3 Rem/hr.
- RP estimates that it will take approximately 75 minutes to complete emergency actions and stop the release which will prevent exceeding GE criteria.
- Joe Mechanic and Ralph RP have been selected to make the entry to stop the release but have not volunteered.
- Joe Mechanic and Ralph RP have been briefed on the task and entry requirements.
- The TSC director has authorized 10CFR20 limits can be exceeded.
- Joe Mechanic's ERIMS dose to date is 382 mR and has badge number 20031.
- Ralph RP's ERIMS dose to date 1353 mR and has badge number 20005.

**INITIATING CUE:**

The SM directs, use 1903.033 Protective Action Guidelines for Rescue/Repair and Damage control Teams determine Joe Mechanic and Ralph RP's estimated year to date total dose for repair and determine if entry is allowed and complete 1903.033A if entry is allowed.

Joe Mechanic's estimated TEDE dose: \_\_\_\_\_ mR

Ralph RP's estimated TEDE dose: \_\_\_\_\_ mR

Can Joe Mechanic perform re-entry and complete the task? YES / NO

Can Ralph RP perform re-entry and complete the task? YES / NO

JOB PERFORMANCE MEASURE

ANO-2-JPM-NRC-ADMIN-EAL11 REV 02

UNIT: 2 REV #: 002 DATE:

SYSTEM/DUTY AREA: Emergency Plan A9

TASK: Determine Emergency Action Level/Protective Action Recommendation (Time Critical JPM)

JTA#: ANO-SRO-EPLAN-EMERG-278

KA VALUE RO: 2.9 SRO: 4.6 KA REFERENCE: 2.4.41

APPROVED FOR ADMINISTRATION TO: RO: SRO: X

TASK LOCATION: INSIDE CR: OUTSIDE CR: BOTH: X

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE: SIMULATOR: Perform CLASSROOM:

POSITION EVALUATED: RO: SRO:

ACTUAL TESTING ENVIRONMENT: SIMULATOR: PLANT SITE: CLASSROOM:

TESTING METHOD: SIMULATE: PERFORM:

APPROXIMATE COMPLETION TIME IN MINUTES: 5 Minutes - Read initial Conditions 15 Minutes - EAL Classification

REFERENCE(S): 1903.010

EXAMINEE'S NAME: KCN:

EVALUATOR'S NAME:

THE EXAMINEE'S PERFORMANCE WAS EVALUATED AGAINST THE STANDARDS CONTAINED IN THIS JPM AND IS DETERMINED TO BE:

SATISFACTORY: UNSATISFACTORY:

PERFORMANCE CHECKLIST COMMENTS:

Start Time Stop Time Total Time

SIGNED: DATE:

SIGNATURE INDICATES THIS JPM HAS BEEN COMPARED TO ITS APPLICABLE PROCEDURE BY A QUALIFIED INDIVIDUAL (NOT THE EXAMINEE) AND IS CURRENT WITH THAT REVISION.

**THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:**

The examiner shall ensure that the examinee has been briefed on NUREG 1021 Appendix E.

**JPM INITIAL TASK CONDITIONS:**

- Unit 2 has been operating at 100% for 230 consecutive days
- A plant trip has occurred due to a loss of offsite power with a concurrent Loss of Coolant Accident estimated to be 1500 gpm
- The reactor trip occurred 4 hours ago
- High Range containment radiation monitor, 2RITS-8925-1 reads 74450 R/hr and trending up
- High Range containment radiation monitor 2RITS-8925-2 reads 77730 R/hr and trending up
- RCS average Core Exit Thermocouples are reading 430°F
- PZR pressure is 325 psia
- Containment Pressure is 20 psia and slowly trending down
- RDACs indicates NO offsite release in progress
- All safety systems are responding as designed

**TASK STANDARD:** Determine the following ( Time Critical - 5 minutes to read initial conditions/ 15 minutes to classify event):

1. Determine containment radiation is at GE level
2. Determine EAL classification GE, 1.5, Containment Radiation readings which indicate LOCA and >50% fuel overheat

**TASK PERFORMANCE AIDS:** 1903.010, Emergency Action Levels

**INITIATING CUE:**

Determine the highest EAL classification from the given initial conditions (list EAL classification event number).

|            |    | PERFORMANCE CHECKLIST  | STANDARD   | (Circle One)  |
|------------|----|--|--|---------------|
|            | 1. | Determined containment radiation readings are not modified due to power history. | Using OP 1903.010 Attachment 6, verified power history does not require modifying containment radiation readings.                                      | N/A SAT UNSAT |
| (C)        | 2. | Determined containment radiation is GE level                                     | Using OP 1903.010 Attachment 6, determined containment radiation readings the GE criteria. (critical element verified by classifying EAL as event 1.5) | N/A SAT UNSAT |
| (C)        | 3. | Determined GE EAL classification.  | Using OP 1903.010, determined GE EAL classification 1.5, Containment Radiation readings which indicate LOCA and >50% fuel overheat                     | N/A SAT UNSAT |
| (C)        | 4. | JPM complete in 15 minutes.  | JPM complete in 15 minutes with 5 minutes to read conditions.  | N/A SAT UNSAT |
| <b>END</b> |    |  |  |               |

## Examiner's Copy

### JPM is TIME CRITICAL

#### **JPM INITIAL TASK CONDITIONS:**

- Unit 2 has been operating at 100% for 230 consecutive days
- A plant trip has occurred due to a loss of offsite power with a concurrent Loss of Coolant Accident estimated to be 1500 gpm
- The reactor trip occurred 4 hours ago
- High Range containment radiation monitor, 2RITS-8925-1 reads 74450 R/hr and trending up
- High Range containment radiation monitor 2RITS-8925-2 reads 77730 R/hr and trending up
- RCS average Core Exit Thermocouples are reading 430°F
- PZR pressure is 325 psia
- Containment Pressure is 20 psia and slowly trending down
- RDACs indicates NO offsite release in progress
- All safety systems are responding as designed

#### **INITIATING CUE:**

Determine the highest EAL classification from the given initial conditions (list EAL classification event number).

#### **ANSWER:**

**EAL classification and event number:**

GE, EAL 1.5, Containment Radiation readings which indicate LOCA and >50% fuel overheating

---

## Examinee's Copy

### JPM is TIME CRITICAL

#### **JPM INITIAL TASK CONDITIONS:**

- Unit 2 has been operating at 100% for 230 consecutive days
- A plant trip has occurred due to a loss of offsite power with a concurrent Loss of Coolant Accident estimated to be 1500 gpm
- The reactor trip occurred 4 hours ago
- High Range containment radiation monitor, 2RITS-8925-1 reads 74450 R/hr and trending up
- High Range containment radiation monitor 2RITS-8925-2 reads 77730 R/hr and trending up
- RCS average Core Exit Thermocouples are reading 430°F
- PZR pressure is 325 psia
- Containment Pressure is 20 psia and slowly trending down
- RDACs indicates NO offsite release in progress
- All safety systems are responding as designed

#### **INITIATING CUE:**

Determine the highest EAL classification from the given initial conditions (list EAL classification event number).

#### **ANSWER:**

**EAL classification and event number:**

---

| Facility: <u>Arkansas Nuclear One Unit 2</u>   |                                     | Date of Examination: <u>08/27/2012</u> |
|--|-------------------------------------|--|
| Exam Level: RO <input type="checkbox"/> SRO-I <input checked="" type="checkbox"/> SRO-U <input type="checkbox"/>   |                                     | Operating Test No.: <u>2012-1</u>      |
| Control Room Systems® (8 for RO); (7 for SRO-I); (2 or 3 for SRO-U, including 1 ESF)   |                                     |  |
| System / JPM Title   | Type Code*                          | Safety Function                        |
| S1. ANO-2-JPM-NRC-SIT09<br>006 A4.02 RO-4.0/SRO-3.8<br>Isolate SITs following SIAS with SIAS reset   | A/D/EN/L/S                          | 2<br>Inventory Control                 |
| S2. ANO-2-JPM-NRC-ELEC05<br>062 A4.01 RO3.3/SRO3.1<br>Transfer Auxiliaries from SU#2 to SU#3 for 2A-1  | N/S                                 | 6<br>Electrical                        |
| S3. ANO-2-JPM-NRC-SDBC2<br>041 A4.05 RO-3.1/SRO-3.3<br>Manually Operate SDBCS valves   | A/L/N/S                             | 4<br>Heat Removal                      |
| S4. ANO-2-JPM-NRC-CCW01<br>008 A4.01 RO-3.3/SRO-3.1<br>Secure CCW system using EOP   | D/L/S                               | 8<br>Plant service systems             |
| S5. ANO-2-JPM-NRC-CNMT2<br>103 A3.01 RO-3.9/SRO-4.2<br>Drain the containment sump  | A/D/P/S                             | 5<br>Containment Integrity             |
| S6. ANO-2-JPM-NRC-CEA01<br>001 A4.03 RO-4.0/SRO-3.7<br>Perform a CEA exercise  | D/P/S                               | 1<br>Reactivity control                |
| S7. ANO-2-JPM-NRC-CPC06<br>012 A4.02 RO-3.3/SRO-3.4<br>Place #1 CEAC to inop on "B" CPC  | D/S                                 | 7<br>Instrumentation                   |
| In-Plant Systems® (3 for RO); (3 for SRO-I); (3 or 2 for SRO-U)  |                                     |  |
| P1. ANO-2-JPM-NRC-EDDCB<br>064 A4.01 RO-4.0/SRO-4.3<br>Start EDG 2K-4B without DC  | A/D/E/L                             | 6<br>Electrical                        |
| P2. ANO-2-JPM-NRC-MGSU<br>001 A4.08 RO-3.7/SRO-3.4<br>Start the First MG set   | D/L                                 | 1<br>Reactivity control                |
| P3. ANO-2-JPM-NRC-FPEM1<br>033 A2.03 RO-3.1/SRO-3.5<br>Perform emergency SW make up to SFP   | D/E/R                               | 8<br>Plant service systems             |
| @ All RO and SRO-I control room (and in-plant) systems must be different and serve different safety functions; all 5 SRO-U systems must serve different safety functions; in-plant systems and functions may overlap those tested in the control room. |                                     |  |
| * Type Codes   | Criteria for RO / SRO-I / SRO-U     |  |
| (A)lternate path   | 4-6 / 4-6 / 2-3                     |  |
| (C)ontrol room   |                                     |  |
| (D)irect from bank   | ≤ 9 / ≤ 8 / ≤ 4                     |  |
| (E)mergency or abnormal in-plant   | ≥ 1 / ≥ 1 / ≥ 1                     |  |
| (EN)gineered safety feature  | - / - / ≥1 (control room system)    |  |
| (L)ow-Power / Shutdown   | ≥ 1 / ≥ 1 / ≥ 1                     |  |
| (N)ew or (M)odified from bank including 1(A)   | ≥ 2 / ≥ 2 / ≥ 1                     |  |
| (P)revious 2 exams   | ≤ 3 / ≤ 3 / ≤ 2 (randomly selected) |  |
| (R)CA  | ≥ 1 / ≥ 1 / ≥ 1                     |  |
| (S)imulator  |                                     |  |

| Facility: <u>Arkansas Nuclear One Unit 2</u>   |                                     | Date of Examination: <u>08/27/2012</u> |
|--|-------------------------------------|--|
| Exam Level: RO <input checked="" type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U <input type="checkbox"/>   |                                     | Operating Test No.: <u>2012-1</u>      |
| Control Room Systems <sup>@</sup> (8 for RO); (7 for SRO-I); (2 or 3 for SRO-U, including 1 ESF)   |                                     |  |
| System / JPM Title   | Type Code*                          | Safety Function                        |
| S1. ANO-2-JPM-NRC-SIT09<br>006 A4.02 RO-4.0/SRO-3.8<br>Isolate SITs following SIAS with SIAS reset   | A/D/EN/L/S                          | 2<br>Inventory Control                 |
| S2. ANO-2-JPM-NRC-ELEC05<br>062 A4.01 RO3.3/SRO3.1<br>Transfer Auxiliaries from SU#2 to SU#3 for 2A-1  | N/S                                 | 6<br>Electrical                        |
| S3. ANO-2-JPM-NRC-SDBC2<br>041 A4.05 RO-3.1/SRO-3.3<br>Manually Operate SDBCS valves   | A/L/N/S                             | 4<br>Heat Removal                      |
| S4. ANO-2-JPM-NRC-CCW01<br>008 A4.01 RO-3.3/SRO-3.1<br>Secure CCW system using EOP   | D/L/S                               | 8<br>Plant service systems             |
| S5. ANO-2-JPM-NRC-CNMT2<br>103 A3.01 RO-3.9/SRO-4.2<br>Drain the containment sump  | A/D/P/S                             | 5<br>Containment Integrity             |
| S6. ANO-2-JPM-NRC-CEA01<br>001 A4.03 RO-4.0/SRO-3.7<br>Perform a CEA exercise  | D/P/S                               | 1<br>Reactivity control                |
| S7. ANO-2-JPM-NRC-CPC06<br>012 A4.02 RO-3.3/SRO-3.4<br>Place #1 CEAC to inop on "B" CPC  | D/S                                 | 7<br>Instrumentation                   |
| S8. ANO-2-JPM-NRC-AOP3<br>010 A2.02 RO-3.9/SRO-3.9<br>Isolate failed PZR spray valve   | A/D/P/S                             | 3<br>Pressure Control                  |
| In-Plant Systems <sup>@</sup> (3 for RO); (3 for SRO-I); (3 or 2 for SRO-U)  |                                     |  |
| P1. ANO-2-JPM-NRC-EDDCB<br>064 A4.01 RO-4.0/SRO-4.3<br>Start EDG 2K-4B without DC  | A/D/E/L                             | 6<br>Electrical                        |
| P2. ANO-2-JPM-NRC-MGSU<br>001 A4.08 RO-3.7/SRO-3.4<br>Start the First MG set   | D/L                                 | 1<br>Reactivity control                |
| P3. ANO-2-JPM-NRC-FPEM1<br>033 A2.03 RO-3.1/SRO-3.5<br>Perform emergency SW make up to SFP   | D/E/R                               | 8<br>Plant service systems             |
| <p><sup>@</sup> All RO and SRO-I control room (and in-plant) systems must be different and serve different safety functions; all 5 SRO-U systems must serve different safety functions; in-plant systems and functions may overlap those tested in the control room.</p> |                                     |  |
| * Type Codes   | Criteria for RO / SRO-I / SRO-U     |  |
| (A)lternate path   | 4-6 / 4-6 / 2-3                     |  |
| (C)ontrol room   |                                     |  |
| (D)irect from bank   | ≤ 9 / ≤ 8 / ≤ 4                     |  |
| (E)mergency or abnormal in-plant   | ≥ 1 / ≥ 1 / ≥ 1                     |  |
| (EN)gineered safety feature  | - / - / ≥ 1 (control room system)   |  |
| (L)ow-Power / Shutdown   | ≥ 1 / ≥ 1 / ≥ 1                     |  |
| (N)ew or (M)odified from bank including 1(A)   | ≥ 2 / ≥ 2 / ≥ 1                     |  |
| (P)revious 2 exams   | ≤ 3 / ≤ 3 / ≤ 2 (randomly selected) |  |
| (R)CA  | ≥ 1 / ≥ 1 / ≥ 1                     |  |
| (S)imulator  |                                     |  |

|  |                                     |  |
|--|-------------------------------------|--|
| Facility: <u>Arkansas Nuclear One Unit 2</u>   |                                     | Date of Examination: <u>08/27/2012</u> |
| Exam Level: RO <input type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U <input checked="" type="checkbox"/>   |                                     | Operating Test No.: <u>2012-1</u>      |
| Control Room Systems <sup>@</sup> (8 for RO); (7 for SRO-I); (2 or 3 for SRO-U, including 1 ESF)   |                                     |  |
| System / JPM Title   | Type Code*                          | Safety Function                        |
| S1. ANO-2-JPM-NRC-SIT09<br>006 A4.02 RO-4.0/SRO-3.8<br>Isolate SITs following SIAS with SIAS reset   | A/D/EN/L/S                          | 2<br>Inventory Control                 |
| S2. ANO-2-JPM-NRC-ELEC05<br>062 A4.01 RO3.3/SRO3.1<br>Transfer Auxiliaries from SU#2 to SU#3 for 2A-1  | N/S                                 | 6<br>Electrical                        |
| S3. ANO-2-JPM-NRC-SDBC2<br>041 A4.05 RO-3.1/SRO-3.3<br>Manually Operate SDBCS valves   | A/L/N/S                             | 4<br>Heat Removal                      |
|  |                                     |  |
|  |                                     |  |
|  |                                     |  |
|  |                                     |  |
|  |                                     |  |
| In-Plant Systems <sup>@</sup> (3 for RO); (3 for SRO-I); (3 or 2 for SRO-U)  |                                     |  |
|  |                                     |  |
| P2. ANO-2-JPM-NRC-MGSU<br>001 A4.08 RO-3.7/SRO-3.4<br>Start the First MG set   | D/L                                 | 1<br>Reactivity control                |
| P3. ANO-2-JPM-NRC-FPEM1<br>033 A2.03 RO-3.1/SRO-3.5<br>Perform emergency SW make up to SFP   | D/E/R                               | 8<br>Plant service systems             |
| <p><sup>@</sup> All RO and SRO-I control room (and in-plant) systems must be different and serve different safety functions; all 5 SRO-U systems must serve different safety functions; in-plant systems and functions may overlap those tested in the control room.</p> |                                     |  |
| * Type Codes   | Criteria for RO / SRO-I / SRO-U     |  |
| (A)lternate path   | 4-6 / 4-6 / 2-3                     |  |
| (C)ontrol room   |                                     |  |
| (D)irect from bank   | ≤ 9 / ≤ 8 / ≤ 4                     |  |
| (E)mergency or abnormal in-plant   | ≥ 1 / ≥ 1 / ≥ 1                     |  |
| (EN)gineered safety feature  | - / - / ≥ 1 (control room system)   |  |
| (L)ow-Power / Shutdown   | ≥ 1 / ≥ 1 / ≥ 1                     |  |
| (N)ew or (M)odified from bank including 1(A)   | ≥ 2 / ≥ 2 / ≥ 1                     |  |
| (P)revious 2 exams   | ≤ 3 / ≤ 3 / ≤ 2 (randomly selected) |  |
| (R)CA  | ≥ 1 / ≥ 1 / ≥ 1                     |  |
| (S)imulator  |                                     |  |

JOB PERFORMANCE MEASURE

UNIT:  2  REV #:  004  DATE: \_\_\_\_\_

SYSTEM/DUTY AREA:  Emergency Core Cooling System S1

TASK:  Isolate SITs following SIAS Actuation. SIAS has been reset. (Alternate Success Path)

JTA#:  ANO2ROEOPAOPEMER13

KA VALUE RO:  4.0  SRO:  3.8  KA REFERENCE:  006 A4.02

APPROVED FOR ADMINISTRATION TO: RO:  X  SRO:  X

TASK LOCATION: INSIDE CR:  X  OUTSIDE CR: \_\_\_\_\_ BOTH: \_\_\_\_\_

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE: \_\_\_\_\_ SIMULATOR:  Perform  LAB: \_\_\_\_\_

POSITION EVALUATED: RO: \_\_\_\_\_ SRO: \_\_\_\_\_

ACTUAL TESTING ENVIRONMENT: SIMULATOR: \_\_\_\_\_ PLANT SITE: \_\_\_\_\_ LAB: \_\_\_\_\_

TESTING METHOD: SIMULATE: \_\_\_\_\_ PERFORM: \_\_\_\_\_

APPROXIMATE COMPLETION TIME IN MINUTES:  15 Minutes

REFERENCE(S):  2202.010 ; OP 2104.001

EXAMINEE'S NAME: \_\_\_\_\_ Badge #: \_\_\_\_\_

EVALUATOR'S NAME: \_\_\_\_\_

THE EXAMINEE'S PERFORMANCE WAS EVALUATED AGAINST THE STANDARDS CONTAINED IN THIS JPM AND IS DETERMINED TO BE:

SATISFACTORY: \_\_\_\_\_ UNSATISFACTORY: \_\_\_\_\_

PERFORMANCE CHECKLIST COMMENTS:

\_\_\_\_\_  
\_\_\_\_\_

Start Time \_\_\_\_\_ Stop Time \_\_\_\_\_ Total Time \_\_\_\_\_

SIGNED: \_\_\_\_\_ DATE: \_\_\_\_\_

SIGNATURE INDICATES THIS JPM HAS BEEN COMPARED TO ITS APPLICABLE PROCEDURE BY A QUALIFIED INDIVIDUAL (NOT THE EXAMINEE) AND IS CURRENT WITH THAT REVISION.

THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:

**The examiner shall ensure that the examinee has been briefed on NUREG 1021 Appendix E.**

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JPM INITIAL TASK CONDITIONS:

**A LOCA is in progress. SIAS has been reset. EOP 2202.010 Attachment 36 is complete through Step 1.**

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TASK STANDARD:

**SIT A, B, and C outlet valves are closed AND the ability to vent the affected SIT (D) is demonstrated.**

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TASK PERFORMANCE AIDS:

**Examiner Note: Give the Yellow pages to the applicant. When the alternate procedure is required then hand the additional (different color) pages to the applicant.**

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**EOP 2202.010 Attachment 36; OP 2104.001 Section 7.0**

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SIMULATOR SETUP:

**PZR pressure ~ 650psia.**

**SIT outlet valves have had breakers closed.**

**SIAS and CIAS have been RESET.**

**Safety Injection Tank (2T2D) isolation valve (2CV-5063-2) is set to fail intermediate.**

**Set Event trigger 4 to NE4G0632 (this will trigger T4 when 2CV5063-2 is started closed. T4=CV50632  
=.85**

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JOB PERFORMANCE MEASURE

**INITIATING CUE:**

The CRS directs, "Isolate the SIT's using Standard Attachment 36, SIT isolation starting with step 2.

**START Time:** \_\_\_\_\_

| PERFORMANCE CHECKLIST   |                | STANDARDS  |  | (Circle One)  |
|---|----------------|--|--|---------------|
| <b>Examiner Note: Give the Yellow pages to the applicant. When the alternate procedure is required then hand the additional (different color) pages to the applicant.</b> |                |  |  |               |
|   | 1.<br>(Step 2) | Contact NLO to Locally remove danger tags, unlock, and close the following breakers:<br><br>2B51-F2 - 2CV5003-1<br>2B51-H1 - 2CV5023-1<br>2B61-F2 - 2CV5043-2<br>2B61-H1 - 2CV5063-2<br><br><b>Examiner Cue:<br/>When contacted state that the above tags and locks are removed and breakers are closed.</b> | Contacted NLO to Locally remove danger tags, unlock, and close the following breakers:<br><br>2B51-F2 - 2CV5003-1<br>2B51-H1 - 2CV5023-1<br>2B61-F2 - 2CV5043-2<br>2B61-H1 - 2CV5063-2 | N/A SAT UNSAT |
| (C)   | 2.<br>(Step 3) | Close SIT 2T2A Outlet valve (2CV-5003-1).  | On panel 2C17, placed handswitch for 2CV-5003-1 in "CLOSE".<br><br>Observed green light ON; red light OFF above handswitch.  | N/A SAT UNSAT |
| (C)   | 3.<br>(Step 3) | Close SIT 2T2B outlet valve (2CV-5023-1).  | On panel 2C17, placed handswitch for 2CV-5023-1 in "CLOSE".<br><br>Observed green light ON; red light OFF above handswitch.  | N/A SAT UNSAT |
| (C)   | 4.<br>(Step 3) | Close SIT 2T2C outlet valve (2CV-5043-2).  | On panel 2C16, closed 2CV-5043-2.<br><br>Observed green light ON; red light OFF above handswitch.  | N/A SAT UNSAT |

## JOB PERFORMANCE MEASURE

| PERFORMANCE CHECKLIST  |                     |  | STANDARDS   | (Circle One)  |
|--|---------------------|--|---|---------------|
| (C)  | 5.<br>(Step 3)      | <p>Close SIT 2T2D outlet valve (2CV-5063-2).</p> <p><b>Examiner Cue:</b><br/> <b>If requested as NLO report that breaker 2B-61 H1 is in the trip free position.</b><br/> <b>If requested to locally check valve position report that CNTMT is not open for access.</b></p> | <p>On panel 2C16, placed handswitch for 2CV-5063-2 in "CLOSE".</p> <p>Observed green light ON; red light ON above handswitch.</p> <p>Reported to the SM/CRS that SIT 2T2D outlet valve did NOT close.</p> | N/A SAT UNSAT |
| <b><u>EXAMINER'S NOTE:</u></b>   |                     |  |   |               |
| <p>The following step is an Alternate path. Provide the following cue upon receiving the report that 2T2D outlet valve will NOT close:</p> <p>The SM/CRS directs Continue standard attachment 36, SIT isolation and vent 2T-2D from the control room using the normal vent line.</p> |                     |  |   |               |
|  | 6.<br>(Step 4)      | <p>IF ANY SIT can NOT be isolated, THEN vent or drain affected SIT using 2104.001, Safety Injection Tank Operation.</p>  | <p>Transitioned to 2104.001 section 12.</p>   | N/A SAT UNSAT |
|  | 7.<br>(Step 12.1)   | <p>IF 18-Month Remote Position Indication (Supplement 4 of Cold Shutdown Valve Testing, 2305.006) required, THEN perform in conjunction with this activity.</p> <p><b>Examiner Cue: State that the 18 month remote position indication check is not required.</b></p>      | <p>Asked CRS/SM or determined if the 18-Month Remote Position Indication is required.</p>   | N/A SAT UNSAT |
|  | 8.<br>(Step 12.2.1) | <p>IF Containment ventilation available, THEN verify Containment ventilation in service per Containment Atmosphere Control (2104.033).</p> <p><b>Examiner Cue: State that Containment ventilation is not available.</b></p>  | <p>Asked CRS/SM or determined if the 18-Month Remote Position Indication is required.</p>   | N/A SAT UNSAT |

JOB PERFORMANCE MEASURE

| PERFORMANCE CHECKLIST  |   | STANDARDS   | (Circle One)  |
|--|---|---|---------------|
|  | 9.<br>(Step 12.2.2)<br>)<br><br><b>Examiner Cue: State that Equipment Hatch is closed.</b>  | Asked CRS/SM or determined that the Equipment Hatch is closed.  | N/A SAT UNSAT |
|  | 10.<br>(Step 12.2.3)<br>)<br><br><b>Examiner Cue: State that there are no personnel in CNTMT.</b>   | Asked CRS/SM or determined that the personnel are not in CNTMT.   | N/A SAT UNSAT |
| (C)  | 11.<br>(Step 12.2.7)<br>)<br><br>IF venting SIT (2T-2D), THEN open ONE of the following:<br>SIT D Vent (2SV-5066)<br>SIT D Vent Bypass (2SI-50) | Opened SIT D vent 2SV-5066. (critical portion)<br><br>Observed Red light On and Green light OFF above the HS for 2SV-5066.<br><br>Observed 'D' SIT pressure lowering. | N/A SAT UNSAT |
| <u>EXAMINER'S NOTE:</u>  |   |   |               |
| This JPM can be stopped once the vent path is established (2SV-5066 open). |   |   |               |
| END  |   |   |               |

STOP Time: \_\_\_\_\_

**EXAMINER'S COPY****JPM INITIAL TASK CONDITIONS:**

You are responsible for any applicable annunciators during the performance of this task. All annunciators that are not applicable to this task will be performed by another operator.

A LOCA is in progress. SIAS has been reset. EOP 2202.010 Attachment 36 is complete through Step 1.

**INITIATING CUE:**

The CRS directs, "Isolate the SIT's using Standard Attachment 36, SIT isolation starting with step 2.

**EXAMINEE'S COPY****JPM INITIAL TASK CONDITIONS:**

You are responsible for any applicable annunciators during the performance of this task. All annunciators that are not applicable to this task will be performed by another operator.

A LOCA is in progress. SIAS has been reset. EOP 2202.010 Attachment 36 is complete through Step 1.

**INITIATING CUE:**

The CRS directs, "Isolate the SIT's using Standard Attachment 36, SIT isolation starting with step 2.

JOB PERFORMANCE MEASURE

UNIT:  2  REV #:  001  DATE: \_\_\_\_\_

SYSTEM/DUTY AREA:  AC Electrical Distribution S2

TASK:  Transfer Auxiliaries from SU#2 to SU#3 for 2A-1.

JTA#:  ANO2-RO-ELECD-NORM-30

KA VALUE RO:  3.1  SRO:  3.1  KA REFERENCE:  062 A4.07

APPROVED FOR ADMINISTRATION TO: RO:  X  SRO:  X

TASK LOCATION: INSIDE CR:  X  OUTSIDE CR: \_\_\_\_\_ BOTH: \_\_\_\_\_

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE: \_\_\_\_\_ SIMULATOR:  Perform  CLASSROOM: \_\_\_\_\_

POSITION EVALUATED: RO: \_\_\_\_\_ SRO: \_\_\_\_\_

ACTUAL TESTING ENVIRONMENT: SIMULATOR: \_\_\_\_\_ PLANT SITE: \_\_\_\_\_ CLASSROOM: \_\_\_\_\_

TESTING METHOD: SIMULATE: \_\_\_\_\_ PERFORM: \_\_\_\_\_

APPROXIMATE COMPLETION TIME IN MINUTES:  10 Minutes

REFERENCE(S):  OP-2107.001 Electrical System Operations

EXAMINEE'S NAME: \_\_\_\_\_ Badge #: \_\_\_\_\_

EVALUATOR'S NAME: \_\_\_\_\_

THE EXAMINEE'S PERFORMANCE WAS EVALUATED AGAINST THE STANDARDS CONTAINED IN THIS JPM AND IS DETERMINED TO BE:

SATISFACTORY: \_\_\_\_\_ UNSATISFACTORY: \_\_\_\_\_

PERFORMANCE CHECKLIST COMMENTS:

\_\_\_\_\_  
\_\_\_\_\_

Start Time \_\_\_\_\_ Stop Time \_\_\_\_\_ Total Time \_\_\_\_\_

SIGNED: \_\_\_\_\_ DATE: \_\_\_\_\_

SIGNATURE INDICATES THIS JPM HAS BEEN COMPARED TO ITS APPLICABLE PROCEDURE BY A QUALIFIED INDIVIDUAL (NOT THE EXAMINEE) AND IS CURRENT WITH THAT REVISION.



JOB PERFORMANCE MEASURE

**INITIATING CUE:**

The CRS directs, "Transfer Unit Auxiliaries from SU2 to SU3 on 2A-1 using 2107.001 Section 10.0, starting with step 10.3"

START TIME: \_\_\_\_\_

| PERFORMANCE CHECKLIST  |                     | STANDARDS  |   | (Circle One)  |
|--|---------------------|--|---|---------------|
| <b>Examiner Note: Give the Yellow pages to the applicant.</b>  |                     |  |   |               |
| Procedure Note:<br>• The Incoming (Source) and Running (Bus) Voltage Meters have three scales:<br>• BLACK scale is Generator Output Breakers.<br>• RED scale is 6900V buses.<br>BLUE scale is 4160V buses. |                     |  |   |               |
|  | 1.<br>(Step 10.3.1) | Verify Synchroscope operable as follows:<br><br>Select a closed breaker AND insert Synchronize switch.                             | On panel 2C10, inserted synchronize switch into a closed breaker.<br><br>Observed red light ON above handswitch and inserted synchronize switch.  | N/A SAT UNSAT |
|  | 2.<br>(Step 10.3.2) | Place Synchronize switch to ON for selected closed breaker.  | On panel 2C10, placed synchronized switch to on.<br><br>Observed the incoming and running volt meters come on scale.                              | N/A SAT UNSAT |
|  | 3.<br>(Step 10.3.3) | Check Incoming (Source) and Running (Bus) volt meters within 200 volts of each other with Running preferably higher than Incoming. | On panel 2C10, checked incoming and running voltages within 200 volts.  | N/A SAT UNSAT |
|  | 4.<br>(Step 10.3.4) | Place Synchronize switch to OFF AND remove.  | On panel 2C10, placed synchronized switch to off and removed from breaker.<br><br>Observed the incoming and running volt meters go off scale low. | N/A SAT UNSAT |
|  | 5.<br>(Step 10.4.1) | Transfer selected buses from SU2 to SU3 in any order as follows:<br><br>Insert Synchronize switch in selected SU3 Feeder Breaker.  | On panel 2C10, inserted synchronize switch into breaker 2A-113.   | N/A SAT UNSAT |

JOB PERFORMANCE MEASURE

| PERFORMANCE CHECKLIST |                      |  | STANDARDS  | (Circle One)  |
|-----------------------|----------------------|--|--|---------------|
| (C)                   | 6.<br>(Step 10.4.2)  | Place Synchronize switch to ON.  | On panel 2C10, placed synchronized switch to on for breaker 2A-113.<br><br>Observed the incoming and running volt meters come on scale.  | N/A SAT UNSAT |
|                       | 7.<br>(Step 10.4.3)  | Verify Synchroscope between 11 and 1 O'clock position.   | On panel 2C10, Checked Synchroscope between 11 and 1 O'clock position.   | N/A SAT UNSAT |
| (C)                   | 8.<br>(Step 10.4.4)  | Momentarily place SU3 Feeder Breaker to CLOSE.   | On panel 2C10, placed handswitch 152-113CS to the close position and then released the handswitch to the normal after close position.<br><br>Observed Red light on, Green light off and white light momentarily off for breaker 2A-113 | N/A SAT UNSAT |
|                       | 9.<br>(Step 10.4.5)  | Verify SU3 Feeder Breaker closes.  | Checked 2A-113 breaker for SU3 to 2A-1 closed.<br><br>Observed Red light on, Green light off and white light momentarily off for breaker 2A-113  | N/A SAT UNSAT |
|                       | 10.<br>(Step 10.4.6) | Check SU2 Feeder Breaker opens.  | Recognized that breaker 2A-111 for SU#2 to 2A-1 is opened.<br><br>Observed Red light off, Green light on and white light on for breaker 2A-111   | N/A SAT UNSAT |
|                       | 11.<br>(Step 10.4.7) | IF SU2 Feeder Breaker fails to open,<br>THEN perform the following:<br><br>Trip SU3 Feeder Breaker.<br><br><b>Examiner Note: Step is N/A</b> | On panel 2C10, determined that the SU#2 feeder breaker opened.<br><br>Observed Red light off, Green light on and white light on for breaker 2A-111   | N/A SAT UNSAT |
|                       | 12.<br>(Step 10.4.8) | Momentarily place SU#2 Feeder Breaker in OPEN to Green Flag.   | On panel 2C10, placed 2A-111 hand switch to the open position (152-111 CS) and released to normal after trip.  | N/A SAT UNSAT |

**JOB PERFORMANCE MEASURE**

| <b>PERFORMANCE CHECKLIST</b>  |   | <b>STANDARDS</b>  | (Circle One)  |
|---|---|---|---------------|
| 13.<br>(Step<br>10.4.9)   | Place Synchronize switch to OFF and remove. | On panel 2C10, placed synchronized switch to off and removed from breaker 2A-113. | N/A SAT UNSAT |
| Examiner note: When the applicant Notifies Unit 1 of SU2 Feeder breaker switch positions the JPM is complete. |   |   |               |
| END   |   |   |               |

STOP TIME: \_\_\_\_\_

JOB PERFORMANCE MEASURE

**EXAMINER's COPY**

**JPM INITIAL TASK CONDITIONS:**

You are responsible for any applicable annunciators during the performance of this task. All annunciators that are not applicable to this task will be performed by another operator.

SU2 is powering 2A-1 bus due to 2A-113 SU3 feeder breaker maintenance.  
2A-113 SU3 feeder Breaker Maintenance has been completed.  
Steps 10.1 and 10.2 of 2107.001 have been completed.

**INITIATING CUE:**

The CRS directs, "Transfer Unit Auxiliaries from SU2 to SU3 on 2A-1 using 2107.001 Section 10.0, starting with step 10.3"

JOB PERFORMANCE MEASURE

EXAMINEE's COPY

**JPM INITIAL TASK CONDITIONS:**

You are responsible for any applicable annunciators during the performance of this task. All annunciators that are not applicable to this task will be performed by another operator.

SU2 is powering 2A-1 bus due to 2A-113 SU3 feeder breaker maintenance.  
2A-113 SU3 feeder Breaker Maintenance has been completed.  
Steps 10.1 and 10.2 of 2107.001 have been completed.

**INITIATING CUE:**

The CRS directs, "Transfer Unit Auxiliaries from SU2 to SU3 on 2A-1 using 2107.001 Section 10.0, starting with step 10.3"

JOB PERFORMANCE MEASURE

UNIT:  2  REV #:  002  DATE: \_\_\_\_\_

SYSTEM/DUTY AREA:  Steam Dump and Bypass Control System   S3

TASK:  Manually operate SDBCS valve. (Alternate Success Path)

JTA#:  ANO2-RO-SDBCS-OFFNORM-508

KA VALUE RO:  3.1  SRO:  3.3  KA REFERENCE:  041 A4.05

APPROVED FOR ADMINISTRATION TO: RO:  X  SRO:  X

TASK LOCATION: INSIDE CR:  X  OUTSIDE CR: \_\_\_\_\_ BOTH: \_\_\_\_\_

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE: \_\_\_\_\_ SIMULATOR:  Perform  CLASSROOM: \_\_\_\_\_

POSITION EVALUATED: RO: \_\_\_\_\_ SRO: \_\_\_\_\_

ACTUAL TESTING ENVIRONMENT: SIMULATOR: \_\_\_\_\_ PLANT SITE: \_\_\_\_\_ CLASSROOM: \_\_\_\_\_

TESTING METHOD: SIMULATE: \_\_\_\_\_ PERFORM: \_\_\_\_\_

APPROXIMATE COMPLETION TIME IN MINUTES:  15 Minutes

REFERENCE(S):  OP-2105.008 Steam Dump and Bypass control System Operations, OP-2203.012B 2K-02 ACA

EXAMINEE'S NAME: \_\_\_\_\_ Badge #: \_\_\_\_\_

EVALUATOR'S NAME: \_\_\_\_\_

THE EXAMINEE'S PERFORMANCE WAS EVALUATED AGAINST THE STANDARDS CONTAINED IN THIS JPM AND IS DETERMINED TO BE:

SATISFACTORY: \_\_\_\_\_ UNSATISFACTORY: \_\_\_\_\_

PERFORMANCE CHECKLIST COMMENTS:

\_\_\_\_\_  
\_\_\_\_\_

Start Time \_\_\_\_\_ Stop Time \_\_\_\_\_ Total Time \_\_\_\_\_

SIGNED: \_\_\_\_\_ DATE: \_\_\_\_\_

SIGNATURE INDICATES THIS JPM HAS BEEN COMPARED TO ITS APPLICABLE PROCEDURE BY A QUALIFIED INDIVIDUAL (NOT THE EXAMINEE) AND IS CURRENT WITH THAT REVISION.

**JOB PERFORMANCE MEASURE**

THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:

**The examiner shall ensure that the examinee has been briefed on NUREG 1021 Appendix E.**

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JPM INITIAL TASK CONDITIONS:

**Reactor tripped and the input to the SDBCS failed low.**

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TASK STANDARD:

**Steam Generator pressure controlled between 950 psia and 1050 psia.**

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TASK PERFORMANCE AIDS:

**OP 2203.012B ACA for B-14, and OP 2105.008 SDBCS operations.**

**Examiner Note: Give the Yellow pages to the applicant. When the alternate procedure is required then hand the additional (different color) pages to the applicant.**

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SIMULATOR SETUP:

**SDBCS input XMSHDRPRS = 650.**

**Condenser interlock set on trigger 1 value = true, delete in 5 sec.**

**Event trigger 1 set for 'A' S/G pressure (SGPD(2)) < 1050 psia.**

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JOB PERFORMANCE MEASURE

INITIATING CUE:

The CRS directs, "Manually control both S/G pressures between 950 psia and 1050 psia using turbine bypass valve IAW 2105.008 Exhibit 3, SDBCS emergency operations"

START TIME: \_\_\_\_\_

| PERFORMANCE CHECKLIST  |  | STANDARDS  | (Circle One)  |
|--|--|--|---------------|
| <p><b>Examiner Note: Give the Yellow pages to the applicant. When the alternate procedure is required then hand the additional (different color) pages to the applicant.</b></p> |  |  |               |
| 1.<br>(Step 1)   | <p>IF BOTH MSIV's closed, THEN GO TO step 5.0.</p> <p><b>Examiner note: Step 1 is N/A.</b></p>   | <p>On panel 2C16 and 2C17 determined MSIV's 2CV-1010-1 and 2CV-1060-2 open.</p> <p>Observed red light ON above hand switches</p>   | N/A SAT UNSAT |
| 2.<br>(Step 2.1)   | <p>Perform the following to determine availability of SDBCS valves:</p> <p>IF the following conditions satisfied, THEN SDBCS Master controller (2PIC-0300) available:</p> <ul style="list-style-type: none"> <li>• SDBCS controlling S/G pressure at setpoint in automatic</li> <li>• Emergency OFF (2K02-A14) clear</li> <li>• Instrument air available</li> <li>• IF using Turbine Bypass valves, THEN Condenser Interlock (2K02-B14) clear</li> </ul> | <p>On panel 2C02, determined that the SDBCS Master controller 2PIC-0300 is not available by the fact it is not controlling at setpoint.</p> <p>Observed setpoint is ~1040 psig and input is ~ 650 psig with all SDBCS valves closed. Or observed that steam generator pressure is approximately 1100 psia with all SDBCS valves closed with a setpoint of ~1040 psig on 2PIC-0300.</p> | N/A SAT UNSAT |
| 3.<br>(Step 2.2)   | <p>IF the following conditions satisfied, THEN SDBCS Downstream ADV/Turbine Bypass valves available:</p> <ul style="list-style-type: none"> <li>• Instrument air available</li> <li>• Emergency OFF (2K02-A14) clear</li> <li>• Power available to selected controllers / valves</li> <li>• IF using Turbine Bypass valves, THEN Condenser Interlock (2K02-B14) clear</li> </ul>   | <p>On panel 2C-14 or PMS verified ~ 100 psig Instrument air pressure.</p> <p>On 2K02 verified Emergency OFF (2K02-A14) clear. (light out)</p> <p>On panel 2C-02 verified power available for the selected controllers from the following list: 2HIC-0301, 2HIC-0302, 2HIC-0303, 2HIC-0306, 2HIC-0305.</p> <p>On 2K02 verified Condenser Interlock (2K02-B14) clear. (light out)</p>    | N/A SAT UNSAT |

JOB PERFORMANCE MEASURE

| PERFORMANCE CHECKLIST   |                      | STANDARDS  |  | (Circle One)  |
|---|----------------------|--|--|---------------|
| <p><b>Examiner Note:</b></p> <p><b>Step # 3 is not applicable.</b></p>  |                      |  |  |               |
| <p><b>Procedure Note:</b></p> <p>The SDBCS Master controller can not be set less than 650 psi.<br/>Computer points FR1030 and FR1130 can be useful to monitor steam flow.</p> |                      |  |  |               |
| (C)   | 4.<br><br>(Step 4.1) | <p>IF SDBCS Downstream ADV/Turbine Bypass valves operation in manual desired, THEN perform the following:</p> <p>Place selected HIC(s) in MANUAL:</p> <ul style="list-style-type: none"> <li>• 2HIC-0301 Downstream Atmospheric Dump valve</li> <li>• 2HIC-0305 Downstream Atmospheric Dump valve</li> <li>• 2HIC-0302 Turbine Bypass valve</li> <li>• 2HIC-0303 Turbine Bypass valve</li> <li>• 2HIC-0306 Turbine Bypass valve</li> </ul> | <p>On panel 2C02, placed hand indicating controller for any of the following turbine bypass valves in manual.</p> <ul style="list-style-type: none"> <li>• 2HIC-0302 Turbine Bypass valve</li> <li>• 2HIC-0303 Turbine Bypass valve</li> <li>• 2HIC-0306 Turbine Bypass valve</li> </ul> <p>Observed M on selected controllers placed in manual.</p> | N/A SAT UNSAT |
|   | 5.<br><br>(Step 4.2) | <p>Adjust output on selected HIC(s) as desired .</p>   | <p>Adjusted hand indicating controller output to zero for any of the following controllers.</p> <ul style="list-style-type: none"> <li>• 2HIC-0302 Turbine Bypass valve</li> <li>• 2HIC-0303 Turbine Bypass valve</li> <li>• 2HIC-0306 Turbine Bypass valve</li> </ul> <p>Observed zero demand on the controller selected for manual operation.</p>  | N/A SAT UNSAT |

JOB PERFORMANCE MEASURE

| PERFORMANCE CHECKLIST  |                  | STANDARDS   | (Circle One)  |               |
|--|------------------|---|---|---------------|
| (C)  | 6.<br>(Step 4.3) | Place the selected permissive(s) handswitch to MANUAL: <ul style="list-style-type: none"> <li>• 2CV-0301 Downstream Atmospheric Dump valve (2HS-0301)</li> <li>• 2CV-0305 Downstream Atmospheric Dump valve (2HS-0305)</li> <li>• 2CV-0302 Turbine Bypass valve (2HS-0302)</li> <li>• 2CV-0303 Turbine Bypass valve (2HS-0303)</li> <li>• 2CV-0306 Turbine Bypass valve (2HS-0306)</li> </ul> | Placed permissive handswitch for at least one turbine bypass valve(s) to MANUAL that the associated HIC was place in manual in step 4.1. <ul style="list-style-type: none"> <li>• 2CV-0302 Turbine Bypass valve (2HS-0302)</li> <li>• 2CV-0303 Turbine Bypass valve (2HS-0303)</li> <li>• 2CV-0306 Turbine Bypass valve (2HS-0306)</li> </ul> | N/A SAT UNSAT |
| (C)  | 7.<br>(Step 4.4) | * Adjust output on selected HIC as desired.   | Adjusted output on selected controllers to lower steam generator pressure into the directed steam generator pressure band of 950 psig to 1050 psig.<br><br>Observed selected valve(s) open indication of red light and green light on. Also, observed Steam generator pressure lowering.  | N/A SAT UNSAT |
| <b>EXAMINER'S NOTE:</b>  |                  |   |   |               |
| <p>The following is the alternate path portion of this JPM. When S/G pressure reaches 1050 psia an inadvertent Condenser interlock will occur. The following steps are for the Condenser interlock Annunciator Corrective Action</p> |                  |   |   |               |
| <p>Procedure Note:<br/>This interlock blocks opening of Turbine Bypass valves 2CV-0302, 2CV-0303, and 2CV-0306.</p>  |                  |   |   |               |
| (C)  | 8.<br>(Step 2.1) | Verify SDBCS Atmospheric Dumps opening as required: <ul style="list-style-type: none"> <li>• 2CV-0301 Downstream Atmospheric Dump valve</li> <li>• 2CV-0305 Downstream Atmospheric Dump valve</li> </ul> <p><b><u>Examiner CUE:</u></b></p> <p><b>When the applicant is controlling Steam generator pressure between 950 and 1050 psia, THEN end this JPM.</b></p>                            | Used Exhibit 3 of 2105.008 to control S/G pressure and operated selected Atmospheric dump valves.   | N/A SAT UNSAT |

**JOB PERFORMANCE MEASURE**

|                              |                  |              |
|------------------------------|------------------|--------------|
| <b>PERFORMANCE CHECKLIST</b> | <b>STANDARDS</b> | (Circle One) |
| END                          |                  |              |

STOP TIME: \_\_\_\_\_

JOB PERFORMANCE MEASURE

**EXAMINER's COPY**

**JPM INITIAL TASK CONDITIONS:**

You are responsible for any applicable annunciators during the performance of this task. All annunciators that are not applicable to this task will be performed by another operator.

Unit 2 reactor is offline.  
The Steam Dump and Bypass control system steam pressure input has failed low.

**INITIATING CUE:**

The CRS directs, "Manually control both S/G pressures between 950 psia and 1050 psia using turbine bypass valve IAW 2105.008 Exhibit 3, SDBCS emergency operations".

**JOB PERFORMANCE MEASURE**

**EXAMINEE's COPY**

**JPM INITIAL TASK CONDITIONS:**

You are responsible for any applicable annunciators during the performance of this task. All annunciators that are not applicable to this task will be performed by another operator.

Unit 2 reactor is offline.

The Steam Dump and Bypass control system steam pressure input has failed low.

**INITIATING CUE:**

The CRS directs, "Manually control both S/G pressures between 950 psia and 1050 psia using turbine bypass valve IAW 2105.008 Exhibit 3, SDBCS emergency operations".

JOB PERFORMANCE MEASURE

UNIT:  2  REV #:  009  DATE: \_\_\_\_\_

SYSTEM/DUTY AREA:  Component Cooling Water System S4

TASK:  Secure CCW system (Using EOP)

JTA#:  ANO-2-R-OEOPAOP-EMERG-13

KA VALUE RO:  3.3  SRO:  3.1  KA REFERENCE:  008 A4.01

APPROVED FOR ADMINISTRATION TO: RO:  X  SRO:  X

TASK LOCATION: INSIDE CR:  X  OUTSIDE CR: \_\_\_\_\_ BOTH: \_\_\_\_\_

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE: \_\_\_\_\_ SIMULATOR:  Perform  LAB: \_\_\_\_\_

POSITION EVALUATED: RO: \_\_\_\_\_ SRO: \_\_\_\_\_

ACTUAL TESTING ENVIRONMENT: SIMULATOR: \_\_\_\_\_ PLANT SITE: \_\_\_\_\_ LAB: \_\_\_\_\_

TESTING METHOD: SIMULATE: \_\_\_\_\_ PERFORM: \_\_\_\_\_

APPROXIMATE COMPLETION TIME IN MINUTES:  15 Minutes

REFERENCE(S):  2202.010 Standard Attachments

EXAMINEE'S NAME: \_\_\_\_\_ SSN: \_\_\_\_\_

EVALUATOR'S NAME: \_\_\_\_\_

THE EXAMINEE'S PERFORMANCE WAS EVALUATED AGAINST THE STANDARDS CONTAINED IN THIS JPM AND IS DETERMINED TO BE:

SATISFACTORY: \_\_\_\_\_ UNSATISFACTORY: \_\_\_\_\_

PERFORMANCE CHECKLIST COMMENTS:

\_\_\_\_\_  
\_\_\_\_\_

Start Time \_\_\_\_\_ Stop Time \_\_\_\_\_ Total Time \_\_\_\_\_

SIGNED: \_\_\_\_\_ DATE: \_\_\_\_\_

SIGNATURE INDICATES THIS JPM HAS BEEN COMPARED TO ITS APPLICABLE PROCEDURE BY A QUALIFIED INDIVIDUAL (NOT THE EXAMINEE) AND IS CURRENT WITH THAT REVISION.

**JOB PERFORMANCE MEASURE**

**THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:**

**The examiner shall ensure that the examinee has been briefed on NUREG 1021 Appendix E.**

**JPM INITIAL TASK CONDITIONS:** The reactor has tripped due to an Loss of Coolant Accident. SIAS has actuated and the Service Water system (suction and discharge) is aligned to the Emergency Cooling Pond. - Actions of OP 2202.003 are complete to Contingency Action step 9.C.4.

**TASK STANDARD:** CCW loads have been secured and CCW pumps have been stopped.

**TASK PERFORMANCE AIDS:** EOP 2202.010 Standard Attachment 6

**Examiner Note:** Give the Yellow pages to the applicant.

**SIMULATOR SETUP:** SIAS ACTUATED. Align service water suction and discharge to the ECP. (note: The snap needs to be stabilized soon after the trip or RCP high temperature alarms will actuate before RCP's can be secured.)

**JOB PERFORMANCE MEASURE**

**INITIATING CUE:**

The CRS directs: "Secure the CCW system using OP 2202.010 Attachment 6 Step 1."

Start Time: \_\_\_\_\_

| PERFORMANCE CHECKLIST   |                  | STANDARDS                          | (Circle One)  |
|---|------------------|------------------------------------|---------------|
| <b>Examiner Note: Give the Yellow pages to the applicant.</b> |                  |                                    |               |
| (C)   | 1.<br>(Step 1.A) | Secure all RCP's.                  | N/A SAT UNSAT |
|   | 2.<br>(Step 1.B) | Place both spray valves in MANUAL. | N/A SAT UNSAT |
|   | 3.<br>(Step 1.B) | Verify both spray valves closed.   | N/A SAT UNSAT |

On panel 2C04, placed the following hand switches in PULL TO LOCK or STOP:

- 2HS-4620 (2P32A),
- 2HS-4621 (2P32B),
- 2HS-4720 (2P32C)
- 2HS-4721 (2P32D)

Observed green lights ON; red lights OFF above RCP hand switches.

On panel 2C04, placed spray valve man/auto select hand switches 2HS-4651B ("A" Spray Line) and 2HS-4652B ("B" Spray Line) in MANUAL.

On panel 2C04, observed green light ON above spray valve hand switches for 2CV-4651 and 2CV-4652.

OR

Held spray valve hand switches for 2CV-4651 and/or 2CV-4652 in CLOSE until the green light was ON above associated hand switches.

**JOB PERFORMANCE MEASURE**

| PERFORMANCE CHECKLIST   |                  |  | STANDARDS   | (Circle One)  |
|---|------------------|--|---|---------------|
| (C)   | 4.<br>(Step 1.C) | Verify ALL RCP Controlled Bleedoff valves closed.  | <p>On panel 2C17 verified Controlled Bleedoff isolation (2CV-4846-1) Closed.</p> <p>On panel 2C16 verified Controlled Bleedoff isolation (2CV-4847-2) Closed.</p> <p>On panel 2C09 closed Controlled Bleedoff relief isolation (2CV-4856). <b>(Only critical portion of this step.)</b></p> <p>Observed green light ON; red light OFF above all of the above controlled bleedoff isolation valve hand switches.</p>           | N/A SAT UNSAT |
| <p>Procedure note:</p> <p>The remaining steps of this attachment should have a lower priority than implementation of the controlling procedure.</p> |                  |  |   |               |
|   | 5.<br>(Step 1.D) | <p>Verify at least ONE Letdown Isolation valve closed:</p> <p>2CV-4820-2<br/>2CV-4821-1<br/>2CV-4823-2 (least preferred)</p>   | <p>On panel 2C09, verified Letdown Isolation (2CV-4820-2) Closed.</p> <p style="text-align: center;"><u>OR</u></p> <p>On panel 2C09, verified Regen HX Inlet (2CV-4821-1) Closed.</p> <p style="text-align: center;"><u>OR</u></p> <p>On panel 2C09, verified Regen HX Outlet (2CV-4823-2) closed.</p> <p>Observed green light ON; red light OFF above at least one of the above letdown isolation valve's hand switches.</p> | N/A SAT UNSAT |
|   | 6.<br>(Step 1.E) | <p>Verify EFW suction aligned to a condensate storage tank.</p> <p><b>Examiner Cue: If asked, report as a NLO that EFW manual valves are aligned to the 'Q' CST.</b></p> | <p>On panel 2C17 observed green light OFF; red light ON above handswitch for 2CV-0789</p> <p>On panel 2C16 observed green light OFF; red light ON above handswitch for 2CV-0795.</p>  | N/A SAT UNSAT |

**JOB PERFORMANCE MEASURE**

| PERFORMANCE CHECKLIST |   | STANDARDS  | (Circle One)  |
|-----------------------|---|--|---------------|
| 7.<br>(Step 1.F)      | <p>Locally close "SU/BD DI TO EFW PUMP SUCT" valve (2EFW-0706).</p> <p><b>Examiner Cue: If requested report that, 2EFW-0706 has been locally verified locked closed.</b></p>  | <p>Either directed AO to verify 2EFW-0706 closed or verified 2EFW-0706 closed on 2C-33.</p> <p>On panel 2C33, observed green light ON; red light OFF for SU/BD DI Effluent to EFW 2EFW-0706.</p> | N/A SAT UNSAT |
| 8.<br>(Step 1.G)      | <p>Verify ALL Condensate Pump hand switches in PTL.</p> <p><b>Examiner Cue: Due to the location of the other JPM if the applicant attempts to check the condensate pumps, inform them that all condensate pumps are in PTL.</b></p>   | <p>From the initial Cue determined that all Condensate pump HS are in PTL.</p>   | N/A SAT UNSAT |
| 9.<br>(Step 1.H)      | <p>Locally secure BOTH Waste Gas compressors by placing the following hand switches in OFF:</p> <ul style="list-style-type: none"> <li>• "2C75A CONTROL SWITCH" (2HS-2402A)</li> <li>• "2C75B CONTROL SWITCH" (2HS-2402B)</li> </ul> <p><b>Examiner Cue: Report that, 2C75A and 2C75B Waste Gas compressors have been verified secured.</b></p> | <p>Directed the WCO to secure both waste gas compressors by placing hand switches 2HS-2402A and 2HS-2402B in OFF on panels 2C194A/B.</p>   | N/A SAT UNSAT |

**JOB PERFORMANCE MEASURE**

| PERFORMANCE CHECKLIST   |  | STANDARDS  | (Circle One)  |
|---|--|--|---------------|
|   | 10.<br>(Step 1.I)<br><br>Notify Chemistry to secure ALL unnecessary sample flows to the following sample panels: <ul style="list-style-type: none"> <li>• 2C116 Sample System Control panel</li> <li>• 2C337 SG Secondary Sample panel</li> <li>• 2C145-I Secondary Sample panel</li> <li>• 2C145-II Secondary Sample panel</li> </ul> <p><b>Examiner Cue: Chemistry reports sampling is secured to the following panels:</b><br/>                     2C116<br/>                     2C337<br/>                     2C145-I<br/>                     2C145-II</p> | Notified chemistry to secure all unnecessary sample flows to the following panels: <ul style="list-style-type: none"> <li>• 2C116 Sample System Control Panel.</li> <li>• 2C337 SG Secondary Sample Panel.</li> <li>• 2C145-I Secondary Sample Panel.</li> <li>• 2C145-II Secondary Sample Panel.</li> </ul> | N/A SAT UNSAT |
|   | 11.<br>(Step 1.J.1)<br><br>Verify closed ALL RCP CCW Isolation valves: <ul style="list-style-type: none"> <li>• 2CV-5255-1</li> <li>• 2CV-5254-2</li> <li>• 2CV-5236-1</li> </ul>  | On Panel 2C17/2C16 closed the following valves by placing the hand switches to close: <ul style="list-style-type: none"> <li>• 2CV-5255-1 (Throttle valve HS must be maintained)</li> <li>• 2CV-5236-1</li> <li>• 2CV-5254-2</li> </ul> Observed the Red light OFF and Green light ON.                       | N/A SAT UNSAT |
| (C)   | 12.<br>(Step 1.J.2)<br><br>Place all CCW pump hand switches in PULL TO LOCK.   | Placed the following hand switches in PULL TO LOCK on panel 2C14: <ul style="list-style-type: none"> <li>• 2HS-5225 (2P33A)</li> <li>• 2HS-5228 (2P33B)</li> <li>• 2HS-5234 (2P33C)</li> </ul> Observed green lights ON and red lights OFF above hand switches.  | N/A SAT UNSAT |
| <p><b>Examiner note: Due to the location of the other JPM, this JPM should be stopped when all CCW pumps are placed in PTL.</b></p> |  |  |               |
| <p><b>END</b></p>   |  |  |               |

Stop Time: \_\_\_\_\_

**JOB PERFORMANCE MEASURE****EXAMINER'S COPY****JPM INITIAL TASK CONDITIONS**

You are responsible for any applicable annunciators during the performance of this task. All annunciators that are not applicable to this task will be performed by another operator.

The reactor has tripped due to a Loss of Coolant Accident.  
SIAS has actuated and the Service Water system (suction and discharge) is aligned to the Emergency Cooling Pond due to Lake Dardanelle being unavailable  
Actions of OP 2202.003 are complete to Contingency Action step 9.C.4  
All condensate pumps are in PTL.

**INITIATING CUE:**

The CRS directs: "Secure the CCW system using OP 2202.010 Attachment 6 Step 1."

**JOB PERFORMANCE MEASURE****EXAMINEE'S COPY****JPM INITIAL TASK CONDITIONS**

You are responsible for any applicable annunciators during the performance of this task. All annunciators that are not applicable to this task will be performed by another operator.

The reactor has tripped due to a Loss of Coolant Accident.  
SIAS has actuated and the Service Water system (suction and discharge) is aligned to the Emergency Cooling Pond due to Lake Dardanelle being unavailable  
Actions of OP 2202.003 are complete to Contingency Action step 9.C.4  
All condensate pumps are in PTL.

**INITIATING CUE:**

The CRS directs: "Secure the CCW system using OP 2202.010 Attachment 6 Step 1."

JOB PERFORMANCE MEASURE

UNIT:  2  REV #:  001  DATE: \_\_\_\_\_

SYSTEM/DUTY AREA:  Containment S5

TASK:  Drain the Containment Sump. (Alternate Success Path)

JTA#:  ANO-2-WCO-LRWBMS-NORM-7

KA VALUE RO:  3.9  SRO:  4.2  KA REFERENCE:  103 A3.01

APPROVED FOR ADMINISTRATION TO: RO:  X  SRO:  X

TASK LOCATION: INSIDE CR:  X  OUTSIDE CR: \_\_\_\_\_ BOTH: \_\_\_\_\_

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE: \_\_\_\_\_ SIMULATOR:  Perform  CLASSROOM: \_\_\_\_\_

POSITION EVALUATED: RO: \_\_\_\_\_ SRO: \_\_\_\_\_

ACTUAL TESTING ENVIRONMENT: SIMULATOR: \_\_\_\_\_ PLANT SITE: \_\_\_\_\_ CLASSROOM: \_\_\_\_\_

TESTING METHOD: SIMULATE: \_\_\_\_\_ PERFORM: \_\_\_\_\_

APPROXIMATE COMPLETION TIME IN MINUTES:  10 Minutes

REFERENCE(S):  OP-2104.014 LRW/BMS operations

EXAMINEE'S NAME: \_\_\_\_\_ Badge #: \_\_\_\_\_

EVALUATOR'S NAME: \_\_\_\_\_

THE EXAMINEE'S PERFORMANCE WAS EVALUATED AGAINST THE STANDARDS CONTAINED IN THIS JPM AND IS DETERMINED TO BE:

SATISFACTORY: \_\_\_\_\_ UNSATISFACTORY: \_\_\_\_\_

PERFORMANCE CHECKLIST COMMENTS:

\_\_\_\_\_  
\_\_\_\_\_

Start Time \_\_\_\_\_ Stop Time \_\_\_\_\_ Total Time \_\_\_\_\_

SIGNED: \_\_\_\_\_ DATE: \_\_\_\_\_

SIGNATURE INDICATES THIS JPM HAS BEEN COMPARED TO ITS APPLICABLE PROCEDURE BY A QUALIFIED INDIVIDUAL (NOT THE EXAMINEE) AND IS CURRENT WITH THAT REVISION.

**JOB PERFORMANCE MEASURE**

THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:

**The examiner shall ensure that the examinee has been briefed on NUREG 1021 Appendix E.**

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JPM INITIAL TASK CONDITIONS:

**Containment Sump level ~76%**

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TASK STANDARD:

**2CV-2060-1 closed and Aux building sump level did not trend  $\geq 100\%$ .**

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TASK PERFORMANCE AIDS:

**OP 2104.014 Section 20**

**Examiner Note: Give the Yellow pages to the applicant.**

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SIMULATOR SETUP:

**Any mode, Containment Sump level ~76%**

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**CV20612 value = 1, ramp = 8 sec, set on a Conditional trigger set for rw\_2061o.**

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**Using the monitor function the containment sump level can be adjusted using the ctmwtr name and setting the value to 25,000.**

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JOB PERFORMANCE MEASURE

INITIATING CUE:

The CRS directs, "Drain the containment sump to 40% using 2104.014 LRW/BMS operations starting with step 20.1.3"

START TIME: \_\_\_\_\_

| PERFORMANCE CHECKLIST  |                                    | STANDARDS  |   | (Circle One)  |
|--|------------------------------------|--|---|---------------|
| <b>Examiner Note: Give the Yellow pages to the applicant.</b>  |                                    |  |   |               |
| <p style="text-align: center;">Procedure Note:</p> <ul style="list-style-type: none"> <li>Containment sump level must be &gt; 71% prior to closing the Inside Sump Isolations during Plant Cooldown (2102.010).</li> <li>If oil or foreign debris is suspected to be in the sump, then sump level should be maintained &gt; 71%. CR-ANO-1-2005-01994</li> <li>2102.002, Plant Heatup requires &gt; 35% in sump prior to heatup from Mode 5.</li> <li>RADS can be used to monitor dose rate changes and formation of hot spots. (CR-ANO-2-2011-1976)</li> </ul> |                                    |  |   |               |
| <p style="text-align: center;">Procedure Caution:</p> <p>Containment Sump drainage flow rate is greater than both Aux Building Sump pumps (2P-51A and 2P-51B) flow capacity.</p>   |                                    |  |   |               |
| <p style="text-align: center;">Procedure Note:</p> <p style="text-align: center;">Draining Containment Sump will cause rate of change hi alarm (2K01-H9).</p>  |                                    |  |   |               |
| (C)  | 1.<br><small>(Step 20.1.3)</small> | Open the following valves to drain CNTMT sump:<br>Containment Sump Isolation 2CV-2060-1 (2HS-2060-1)<br>Containment Sump Isolation 2CV-2061-2 (2HS-2061-2)   | On panel 2C17 placed CMNT sump isolation valve handswitch 2HS-2060-1 to open.<br><br>On panel 2C16 placed CMNT sump isolation valve handswitch 2HS-2061-2 to open.<br><br>Observed red lights ON above handswitches | N/A SAT UNSAT |
|  | 2.<br><small>(Step 20.1.4)</small> | Using level indication or corresponding computer points, monitor the following to prevent overflow:<br>Aux Building sump (2LIS-2000 or 2LIS-2000B)<br>In service Waste tank:<br>- 2T-20A (2LIS-2010)<br>- 2T-20B (2LIS-2012) | On panel 2C14, monitored Aux Building sump level (2LIS-2000 or 2LIS-2000B), and 2T-20A (2LIS-2010) waste tank.<br><br>OR<br>Monitor Aux Building Sump level and 2T-20A waste tank level using PMS computer          | N/A SAT UNSAT |

JOB PERFORMANCE MEASURE

| PERFORMANCE CHECKLIST   |                     |  | STANDARDS   | (Circle One)  |
|---|---------------------|--|---|---------------|
| (C)   | 3.<br>(Step 20.1.5) | <p>Cycle 2CV-2061-2 (2HS-2061-2) as necessary to prevent overflowing Aux Building sump.</p> <p><b>Examiner Cue: If candidate reports to the CRS 2CV-2061-2 has failed open, then instruct candidate to take appropriate action.</b></p>  | <p>On panel 2C16 placed CMNT sump isolation valve handswitch 2HS-2061-2 to close. And Observed did not close.</p> <p>Critical to maintain Aux building sump level &lt;100%</p>  | N/A SAT UNSAT |
| <p><b>EXAMINER'S NOTE:</b></p> <p>The following is the alternate path portion of this JPM</p> |                     |  |   |               |
| (C)   | 4.<br>(Step 20.1.6) | <p>WHEN draining complete, THEN close the following valves:</p> <p>2CV-2060-1 (2HS-2060-1)</p> <p><b>Examiner Cue: If candidate reports to the CRS Tech entry is required due 2CV-2061-2 not closing acknowledge and report the CRS has entered the appropriate Tech Spec.</b></p> | <p>On panel 2C17 placed CMNT sump isolation valve handswitch 2HS-2060-1 to closed.(Critical)</p> <p>Observed 2CV-2060-1 closed by the green light on and red light off. (Not Critical)</p> <p>Maintained Aux Building sump level &lt;100%. (Critical)</p> | N/A SAT UNSAT |
| END   |                     |  |   |               |

STOP TIME: \_\_\_\_\_

**JOB PERFORMANCE MEASURE**

**EXAMINER's COPY**

**JPM INITIAL TASK CONDITIONS:**

You are responsible for any applicable annunciators during the performance of this task. All annunciators that are not applicable to this task will be performed by another operator.

Containment Sump level is ~76%  
Steps 20.1.1 and 20.1.2 of 2104.014 LRW/BMS operations are complete

**INITIATING CUE:**

The CRS directs, "Drain the containment sump to 40% using 2104.014 LRW/BMS operations starting with step 20.1.3".

JOB PERFORMANCE MEASURE

EXAMINEE'S COPY

**JPM INITIAL TASK CONDITIONS:**

You are responsible for any applicable annunciators during the performance of this task. All annunciators that are not applicable to this task will be performed by another operator.

Containment Sump level is ~76%  
Steps 20.1.1 and 20.1.2 of 2104.014 LRW/BMS operations are complete

**INITIATING CUE:**

The CRS directs, "Drain the containment sump to 40% using 2104.014 LRW/BMS operations starting with step 20.1.3".

JOB PERFORMANCE MEASURE

UNIT:  2  REV #:  13  DATE: \_\_\_\_\_

SYSTEM/DUTY AREA:  Control Element Drive Mechanism Control System S6

TASK:  Perform control element assembly exercise.

TASK#  ANO2-RO-CEDM-SURV-13   
:

KA VALUE RO:  4.0  SRO:  3.7  KA REFERENCE:  001 A4.03

APPROVED FOR ADMINISTRATION TO: RO:  X  SRO:  X

TASK LOCATION: INSIDE CR:  X  OUTSIDE CR: \_\_\_\_\_ BOTH: \_\_\_\_\_

**SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):**

PLANT SITE: \_\_\_\_\_ SIMULATOR:  Perform  LAB: \_\_\_\_\_

POSITION EVALUATED: RO: \_\_\_\_\_ SRO: \_\_\_\_\_

ACTUAL TESTING ENVIRONMENT: SIMULATOR: \_\_\_\_\_ PLANT SITE: \_\_\_\_\_ LAB: \_\_\_\_\_

TESTING METHOD: SIMULATE: \_\_\_\_\_ PERFORM: \_\_\_\_\_

APPROXIMATE COMPLETION TIME IN MINUTES:  15 Minutes

REFERENCE(S):  OP 2105.009 CEDM Control System Operations

EXAMINEE'S NAME: \_\_\_\_\_ Badge #: \_\_\_\_\_

EVALUATOR'S NAME: \_\_\_\_\_

**THE EXAMINEE'S PERFORMANCE WAS EVALUATED AGAINST THE STANDARDS CONTAINED IN THIS JPM AND IS DETERMINED TO BE:**

SATISFACTORY: \_\_\_\_\_ UNSATISFACTORY: \_\_\_\_\_

**PERFORMANCE CHECKLIST COMMENTS:**

\_\_\_\_\_  
\_\_\_\_\_

Start Time \_\_\_\_\_ Stop Time \_\_\_\_\_ Total Time \_\_\_\_\_

SIGNED: \_\_\_\_\_ DATE: \_\_\_\_\_

**SIGNATURE INDICATES THIS JPM HAS BEEN COMPARED TO ITS APPLICABLE PROCEDURE BY A QUALIFIED INDIVIDUAL (NOT THE EXAMINEE) AND IS CURRENT WITH THAT REVISION.**



**JOB PERFORMANCE MEASURE**

**INITIATING CUE:**

The CRS directs, "Complete the CEA Exercise Test for CEA #46 using OP 2105.009 Supplement 2, beginning Step 3.2.5."

Start Time: \_\_\_\_\_

| PERFORMANCE CHECKLIST   |                      | STANDARDS   | (Circle One)  |
|---|----------------------|---|---------------|
| <b>Examiner Note: Give the Yellow pages to the applicant.</b> |                      |   |               |
|   | 1.<br>(Step 3.2.5.A) | IF CEA movement delayed for extended period, THEN verify Mode Select switch in OFF.<br><br><b>Examiner Note:<br/>This step is a continuous action that must be completed while moving CEAs</b>  | N/A SAT UNSAT |
| (C)   | 2.<br>(Step 3.2.5.B) | Using operable CEA Position indicators, Verify CEA #46 position within 7 inches of CEA's 1, 47, 48 and 49 throughout exercise.<br><br><b>Examiner Note:<br/>This step is a continuous action that must be completed while moving CEAs</b> | N/A SAT UNSAT |
|   | 3.<br>(Step 3.2.5.C) | On all available CEAC Operator Module digital displays, Select position indication for CEA # 46.  | N/A SAT UNSAT |
| (C)   | 4.<br>(Step 3.2.5.D) | Verify Group Select switch selected to group containing individual CEA  | N/A SAT UNSAT |
| (C)   | 5.<br>(Step 3.2.5.E) | Place the individual CEA selection switches to CEA #46.   | N/A SAT UNSAT |
|   |                      | On panel 2C03, CEA #46 displayed on all available CEAC module displays by one of the following methods:<br>- Standard OM,<br>- CEA group plot (Group 6 selected)<br>- CEA values Page 2<br>- CEA subgroup plot (Group 6 selected)         |               |
|   |                      | On panel 2C03, verified group 6 selected.   |               |
|   |                      | On panel 2C03, selected CEA #46.<br><br>Observed the TENS in "4" and the UNITS in "6".<br><br>OR<br><br>Observed CEA #46 individual light ON.   |               |

**JOB PERFORMANCE MEASURE**

| PERFORMANCE CHECKLIST   |                          |  | STANDARDS   | (Circle One)  |
|---|--------------------------|--|---|---------------|
| (C)   | 6.<br>(Step<br>3.2.5.F)  | Place the mode select switch to MANUAL INDIVIDUAL.   | On panel 2C03, placed mode select switch to MI.<br><br>Observed MI (MANUAL INDIVIDUAL) light ON.  | N/A SAT UNSAT |
| (C)   | 7.<br>(Step<br>3.2.5.G)  | Verify CEA #46 at upper electrical limit (UEL).  | On insert 2JC-9058, moved CEA 46 to UEL by going to WITHDRAW on CEA insert until #46 upper electrical limit (UEL) red light on.<br><br>Observed UEL red light ON. | N/A SAT UNSAT |
| <p>Procedure Note:</p> <ul style="list-style-type: none"> <li>CEA insertion is verified to be &gt; 5" by observation of RSPTs. Observing 5.25" change in pulse counter position does NOT mean CEA has moved &gt; 5".</li> <li>If all CEAs in the subgroup of CEA being inserted are above upper alarm deadband of 140.83 inches, the CEAC 1 or 2 CEA Deviation annunciators (2K04 J-5/2K04 J-6) will NOT actuate</li> <li>Use of CEAC #1 and CEAC #2 standard OM Module to monitor raw input signal is recommended to ensure CEA movement of 5 inches. CEAC group display uses process CEA positions that are rounded off to nearest inch.</li> <li>Due to scheduling or component malfunction it is acceptable for CEAs to be inserted to other than Power Operations (2102.004) Attachment D Programmed Insertion Limit.</li> </ul> |                          |  |   |               |
| (C)   | 8.<br>(Step<br>3.2.5.H)  | Insert CEA #46 seven steps (>5").  | Inserted CEA seven steps (>5").<br><br>Observed insertion of 5.0 inches or greater on CEAC's #1 and #2 displays.  | N/A SAT UNSAT |
| (C)   | 9.<br>(Step<br>3.2.5.I)  | Return CEA to UEL.   | CEA #46 withdrawn to UEL.   | N/A SAT UNSAT |
|   | 10.<br>(Step<br>3.2.5.J) | Verify CEA returned to position required by Power Operation (2102.004), Programmed CEA Insertion to Minimize CEA Finger Wear (ATTACHMENT D). | Used Power Operation (2102.004) attachment D to position CEA to minimize Finger wear.   | N/A SAT UNSAT |
| <p>Examiner note:</p> <p>The following steps are from Power Operation (2102.004) attachment D.</p>  |                          |  |   |               |
|   | 11.<br>(Step<br>1.0)     | IF a Reactivity Management Brief has NOT been conducted, THEN perform a Reactivity Management Brief per COPD-030 with an SRO.                | Determines that a reactivity brief has been conducted per COPD-30   | N/A SAT UNSAT |

**JOB PERFORMANCE MEASURE**

| PERFORMANCE CHECKLIST   |   | STANDARDS   | (Circle One)                     |       |                     |  |               |
|---|---|---|----------------------------------|-------|---------------------|--|---------------|
| 12.<br>(Step 2.0)   | CEAs are positioned at or just below Upper Electrical Limit (UEL) using the following table as a guide.<br><table border="1" style="margin-left: 20px;"> <tr> <td>CYCLE BURNUP (EFPD)</td> <td>POSITION OF FULLY WITHDRAWN CEAs</td> </tr> <tr> <td>&gt; 250</td> <td>UEL MINUS TWO STEPS</td> </tr> </table> | CYCLE BURNUP (EFPD)   | POSITION OF FULLY WITHDRAWN CEAs | > 250 | UEL MINUS TWO STEPS | Determine CEAs should be at UEL minus Two steps. | N/A SAT UNSAT |
| CYCLE BURNUP (EFPD)   | POSITION OF FULLY WITHDRAWN CEAs  |   |                                  |       |                     |  |               |
| > 250   | UEL MINUS TWO STEPS   |   |                                  |       |                     |  |               |
| 13.<br>(Step 3.1)   | Withdraw CEA to its UEL light in Manual Individual (MI) control using CEDM Control System Operation (2105.009).   | Verify CEA #46 is withdrawn to the UEL.   | N/A SAT UNSAT                    |       |                     |  |               |
| 14.<br>(Step 3.2)   | With CEA positioned at UEL, VERIFY Pulse Counter reset to 150 using Plant Computer Operations (1105.010).   | Verified PMS computer is indicating 150 inches withdrawn for CEA #46  | N/A SAT UNSAT                    |       |                     |  |               |
| (C) 15.<br>(Step 3.3)   | Using Pulse Counter indication, insert CEA to comply with Table 1 above using CEDM Control System Operation (2105.009).   | CEA #46 inserted to programmed insertion limit (UEL - 2 steps).<br><br>Observed CEA #46 at 148.5" on Pulse counter (149" on CEAC's) | N/A SAT UNSAT                    |       |                     |  |               |
| 16.<br>(Step 3.2.5.K)   | Record results.   | Using OP 2105.009 Supplement A Table 1, recorded the results of CEA #46 exercise.   | N/A SAT UNSAT                    |       |                     |  |               |
| <b>Examiner note:</b>   |   |   |                                  |       |                     |  |               |
| <b>The CEDMCS control may be left in any mode of operation.</b> |   |   |                                  |       |                     |  |               |
| 17.<br>(Step 3.2.5.L)   | WHEN all required CEA movements complete, THEN verify Mode Select switch in OFF.  | On insert 2JC-9058, selected off mode of operation.   | N/A SAT UNSAT                    |       |                     |  |               |
| END   |   |   |                                  |       |                     |  |               |

Stop Time: \_\_\_\_\_

JOB PERFORMANCE MEASURE

**EXAMINER'S COPY**

**JPM INITIAL TASK CONDITIONS:**

You are responsible for any applicable annunciators during the performance of this task. All annunciators that are not applicable to this task will be performed by another operator.

- 260 EFPD.
- OP 2105.009 Supplement 2, "CEA Exercise Test" is completed successfully through step 3.2.5.K for all CEA's except CEA #46.
- No T-alt installed on either RSPT.
- Voltage Traces are not required.
- A reactivity brief is has been conducted per COPD-30 for this evolution.

**INITIATING CUE:**

The CRS directs, "Complete the CEA Exercise Test for CEA # 46 using OP 2105.009 Supplement 2, beginning with Step 3.2.5."

JOB PERFORMANCE MEASURE

**EXAMINEE'S COPY**

**JPM INITIAL TASK CONDITIONS:**

You are responsible for any applicable annunciators during the performance of this task. All annunciators that are not applicable to this task will be performed by another operator.

- 260 EFPD.
- OP 2105.009 Supplement 2, "CEA Exercise Test" is completed successfully through step 3.2.5.K for all CEA's except CEA #46.
- No T-alt installed on either RSPT.
- Voltage Traces are not required.
- A reactivity brief is has been conducted per COPD-30 for this evolution.

**INITIATING CUE:**

The CRS directs, "Complete the CEA Exercise Test for CEA # 46 using OP 2105.009 Supplement 2, beginning with Step 3.2.5."

JOB PERFORMANCE MEASURE

UNIT:   2                        REV #:   013                        DATE: \_\_\_\_\_

SYSTEM/DUTY AREA:   CPC/CEAC System          S7  

TASK:   Place #1 CEAC to INOP on "B" CPC  

JTA#:   ANO2-RO-CPC-NORM-7  

KA VALUE    RO:   3.3      SRO:   3.4      KA REFERENCE:   012 A4.02  

APPROVED FOR ADMINISTRATION TO:    RO:   X      SRO:   X  

TASK LOCATION:            INSIDE CR:   X      OUTSIDE CR: \_\_\_\_\_    BOTH: \_\_\_\_\_

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE: \_\_\_\_\_    SIMULATOR:   Perform      CLASSROOM: \_\_\_\_\_

POSITION EVALUATED:    RO: \_\_\_\_\_    SRO: \_\_\_\_\_

ACTUAL TESTING ENVIRONMENT:    SIMULATOR: \_\_\_\_\_    PLANT SITE: \_\_\_\_\_    CLASSROOM: \_\_\_\_\_

TESTING METHOD:    SIMULATE: \_\_\_\_\_    PERFORM: \_\_\_\_\_

APPROXIMATE COMPLETION TIME IN MINUTES:   15 Minutes  

REFERENCE(S):   OP-2105.001 CPC/CEAC Operations  

EXAMINEE'S NAME: \_\_\_\_\_    Badge #: \_\_\_\_\_

EVALUATOR'S NAME: \_\_\_\_\_

THE EXAMINEE'S PERFORMANCE WAS EVALUATED AGAINST THE STANDARDS CONTAINED IN THIS JPM AND IS DETERMINED TO BE:

SATISFACTORY: \_\_\_\_\_    UNSATISFACTORY: \_\_\_\_\_

PERFORMANCE CHECKLIST COMMENTS:

\_\_\_\_\_  
\_\_\_\_\_

Start Time                      Stop Time                      Total Time  
\_\_\_\_\_                      \_\_\_\_\_                      \_\_\_\_\_

SIGNED: \_\_\_\_\_    DATE: \_\_\_\_\_

SIGNATURE INDICATES THIS JPM HAS BEEN COMPARED TO ITS APPLICABLE PROCEDURE BY A QUALIFIED INDIVIDUAL (NOT THE EXAMINEE) AND IS CURRENT WITH THAT REVISION.



**JOB PERFORMANCE MEASURE**

**INITIATING CUE:**

The SM/CRS directs, "Set CEAC #1 INOP Flag in CPC Channel B using OP 2105.001 Section 17.0."

Start Time: \_\_\_\_\_

| PERFORMANCE CHECKLIST  |   | STANDARDS   |               | (Circle One) |
|--|---|---|---------------|--------------|
| <b>Examiner Note: Give the Yellow pages to the applicant.</b>  |   |   |               |              |
| NOTE: Give OP2105.001 form 2105.001A to examinee, if not done previously. Do not use Simulator CPC books.  |   |   |               |              |
| Procedure Note:  |   |   |               |              |
| <ul style="list-style-type: none"> <li>Ops Module screens are software limited in the size of the fields used to display Addressable Constant values. Values may be truncated or rounded to fit the size of the display fields. The truncation or rounding may differ between screens showing the same constants or even between channels containing the same constant value. A plant computer CPC Report may be required to verify Addressable Constants. (CR-ANO-2-2007-1017)</li> <li>For multiple CPC addressable constant changes, steps are designated as Informational level of use after the initial changes have been performed and are exempt from in hand procedure use per Procedure Adherence and Level of Use EN-AD-102.</li> <li>The CPC Addressable Constant Change Log has an EXCEL spreadsheet established for each CPC. It can be located at <a href="#">\\ANONC\OPS2\EXCELFIL\CPC Addressable Constants.xls</a>.</li> <li>The form printed out after changes are made is the OFFICIAL COPY and is placed in binder after reviews are made.</li> <li>If the EXCEL spreadsheet and the OFFICIAL copy do not match, verify EXCEL data is updated with the current CPC constants.</li> </ul> |   |   |               |              |
| 1.<br><br>Step<br>(17.1)   | Obtain SM permission.<br><br><b>EVALUATOR CUE:<br/>SM permission is given to set CEAC #1 INOP flag.</b>     | Obtained SM permission to change an addressable constant. | N/A SAT UNSAT |              |
| <b>Examiner note:</b>  |   |   |               |              |
| <b>The following step is not a procedure step but the Function Enable is required to complete this task and may be obtained at any time.</b>   |   |   |               |              |
| 2.   | Obtain the "Function Enable" key.<br><br><b>EVALUATOR CUE:<br/>Give examinee the "Function Enable" key.</b> | Obtained the "Function Enable" key from the SM.           | N/A SAT UNSAT |              |

**JOB PERFORMANCE MEASURE**

| PERFORMANCE CHECKLIST |  | STANDARDS  | (Circle One)         |
|-----------------------|--|--|----------------------|
| 3.<br>Step<br>(17.2)  | <p>IF EITHER of the following conditions exist:<br/>                     Proposed changes NOT governed by an approved procedure<br/>                     Proposed changes outside limits of Attachment C,<br/>                     THEN obtain OSRC approval before implementing.</p> <p><b>Examiner Note:</b><br/> <b>INOP of CEAC is directly covered by this procedure and is a type I addressable constant and therefore not covered by attachment C.</b></p>  | <p>Evaluated that INOP of CEAC is within the bounds of procedure AND not outside limits of attachment C.</p>                 | <p>N/A SAT UNSAT</p> |
| 4.<br>Step<br>(17.3)  | <p>IF changing Type II Addressable Constant, THEN refer to CPC Software Change Control (1022.002).</p>   | <p>Determined that the INOP addressable constant is a type I addressable constant.</p>                                       | <p>N/A SAT UNSAT</p> |
| 5.<br>Step<br>(17.4)  | <p>IF ANY of the following exist:</p> <ul style="list-style-type: none"> <li>• Change is expected to cause channel trip</li> <li>• Effect of change is not known</li> <li>• Change is for SAM/BPPCC Type II constants (PID 81 – 89 or 99 – 102)</li> </ul> <p>THEN bypass affected CPC as follows:</p> <ul style="list-style-type: none"> <li>• IF &lt; 10-3 % power, THEN turn CPC Trip Bypass keyswitch to ON.</li> <li>• IF ≥ 10-3 % power, THEN bypass Low DNBR and High LPD inputs using Section 11.0.</li> </ul> <p><b>Examiner Cue:</b><br/> <b>A channel trip is not expected, CPC does not need to be bypassed.</b></p> | <p>Evaluated possibility of causing a channel trip.</p> <p>Evaluated whether or not affect of bypass operation is known.</p> | <p>N/A SAT UNSAT</p> |

**JOB PERFORMANCE MEASURE**

| PERFORMANCE CHECKLIST  |   | STANDARDS   | (Circle One)  |
|--|---|---|---------------|
| 6.<br>Step<br>(17.5)   | Verify changes NOT being made to any other CPC channel.<br><br><b>Examiner Cue:<br/>If requested state, no other changes are being made to any other channel.</b> | On panel 2C03, verified no changes in progress on any other CPC channel.  | N/A SAT UNSAT |
| 7.<br>Step<br>(17.6)   | IF restoring one or both CEACs,<br>THEN refer to section 8.0 of this procedure.   | Determine that neither CEAC is being restored.  | N/A SAT UNSAT |
| 8.<br>Step<br>(17.7)   | Select CPC by depressing CPC/CEAC Selector pushbutton.  | On panel 2C03 at CPC channel "B" operator's module, verified CPC mode selected.<br><br>Observed CPC half of CPC/CEAC SELECTOR pushbutton light ON.  | N/A SAT UNSAT |
| 9.<br>Step<br>(17.8)   | Select Channel Checks Display from Main Menu.   | On panel 2C03 at CPC channel "B" operator's module, selected CHANNEL CHECKS DISPLAY from Main Menu.<br><br>Observed CHANNEL CHECKS DISPLAY screen displayed.  | N/A SAT UNSAT |
| 10.<br>Step<br>(17.9)  | IF > 20% power as indicated by BDT (PID 177),<br>THEN record current value of X1 (PID 406) and LPDKW (PID 179) in CPC Addressable Constant Change log.            | On panel 2C03 at CPC channel "B" operator's module, observed power > 20% on BDT (PID 177).<br><br>Recorded current values of PID 406 and PID 179 on form OP 2105.001A in the "As Found" columns of form OP 2105.001A. | N/A SAT UNSAT |
| 11.<br>Step<br>(17.10)   | Select STANDARD OM DISPLAY.   | On panel 2C03 at CPC channel "B" operator's module, selected STANDARD OM DISPLAY from Main Menu.<br><br>Observed STANDARD OM DISPLAY screen displayed.  | N/A SAT UNSAT |
| Procedure Note:  |   |   |               |
| Type II Addressable Constants are controlled by Form 1022.002C and are therefore NOT required to be logged in CPC Addressable Constant Change log. |   |   |               |

**JOB PERFORMANCE MEASURE**

| PERFORMANCE CHECKLIST  |                        | STANDARDS   | (Circle One)  |               |
|--|------------------------|---|---|---------------|
|  | 12.<br>Step<br>(17.11) | IF changing Type II Addressable Constant, THEN log AS FOUND value of ADRCHK (PID 046) in CPC Addressable Constant Change log.     | Determined that the INOP addressable constant is a type I addressable constant.   | N/A SAT UNSAT |
| Procedure Note:<br><ul style="list-style-type: none"> <li>• If wrong PID selected, pressing 'P' will clear selection.</li> <li>• If wrong PID value entered and execute has not been initiated, pressing 'C' will revert PID back to previous value.</li> <li>• If change not completed and executed within 60 seconds, computer will revert to previous value automatically.</li> </ul> |                        |   |   |               |
|  | 13.<br>Step<br>(17.12) | Display addressable constant to be changed.   | Displayed PID 062 for CEAC operability.   | N/A SAT UNSAT |
|  | 14.<br>Step<br>(17.13) | IF changing Type I Addressable Constant, THEN record AS FOUND value in CPC Addressable Constant Change log.                       | On panel 2C03 at CPC channel "B" operator's module, selected option "P".<br><br>Entered PID 062.<br><br>Recorded current value for CEANOP (PID 062) in the "As Found Value" column of Form 2105.001A. | N/A SAT UNSAT |
|  | 15.<br>Step<br>(17.14) | IF placing ONE or BOTH CEACs in INOP, THEN refer to Section 8.0.  | Determined from initial conditions that Section 8 has been completed for placing one CEAC to INOP.  | N/A SAT UNSAT |
| <b>EXAMINER CUE: If Examinee refers to Section 8.0, Inform Examinee that Section 8.0 has been completed and all appropriate actions taken.</b>   |                        |   |   |               |
|  | 16.<br>Step<br>(17.15) | Verify new value is within the allowable values of attachment C<br><br><b>Examiners note: 1 is an allowable value for PID 62.</b> | Verified PID 62 value of 1 is allowable.  | N/A SAT UNSAT |
| (C)  | 17.<br>Step<br>(17.16) | Place FUNCTION ENABLE Switch to ON.   | On panel 2C03 at CPC channel "B" operator's module, inserted key in FUNCTION ENABLE Switch.<br><br>Rotated key to ON.<br><br>Observed FUNCTION ENABLE ACTIVE light ON.                                | N/A SAT UNSAT |

**JOB PERFORMANCE MEASURE**

| PERFORMANCE CHECKLIST  |                        |  | STANDARDS   | (Circle One)  |
|--|------------------------|--|---|---------------|
| (C)  | 18.<br>Step<br>(17.17) | Select option C (Change Value).  | On panel 2C03 at CPC channel "B" operator's module, selected option C from menu.<br><br>Verified option C Highlights.                                       | N/A SAT UNSAT |
| <p>Procedure Caution:</p> <ul style="list-style-type: none"> <li>• If PID 062 is set to 1 or 2 and operable CEAC fails, then after a 90 minute time delay, a total CEA deviation Penalty Factor of 8.0 will be applied to DNBR and LPD.</li> <li>• If PID 062 is set to 3 at 100% power, then:                             <ul style="list-style-type: none"> <li>- DNBR will lower ~ 12%.</li> <li>- LPD will rise ~ 10%.</li> <li>- Target CEA positions set to 100% withdrawn causing the following:                                     <ul style="list-style-type: none"> <li>◆ CPC will NOT provide Subgroup Deviation and Out of Sequence trips is CEA misalignment occurs.</li> <li>◆ Planar Radial Peaking Factor table lookups and CEA Shadowing corrections will NOT be performed.</li> </ul> </li> </ul> </li> </ul> |                        |  |   |               |
| (C)  | 19.<br>Step<br>(17.18) | IF changing ONE or BOTH CEACs operability status, THEN select the appropriate value from the following: <ul style="list-style-type: none"> <li>• To make CEAC 1 inoperable, set PID 062 to 1.</li> </ul> | Selected 1 for PID 062  | N/A SAT UNSAT |
| (C)  | 20.<br>Step<br>(17.19) | Enter new value.   | On panel 2C03 at CPC channel "B" operator's module, entered numerical value 1 for PID 062 to set CEAC #1 INOP Flag.<br><br>Verified PID 062 changes to 1.0. | N/A SAT UNSAT |
| (C)  | 21.<br>Step<br>(17.20) | Select option X (Execute).   | On panel 2C03 at CPC channel "B" operator's module, selected option X (Execute) from menu.<br><br>Verified CEAC INOP light is ON.                           | N/A SAT UNSAT |
|  | 22.<br>Step<br>(17.21) | Verify correct value entered.  | On panel 2C03 at CPC channel "B" operator's module, selected option "P".<br><br>Entered PID 062.<br><br>Verified PID 062 value of 1.0 is displayed.         | N/A SAT UNSAT |

**JOB PERFORMANCE MEASURE**

| PERFORMANCE CHECKLIST   |                        |  | STANDARDS   | (Circle One)  |
|---|------------------------|--|---|---------------|
| (C)   | 23.<br>Step<br>(17.22) | Place FUNCTION ENABLE Switch to OFF.   | On panel 2C03 at CPC channel "B" operator's module, rotated key in FUNCTION ENABLE Switch to OFF position.<br><br>Observed FUNCTION ENABLE ACTIVE light OFF.  | N/A SAT UNSAT |
|   | 24.<br>Step<br>(17.23) | IF changing Type I Addressable Constant, THEN enter in AS LEFT column in CPC Addressable Constant Change log.  | Recorded new value of PID 062 in "As Left" column of Form 2105.001A.  | N/A SAT UNSAT |
|   | 25.<br>Step<br>(17.24) | IF changing Type II Addressable Constant, THEN log AS LEFT value of ADRCHK (PID 046) in CPC Addressable Constant Change log.   | Determined that the INOP addressable constant is a type I addressable constant.   | N/A SAT UNSAT |
|   | 26.<br>Step<br>(17.25) | Select CHANNEL CHECKS DISPLAY from Main Menu.  | On panel 2C03 at CPC channel "B" operator's module, selected CHANNEL CHECKS DISPLAY from Main Menu.<br><br>Observed CHANNEL CHECKS DISPLAY screen is displayed.   | N/A SAT UNSAT |
|   | 27.<br>Step<br>(17.26) | IF > 20% power as indicted by BDT (PID 177), THEN record X1 (PID 406) and LPDKW (PID 179) in CPC Addressable Constant Change log and check BOTH affected in expected manner. | On panel 2C03 at CPC channel "B" operator's module, observed power > 20% on BDT (PID 177).<br><br>Recorded current values of PID 406 and PID 179 on form OP 2105.001A in the "As Found" columns of form OP 2105.001A. | N/A SAT UNSAT |
| <b>Examiner Note: When the as left value of PID 179 and 406 is recorded the JPM may be stopped.</b> |                        |  |   |               |
| END   |                        |  |   |               |

Stop Time: \_\_\_\_\_

JOB PERFORMANCE MEASURE

**EXAMINER'S COPY**

**JPM INITIAL TASK CONDITIONS:**

You are responsible for any applicable annunciators during the performance of this task. All annunciators that are not applicable to this task will be performed by another operator.

You are responsible for any applicable annunciators during the performance of this task. All annunciators that are not applicable to this task will be performed by another operator.

The Unit is in Mode 1 (power > 20%).

CEAC # 1 monthly surveillance has been authorized.

2105.001 CPC/CEAC operations Section 8 of has been completed and all appropriate actions have been taken for CEAC#1 being set to inop.

The excel CPC log is not working use paper form CPC addressable constant change log 2105.001A for the point required to be changed.

**INITIATING CUE:**

The SM/CRS directs, "Set CEAC # 1 INOP Flag in CPC Channel B using 2105.001 CPC/CEAC operations Section 17.0."

JOB PERFORMANCE MEASURE

**EXAMINEE'S COPY**

**JPM INITIAL TASK CONDITIONS:**

You are responsible for any applicable annunciators during the performance of this task. All annunciators that are not applicable to this task will be performed by another operator.

The Unit is in Mode 1 (power > 20%).

CEAC # 1 monthly surveillance has been authorized.

2105.001 CPC/CEAC operations Section 8 of has been completed and all appropriate actions have been taken for CEAC#1 being set to inop.

The excel CPC log is not working use paper form CPC addressable constant change log 2105.001A for the point required to be changed.

**INITIATING CUE:**

The SM/CRS directs, "Set CEAC # 1 INOP Flag in CPC Channel B using 2105.001 CPC/CEAC operations Section 17.0."

JOB PERFORMANCE MEASURE

UNIT:  2  REV #:  001  DATE: \_\_\_\_\_

SYSTEM/DUTY AREA:  Pressurizer Spray operation S8

TASK:  Isolate failed open Pressurizer Spray valve. (Alternate Success Path)

JTA#:  ANO-2-RO-EOPAOP-OFFNORM-181

KA VALUE RO:  3.9  SRO:  3.9  KA REFERENCE:  010 A2.02

APPROVED FOR ADMINISTRATION TO: RO:  X  SRO:  X

TASK LOCATION: INSIDE CR:  X  OUTSIDE CR: \_\_\_\_\_ BOTH: \_\_\_\_\_

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE: \_\_\_\_\_ SIMULATOR:  Perform  CLASSROOM: \_\_\_\_\_

POSITION EVALUATED: RO: \_\_\_\_\_ SRO: \_\_\_\_\_

ACTUAL TESTING ENVIRONMENT: SIMULATOR: \_\_\_\_\_ PLANT SITE: \_\_\_\_\_ CLASSROOM: \_\_\_\_\_

TESTING METHOD: SIMULATE: \_\_\_\_\_ PERFORM: \_\_\_\_\_

APPROXIMATE COMPLETION TIME IN MINUTES:  5 Minutes

REFERENCE(S):  OP-2203.028 PZR System Malfunctions

EXAMINEE'S NAME: \_\_\_\_\_ Badge #: \_\_\_\_\_

EVALUATOR'S NAME: \_\_\_\_\_

THE EXAMINEE'S PERFORMANCE WAS EVALUATED AGAINST THE STANDARDS CONTAINED IN THIS JPM AND IS DETERMINED TO BE:

SATISFACTORY: \_\_\_\_\_ UNSATISFACTORY: \_\_\_\_\_

PERFORMANCE CHECKLIST COMMENTS:

\_\_\_\_\_  
\_\_\_\_\_

Start Time \_\_\_\_\_ Stop Time \_\_\_\_\_ Total Time \_\_\_\_\_

SIGNED: \_\_\_\_\_ DATE: \_\_\_\_\_

SIGNATURE INDICATES THIS JPM HAS BEEN COMPARED TO ITS APPLICABLE PROCEDURE BY A QUALIFIED INDIVIDUAL (NOT THE EXAMINEE) AND IS CURRENT WITH THAT REVISION.

**JOB PERFORMANCE MEASURE**

THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:

**The examiner shall ensure that the examinee has been briefed on NUREG 1021 Appendix E.**

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JPM INITIAL TASK CONDITIONS:

**2CV-4651 PZR spray valve failed open. Mode 1**

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TASK STANDARD:

**Reactor tripped and 2P-32A secured.**

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TASK PERFORMANCE AIDS:

**OP 2203.028 Step 2**

**Examiner Note: Give the Yellow pages to the applicant.**

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SIMULATOR SETUP:

**All RCPs running. Mode 1**

**CV4651 value = 1.**

**Trigger1: CV4656 value = .9, DO\_HS\_4656\_G = off, & DO\_HS\_4656\_R = off**

**Conditional trigger 1 set gh4g4656.**

**Have all backup htrs on.**

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JOB PERFORMANCE MEASURE

INITIATING CUE:

The CRS directs, "Isolate PZR spray valve 2CV-4651 using 2203.028 PZR system malfunctions step 2"

START TIME: \_\_\_\_\_

Examiner Note: Maintain the simulator in Freeze until the candidate is ready to start.

| PERFORMANCE CHECKLIST   |   | STANDARDS   |               | (Circle One) |
|---|---|---|---------------|--------------|
| <b>Examiner Note: Give the Yellow pages to the applicant.</b> |   |   |               |              |
| 1.<br>(Step 2.A)  | IF ANY PZR Spray valve failed open, THEN perform the following:<br><br>A. Place affected PZR Spray valve in MANUAL and close:<br><ul style="list-style-type: none"> <li>• 2CV-4651</li> <li>• 2CV-4652</li> </ul>                   | On panel 2C04 placed PZR spray valve 2HS-4651B in manual<br><br>Placed 2CV-4651 handswitch in closed.<br><br>Observed red and green lights flash above handswitch and the red light remains on. | N/A SAT UNSAT |              |
| 2.<br>(Step 2.B.1)  | IF affected PZR Spray valve did NOT close, THEN perform the following:<br><br>Place associated PZR Spray valve handswitch to OPEN for 1 second:<br><ul style="list-style-type: none"> <li>• 2CV-4651</li> <li>• 2CV-4652</li> </ul> | On panel 2C04, placed handswitch for 2CV-4651 in open for 1 sec.<br><br>Observed red light ON above handswitch  | N/A SAT UNSAT |              |
| 3.<br>(Step 2.B.2)  | WHEN 5 seconds have elapsed, THEN place handswitch in CLOSE until green indicating light flashes.   | On panel 2C04 and 5 sec have elapsed, placed handswitch for 2CV-4651 in close until lights flash.<br><br>Observed red and green lights flash above handswitch and the red light remains on.     | N/A SAT UNSAT |              |

JOB PERFORMANCE MEASURE

| PERFORMANCE CHECKLIST                                   |                  | STANDARDS   |   | (Circle One)  |
|---|------------------|---|---|---------------|
|   | 4.<br>(Step 2.C) | IF affected PZR Spray valve is 2CV-4651 <u>AND</u> will NOT close, THEN close associated energized Block valves: <ul style="list-style-type: none"> <li>• 2CV-4655</li> <li>• 2CV-4656</li> </ul> | On panel 2C04, placed 2CV-4655/2CV-4656 handswitch to close.<br><br>Observed 2CV-4656 lights out and PZR pressure lowering. | N/A SAT UNSAT |
| <b>EXAMINER'S NOTE:</b>                                 |                  |   |   |               |
| The following is the alternate path portion of this JPM |                  |   |   |               |
|   | 5.<br>(Step 2.E) | IF both of the following are true,<br>Affected PZR spray valve open.<br><br>Associated energized PZR Spray Block valve will NOT close,<br><br>THEN verify ALL PZR heaters ON.                     | On panel 2C04, observed all pZR heater on as indicated by red lights above the handswitches.                                | N/A SAT UNSAT |
| (C)   | 6.<br>(Step 3.A) | IF RCS pressure lowers to 2000 psia, THEN perform the following:<br><br>IF plant in mode 1 or 2, THEN trip Reactor.   | When, RCS pressure is observed at 2000 psia or informed by evaluator RCS is 2000 psia, Tripped the reactor.                 | N/A SAT UNSAT |
| (C)   | 7.<br>(Step 3.B) | Stop RCP in loop with failed PZR Spray valve.   | Secured 2P-32A Reactor Coolant pump.  | N/A SAT UNSAT |
|   | 8.<br>(Step 3.C) | IF only one RCP affected AND desired to balance reactor coolant loop temperatures, THEN verify one RCP secured in each loop.  | If desired then Secure either 2P-32C or 2P-32D.   | N/A SAT UNSAT |
| END   |                  |   |   |               |

STOP TIME: \_\_\_\_\_

JOB PERFORMANCE MEASURE

**EXAMINER's COPY**

**JPM INITIAL TASK CONDITIONS:**

You are responsible for any applicable annunciators during the performance of this task. All annunciators that are not applicable to this task will be performed by another operator.

Mode 1

2CV-4651 PZR spray valve has failed open during boron equalization.

**INITIATING CUE:**

The CRS directs, "Isolate PZR spray valve 2CV-4651 using 2203.028 PZR system malfunctions starting with step 2".

JOB PERFORMANCE MEASURE

EXAMINEE's COPY

**JPM INITIAL TASK CONDITIONS:**

You are responsible for any applicable annunciators during the performance of this task. All annunciators that are not applicable to this task will be performed by another operator.

Mode 1

2CV-4651 PZR spray valve has failed open during boron equalization.

**INITIATING CUE:**

The CRS directs, "Isolate PZR spray valve 2CV-4651 using 2203.028 PZR system malfunctions starting with step 2".

JOB PERFORMANCE MEASURE

UNIT:  2  REV #:  07  DATE: \_\_\_\_\_

SYSTEM/DUTY AREA:  Emergency Diesel Generator System

TASK:  Startup a diesel generator without DC control power (2K-4A) (Alternate Success Path)

JTA#:  ANO2AOEDGOFFNORM5

KA VALUE RO:  4.0  SRO:  4.3  KA REFERENCE:  064 A4.01

APPROVED FOR ADMINISTRATION TO: RO:  X  SRO:  X

TASK LOCATION: INSIDE CR: \_\_\_\_\_ OUTSIDE CR:  X  BOTH: \_\_\_\_\_

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE:  Simulate  SIMULATOR: \_\_\_\_\_ LAB: \_\_\_\_\_

POSITION EVALUATED: RO: \_\_\_\_\_ SRO: \_\_\_\_\_

ACTUAL TESTING ENVIRONMENT: SIMULATOR: \_\_\_\_\_ PLANT SITE: \_\_\_\_\_ LAB: \_\_\_\_\_

TESTING METHOD: SIMULATE: \_\_\_\_\_ PERFORM: \_\_\_\_\_

APPROXIMATE COMPLETION TIME IN MINUTES:  20 Minutes

REFERENCE(S):  OP 2104.036

EXAMINEE'S NAME: \_\_\_\_\_ Badge #: \_\_\_\_\_

EVALUATOR'S NAME: \_\_\_\_\_

THE EXAMINEE'S PERFORMANCE WAS EVALUATED AGAINST THE STANDARDS CONTAINED IN THIS JPM AND IS DETERMINED TO BE:

SATISFACTORY: \_\_\_\_\_ UNSATISFACTORY: \_\_\_\_\_

PERFORMANCE CHECKLIST COMMENTS:

\_\_\_\_\_  
\_\_\_\_\_

Start Time \_\_\_\_\_ Stop Time \_\_\_\_\_ Total Time \_\_\_\_\_

SIGNED: \_\_\_\_\_ DATE: \_\_\_\_\_

SIGNATURE INDICATES THIS JPM HAS BEEN COMPARED TO ITS APPLICABLE PROCEDURE BY A QUALIFIED INDIVIDUAL (NOT THE EXAMINEE) AND IS CURRENT WITH THAT REVISION.



JOB PERFORMANCE MEASURE

INITIATING CUE:

The SM/CRS directs, "Perform a loss of DC start of 2DG1 using OP 2104.036, Exhibit 1."

START TIME: \_\_\_\_\_

| PERFORMANCE CHECKLIST  |  | STANDARDS  | (Circle One)  |
|--|--|--|---------------|
| Procedure Caution:<br>Fault condition that caused loss of DC may still be present and should be removed if known.  |  |  |               |
| Procedure Note:<br><ul style="list-style-type: none"> <li>This procedure assumes no AC or DC power available.</li> <li>Electrical Safety equipment will be required for closing of the EDG output breaker and the SW pump supply breaker.</li> </ul> |  |  |               |
| 1.<br>(Step 1.0)   | IF NOT directed to perform this exhibit per Alternate Shutdown (2203.014),<br><br>THEN obtain arc flash PPE (suit, hood, and voltage rated or leather gloves) for Manual Operation of 4160/6900V AC Breaker with Door Open.<br><br><b>Examiner Note:</b><br><b>Arc flash PPE can be obtained from the cabinet across from the elevator on the 372' elevation.</b><br><br><b>Examiner Cue:</b><br><b>Arc flash PPE has been obtained.</b> | Obtains Arc flash PPE and Electrical PPE on at PPE cabinet.<br><br><b>Examiner Note: The examinee should show where to obtain the PPE. Do not require the applicant to bring the PPE for simulation of this JPM.</b> | N/A SAT UNSAT |
| 2.<br>(Step 2.0)   | Open one of the following sets of breakers:<br>- 2C107 breaker (2D23-2)<br>- 2E11 breaker (2D23-6)<br>- 2C107 breaker (2D23-8)<br>OR<br>- 2E11 breaker (D2E11NA6) (located inside 2E12)<br>- 2C107 breaker (D2C107NA8)<br>- 2C107 breaker (D2C107NA2)<br><br><b>Examiner Cue:</b><br><b>Show <u>PICTURE #1</u> pictures for 2D-23 breakers or show <u>PICTURES #7, and #8</u> for 2C107, 2E-12. Breakers indicate NOT OPEN.</b>          | For the listed breaker, opened panel door and moved breaker handle to OFF.   | N/A SAT UNSAT |
| <b>TRANSITION NOTE:</b><br><b>Go to 2A3 switchgear room.</b>   |  |  |               |

JOB PERFORMANCE MEASURE

| PERFORMANCE CHECKLIST   |                  | STANDARDS   |  | (Circle One)  |
|---|------------------|---|--|---------------|
| <b>EXAMINERS NOTE:</b>  |                  |   |  |               |
| <p>For the 4160v breakers in Steps 2 and 3, do NOT open the breaker cubicle doors. Use the provided pictures. Have the candidate explain the indications he would use to determine the following.</p> <ol style="list-style-type: none"> <li>1. Breaker position</li> <li>2. Closing Spring Status</li> </ol> <p>Both of these indicators are located on the breaker.</p> <p>Standard:</p> <ol style="list-style-type: none"> <li>1. The student must use mechanical breaker position indication.</li> </ol> <p>The student must use mechanical closing spring status indication.</p> |                  |   |  |               |
| <b>Procedure Note:</b>  |                  |   |  |               |
| <p>Instructions for manual operation of 4160 VAC Breakers are contained in Electrical System Operations (2107.001), Exhibits 1 and 2.</p>   |                  |   |  |               |
| <b>Examiners Note:</b>  |                  |   |  |               |
| <p>The following breakers are listed with their respective conditions for the plant conditions that exist.</p>  |                  |   |  |               |
| (C)   | 3.<br>(Step 3.0) | <p>Verify the following breakers OPEN WITH closing springs charged.</p> <p><b>Note: Show PICTURE #2 for 2A-302</b></p> <p>SW Pump 2P4A (2A-302)</p> <ul style="list-style-type: none"> <li>• This breaker will be <b>closed</b> with closing springs charged</li> </ul> <p><b>Note: Show PICTURE #3 for the remaining breakers of this step.</b></p> <p>SW Pump 2P4B (2A-303)</p> <ul style="list-style-type: none"> <li>• This breaker will be open with closing springs charged</li> </ul> <p>2DG1 Output breaker (2A-308)</p> <ul style="list-style-type: none"> <li>• This breaker will be open with closing springs charged</li> </ul> <p><b>Examiner Cue:</b><br/><b>For 2A302 show PICTURE #3 when the mechanical trip button is pushed.</b></p> | <p>At bus 2A3.</p> <p>Observed indications for the following:</p> <ul style="list-style-type: none"> <li>• Mechanical breaker position</li> <li>• Mechanical closing spring indication</li> </ul> <p>Operator opened any closed breaker by pushing the mechanical breaker trip button on the breaker</p> | N/A SAT UNSAT |

JOB PERFORMANCE MEASURE

| PERFORMANCE CHECKLIST |   | STANDARDS  | (Circle One)         |
|-----------------------|---|--|----------------------|
| (C)                   | <p>4.<br/>(Step 4.0)</p> <p>Verify the following breakers OPEN.</p> <p><b>Note: Show <u>PICTURE #3</u> for the following breakers</b><br/>                     CS Pump 2P35A (2A-304)<br/>                     ♦ Breaker is open</p> <p>LPSI Pump 2P60A (2A-305)<br/>                     ♦ Breaker is open</p> <p>HPSI Pump 2P89A (2A-306)<br/>                     ♦ Breaker is open</p> <p>HPSI Pump 2P89C (2A-307)<br/>                     ♦ Breaker is open</p> <p><b>Note: Show <u>PICTURE #2</u> for 2A-309</b><br/>                     2A3 Supply breaker (2A-309)<br/>                     ♦ Breaker is <b>closed</b></p> <p><b>Note: Show <u>PICTURE #3</u> for 2A-310 and 2A-311</b><br/>                     2A3-2A4 Tie (2A-310)<br/>                     ♦ Breaker is open</p> <p>2P-7B EFW pumps breaker (2A-311)<br/>                     ♦ Breaker is open</p> <p><b>Examiner Cue:</b><br/>                     For 2A309 show <b><u>PICTURE #3</u></b> when the mechanical trip button is pushed.</p> | <p>For each listed breaker, verified the breaker is open with the mechanical breaker indication.</p> | <p>N/A SAT UNSAT</p> |

JOB PERFORMANCE MEASURE

| <b>EXAMINERS NOTE:</b>  |                  |   |  |               |
|---|------------------|---|--|---------------|
| - 2CV-1503-1 requires DC power to open automatically.<br>- After operator requests 2CV-1503-1 opened or if he states he is going to open 2CV-1503-1, provide Cue of step 5. |                  |   |  |               |
| (C)   | 5.<br>(Step 5.0) | Verify 2DG1 service water outlet (2CV-1503-1) open using local ratchet.<br><br><b>Examiner Cue:</b><br><br><b>WCO reports Service Water Valve (2CV-1503-1) is OPEN.</b> | Using radio or telephone communications, instructed WCO to OPEN 2CV-1503-1 locally using manual operator.<br><br><u>OR</u><br><br>Using radio or telephone communications, contacted Control Room personnel to have WCO to OPEN 2DG1 Service Water valve (2CV-1503-1) using the manual operator locally. | N/A SAT UNSAT |
| <b>TRANSITION NOTE:</b>   |                  |   |  |               |
| <b>Go to 2DG1 room.</b>   |                  |   |  |               |
|   | 6.<br>(Step 6.0) | Place Exciter Regulator Local/Remote HS in LOCAL.<br><br><b>Examiner Cue:</b><br><b>The exciter regulator handswitch indicates LOCAL.</b>                               | On panel 2E12, rotated Exciter Regulator handswitch to LOCAL.  | N/A SAT UNSAT |
|   | 7.<br>(Step 7.0) | Unlock local Engine Control switch (2HS-2815-1).<br><br><b>Examiner Cue:</b><br><b>Engine Control switch is unlocked.</b>   | On panel 2E11, inserted key in Engine Control Switch.<br><br>Rotated key clockwise to unlock.  | N/A SAT UNSAT |
|   | 8.<br>(Step 8.0) | Place 2HS-2815-1 in START.<br><br><b>Examiner Cue:</b><br><b>The Engine Control handswitch indicates START.</b>   | Rotated Engine Control handswitch through LOCKOUT to START.  | N/A SAT UNSAT |
| <b>Procedure Caution:</b>   |                  |   |  |               |
| Protective circuits are NOT functional with control power off.  |                  |   |  |               |
| <b>TRANSITION NOTE:</b>   |                  |   |  |               |
| <b>Go to Alternate Shutdown Locker located just outside U2 CR Extension</b>   |                  |   |  |               |
|   | 9.<br>(Step 9.1) | Obtain FNM 10 amp fuses from CRS bag in Alternate Shutdown file cabinet.<br><br><b>Examiner Cue:</b><br><b>Fuses in hand.</b>   | At the Alternate Shutdown file cabinet, obtained at least two FNM 10 amp fuses from the CRS bag.   | N/A SAT UNSAT |
| <b>TRANSITION NOTE:</b>   |                  |   |  |               |
| <b>Go to 2DG1 room.</b>   |                  |   |  |               |
| <b>Examiner Note:</b>   |                  |   |  |               |
| Step 9.2 for donning arc flash PPE is not required to be performed for this JPM. Inform the examinee that the PPE does not need to be donned.                               |                  |   |  |               |

JOB PERFORMANCE MEASURE

|   |                   |  |   |               |
|---|-------------------|--|---|---------------|
| (C)   | 10.<br>(Step 9.3) | Manually operate EITHER Air Start Solenoid by slowly rotating manual operator stem clockwise:<br><br>2SV-2809-1<br>2SV-2810-1<br><br><b>Examiner Cue:<br/>Engine noise indicates start.</b>  | Rotated manual operator stem on either Air Start Solenoid clockwise.                                  | N/A SAT UNSAT |
|   | 11.<br>(Step 9.4) | WHEN engine starts, THEN disengage manual operator by rotating stem counter-clockwise.   | Upon 2DG1 start, disengaged manual solenoid operator by rotating counter-clockwise.                   | N/A SAT UNSAT |
| <p align="center"><b>EXAMINER'S NOTE:</b><br/>The negative cue in the following step is <b>REQUIRED</b> to implement the Alternate Success Path.</p>  |                   |  |   |               |
| <p align="center"><b>Procedure Note:</b><br/>Manual voltage adjust is NOT available in this mode of operation.<br/>Voltage Regulator maintains 4160 volts as set prior to last shutdown.</p>  |                   |  |   |               |
|   | 12.<br>(Step 9.5) | Check generator voltage 3800 to 4400 volts.<br><br><b>Examiner Cue:<br/>2DG1 voltage is ~ 0 volts.</b>   | On panel 2E11, checked 2DG1 voltage between 3800 and 4400 volts on V-2DG1-3, 2DG1 local AC voltmeter. | N/A SAT UNSAT |
| <p align="center"><b>Examiner Note:</b></p> <p>Do not open the local EDG panel.</p> <p>Use <b>Picture #4 (Open Panel EDG)</b> picture to have them describe the location of the Exciter Field Shutdown Contactor (K1). After they locate it show them <b>Picture #5</b> (close up picture) to describe operating the slide switch.</p> <p>Use provided pictures to have the examinee show how they would operate the K1 slide switch and install the fuses for the back up field flash <b>Picture #6</b>.</p> |                   |  |   |               |
|   | 13.<br>(Step 9.6) | IF generator has NO Output Voltage, THEN manually reset Exciter Relay as follows by operating red slide switch on Exciter Field Shutdown Contactor (K1) in 2E12.<br><br><b>Picture #4 and #5</b> have the applicants show the location of the K1 relay slide switch.<br><br><b>Examiner Cue:<br/>Red slide switch moves up.<br/>2DG1 voltage is ~ 0 volts.</b> | Inside panel 2E12, pushed the red slide switch up on the Exciter Field Shutdown Contactor (K1).       | N/A SAT UNSAT |
| <p align="center"><b>Examiner Note:</b></p> <p>Do not open the local EDG panel. Have the examinee describe the location of the fuse holder for the backup field flash fuses (Bottom half of 2E12 on left side) <b>Picture #6</b>.</p> <p>Use provided picture to have the examinee show how they would install the fuses for the back up field flash.</p>   |                   |  |   |               |

JOB PERFORMANCE MEASURE

|  |                     |   |   |               |
|--|---------------------|---|---|---------------|
| (C)  | 14.<br>(Step 9.7.1) | IF generator output voltage < 3800 volts,<br>THEN perform the following:<br><br>Install FNM 10 amp fuses in fuse block in 2E12 labeled: FUSES SHALL NOT BE INSTALLED DURING NORMAL OPERATION.<br><br><b>Use <u>Picture #6</u> for installation of the fuses.</b><br><br><b>Examiner Cue:<br/>Fuses installed.</b> | Inside panel 2E12, installed <b><u>two</u></b> FNM 10 amp fuses in fuse block labeled "Fuses Shall Not Be Installed During Normal Operation".   | N/A SAT UNSAT |
| (C)  | 15.<br>(Step 9.7.2) | Place Flashing Power Select Switch (DG1F/SS) to BACKUP.<br><br><b>Examiner Cue:<br/>Switch indicates BACKUP.</b>  | On panel 2E12, placed DG1F/SS to BACKUP.  | N/A SAT UNSAT |
| (C)  | 16.<br>(Step 9.7.3) | Place Flashing Power Control Switch (DG1F/CS) to BACKUP.<br><br><b>Examiner Cue:<br/>Voltage indicates ~ 4160 volts.</b>  | On panel 2E12, held DG1F/CS in BACKUP until voltage builds up.<br><br>On panel 2E11, observed 2DG1 voltage between 3800 and 4400 volts on V-2DG1-3, 2DG1 local AC voltmeter.<br><br>Released DG1F/CS. | N/A SAT UNSAT |
|  | 17.<br>(Step 9.7.4) | WHEN voltage builds up,<br>THEN release switch.   | On panel 2E12, released DG1F/CS when voltage builds up.   | N/A SAT UNSAT |
|  | 18.<br>(Step 9.8)   | Verify generator frequency 59.5 to 60.5 Hz AND maintain as loads are added.<br><br><b>Examiner Cue:<br/>2DG1 frequency is ~ 60 Hz.</b>  | On panel 2E11, verified 2DG1 frequency between 59.5 and 60.5 Hz and maintained as loads are added.  | N/A SAT UNSAT |
| Examiner Note:<br>The JPM should be ended after step 9.8 is completed. |                     |   |   |               |
| <b>END</b>   |                     |   |   |               |

STOP TIME: \_\_\_\_\_

JOB PERFORMANCE MEASURE

Picture #1



2D-23 continued on the next page.



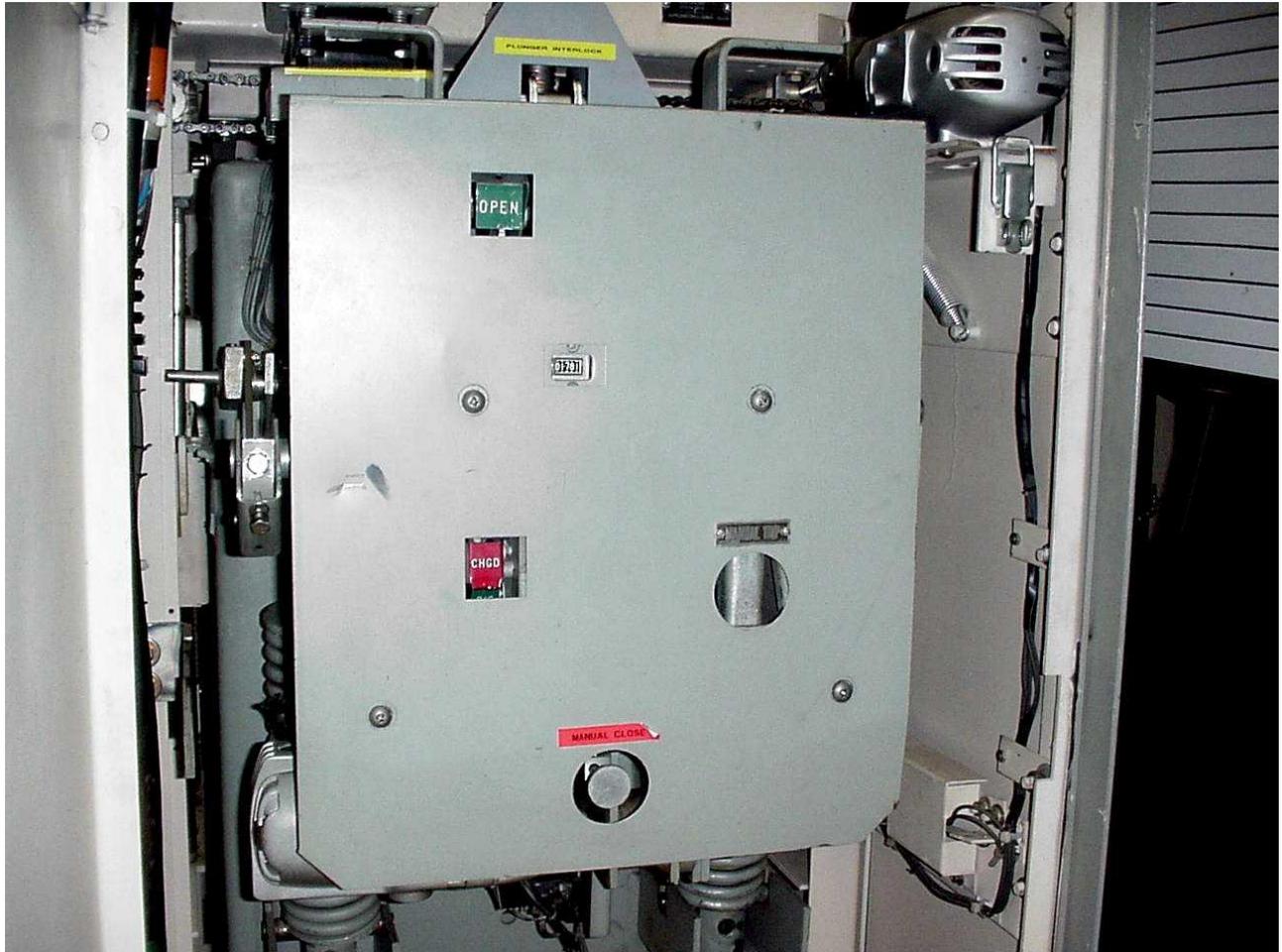
JOB PERFORMANCE MEASURE

Picture #2



JOB PERFORMANCE MEASURE

Picture #3



Picture #4



# Picture #5



Picture #6



Picture #7



JOB PERFORMANCE MEASURE

Picture #8



**Examiner's Copy**

**JPM INITIAL TASK CONDITIONS:**

The plant is in Mode 3, post reactor trip, no AC or red DC power is available. 2DG2 [2K-4B] is tagged out for maintenance with its oil pump removed.

**INITIATING CUE:**

The SM/CRS directs, "Perform a loss of DC start of 2DG1 using OP 2104.036, Exhibit 1."

JOB PERFORMANCE MEASURE

**Examinee's Copy**

**JPM INITIAL TASK CONDITIONS:**

The plant is in Mode 3, post reactor trip, no AC or red DC power is available. 2DG2 [2K-4B] is tagged out for maintenance with its oil pump removed.

**INITIATING CUE:**

The SM/CRS directs, "Perform a loss of DC start of 2DG1 using OP 2104.036, Exhibit 1."

JOB PERFORMANCE MEASURE

UNIT:  2  REV #:  011  DATE: \_\_\_\_\_

SYSTEM/DUTY AREA:  Control Element Drive Mechanism Control System

TASK:  Start up a CEA drive motor generator set (first one)

JTA#:  ANO2-AO-CEDM-NORM2

KA VALUE RO:  3.7  SRO:  3.4  KA REFERENCE:  001 A4.08

APPROVED FOR ADMINISTRATION TO: RO:  X  SRO:  X

TASK LOCATION: INSIDE CR: \_\_\_\_\_ OUTSIDE CR:  X  BOTH: \_\_\_\_\_

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE:  Simulate  SIMULATOR: \_\_\_\_\_ LAB: \_\_\_\_\_

POSITION EVALUATED: RO: \_\_\_\_\_ SRO: \_\_\_\_\_

ACTUAL TESTING ENVIRONMENT: SIMULATOR: \_\_\_\_\_ PLANT SITE: \_\_\_\_\_ LAB: \_\_\_\_\_

TESTING METHOD: SIMULATE: \_\_\_\_\_ PERFORM: \_\_\_\_\_

APPROXIMATE COMPLETION TIME IN MINUTES:  15 Minutes

REFERENCE(S):  OP 2105.009

EXAMINEE'S NAME: \_\_\_\_\_ BADGE #: \_\_\_\_\_

EVALUATOR'S NAME: \_\_\_\_\_

THE EXAMINEE'S PERFORMANCE WAS EVALUATED AGAINST THE STANDARDS CONTAINED IN THIS JPM AND IS DETERMINED TO BE:

SATISFACTORY: \_\_\_\_\_ UNSATISFACTORY: \_\_\_\_\_

PERFORMANCE CHECKLIST COMMENTS:

\_\_\_\_\_  
\_\_\_\_\_

Start Time \_\_\_\_\_ Stop Time \_\_\_\_\_ Total Time \_\_\_\_\_

SIGNED: \_\_\_\_\_ DATE: \_\_\_\_\_

SIGNATURE INDICATES THIS JPM HAS BEEN COMPARED TO ITS APPLICABLE PROCEDURE BY A QUALIFIED INDIVIDUAL (NOT THE EXAMINEE) AND IS CURRENT WITH THAT REVISION.

**JOB PERFORMANCE MEASURE**

**THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:**

The examiner shall ensure that the examinee has been briefed on NUREG 1021 Appendix E.

**JPM INITIAL TASK CONDITIONS:** The following conditions exist.

1. Reactor trip circuit breakers 1 through 8 have been verified open.
  2. Both MG sets are stopped.
- 
- 

**TASK STANDARD:** The first MG set has been started and placed in service with a normal operating voltage of approximately 240 VAC.

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**TASK PERFORMANCE AIDS:** OP 2105.009 Section 7.0 ; Picture of MG set #1 cabinet.

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JOB PERFORMANCE MEASURE

INITIATING CUE:

The SM/CRS directs, "Place #1 MG in service using OP 2105.009, Section 7.0."

START TIME: \_\_\_\_\_

| PERFORMANCE CHECKLIST   |  | STANDARDS   | (Circle One)  |
|---|--|---|---------------|
| <p>Procedure Note:<br/>DSS panels (2C407/2C408) are powered from 2Y26 240V System Output breaker (CB7). (CR-ANO-2-2005-1277)</p>  |  |   |               |
| <p><b>Examiner Note: Use Picture #1, #2, and #3 to have the applicants describe the locations of the switches then show them the pictures list in the JPM as desired.</b></p> |  |   |               |
| 1.<br>(Step 7.1.1)  | <p>DSS Contactor OR DSS Bypass Breaker closed.</p> <ul style="list-style-type: none"> <li>• 29-1/DSS OR 52-1/DSS (MG Set #1)</li> </ul> <p><b>Examiner Cue:</b><br/><b>Show picture #4 (The DSS contactor indicates red light on and green light off.)</b></p> | <p>In the control room and verified DSS contactor or contactor bypass breaker closed by indication on panel 2C14;</p> <p style="text-align: center;"><u>OR</u></p> <p>At panel 2C407, verified the DSS contact CLOSED by observing the red closed indicating lamp illuminated or verified the contactor bypass breaker closed by observing the red mechanical indicating flag on the breaker indicating closed</p> <p style="text-align: center;"><u>OR</u></p> <p>At panel 2C-409 just inside the CEDMCS Room, observed the DSS contactor closed by observing the red closed lamp illuminated.</p> | N/A SAT UNSAT |
| <p><b>TRANSITION NOTE:</b><br/>Go to the 2B53 room, elevation 368' TB</p>   |  |   |               |
| 2.<br>(Step 7.1.2)  | <p>Check MG set #1 power supply breaker (2B-722) closed.</p> <p><b>Examiner Cue:</b><br/><b>Either travel to the breaker or show Picture #5 (Breaker status mechanical indicator shows red for "breaker closed").</b></p>                                      | <p>At MCC 2B7 cubicle 2B-722, observed red "breaker closed" mechanical.</p>   | N/A SAT UNSAT |
| <p><b>TRANSITION NOTE:</b><br/>Go to CEDM MG Set room</p>   |  |   |               |

JOB PERFORMANCE MEASURE

| PERFORMANCE CHECKLIST  |   | STANDARDS  | (Circle One)  |
|--|---|--|---------------|
| 3.<br>(Step 7.1.3)   | Motor Input circuit breaker open (handswitch in OFF)<br><b>Examiner Cue:</b><br><b>Show Picture #6 (Show as closed or on but should be open/off) and describe position as Circuit breaker is in OPEN / Control switch is in OFF.</b>  | At panel 2C163, verified motor input Breaker OPEN (control switch in OFF).   | N/A SAT UNSAT |
| 4.<br>(Step 7.1.4)   | Neutral Interrupter open (handswitch in OFF).<br><b>Examiner Cue:</b><br><b>Show Picture #7 (Show as closed or on but should be open/off) / Neutral interrupter pointing to OFF.</b>  | At panel 2C163, verified neutral interrupter pointing to OFF.  | N/A SAT UNSAT |
| <b>EXAMINER'S NOTE:</b>  |   |  |               |
| The breaker may be inaccessible if motor input/neutral interrupter handle(s) are installed. Therefore, the candidate may be required to explain the indications available to verify generator output breaker OPEN. |   |  |               |
| 5.<br>(Step 7.1.5)   | Generator Output circuit breaker for selected MG set open (inside lower right section of cabinet):<br><b>Examiner Cue:</b><br><b>If the control room is requested then show picture #8 (Generator Output circuit breaker is OPEN.) or show picture #10 and describe green light on red light off.</b> | Inside panel 2C163 in the lower right section, verified green flag visible on breaker.<br><br><u>OR</u><br>Contacted the control room to verify the generator output breaker green OPEN indicating lamp on 2C14 is lit.<br><br><u>OR</u><br>At panel 2C163 verified the green "load off" lamp illuminated. | N/A SAT UNSAT |
| 6.<br>(Step 7.1.6)   | Verify motor control selector switch in LOCAL.<br><b>Examiner Cue:</b><br><b>Show picture #9 (Selector switch in LOCAL).</b>  | At panel 2C163, verified motor control selector switch pointing to LOCAL.  | N/A SAT UNSAT |
| <b>Examiner note:</b>  |   |  |               |
| Step 7.2.1 is only verifying step 7.1 is complete which the candidate just performed.  |   |  |               |

JOB PERFORMANCE MEASURE

| PERFORMANCE CHECKLIST  |  | STANDARDS  | (Circle One)  |
|--|--|--|---------------|
|  | 7.<br>(Step 7.2.2)<br><br><b>Verify Reactor Trip circuit breakers 1 through 8 open.</b><br><br><b><u>Examiner Cue:</u></b><br><b>If the control room is requested then show Picture #8 (Green light on red light off for all reactor trip circuit breakers).</b> | Verified Reactor trip circuit breakers 1 through 8 are open by any of the following:<br><br>Initial conditions<br><br>Observing locally<br><br>Calling the control room. |               |
| (C)  | 8.<br>(Step 7.2.3)<br><br><b>Manually close Motor Input circuit breaker by taking handswitch to ON.</b><br><br><b><u>Examiner Cue:</u></b><br><b>Show picture #6 (Input circuit breaker HS is pointing to on).</b>   | At panel 2C163, closed the motor input circuit breaker by rotating the control handle CW from "OFF" to "ON".   | N/A SAT UNSAT |
| (C)  | 9.<br>(Step 7.2.4)<br><br><b>Close Neutral Interrupter by taking handswitch to ON.</b><br><br><b><u>Examiner Cue:</u></b><br><b>Show picture #7 (Neutral interrupter breaker HS is pointing to on).</b>  | At panel 2C163, closed the neutral interrupter by rotating the control handle CW from OFF to the ON position.  | N/A SAT UNSAT |
|  | 10.<br>(Step 7.2.5)<br><br><b>Check Load Off light illuminated.</b><br><br><b><u>Examiner Cue:</u></b><br><b>Show Picture #10 (shown as Load on) and describe Green light ON and Red light OFF</b>   | At panel 2C163, observed the green "load off" light illuminated.   | N/A SAT UNSAT |
| (C)  | 11.<br>(Step 7.2.6)<br><br><b>Depress Motor On pushbutton to start motor.</b><br><br><b><u>Examiner Cue:</u></b><br><b>Show Picture #11 (the red "motor on" lamp is illuminated.)</b>  | At panel 2C163, depressed "MOTOR ON" push-button.<br><br>Observed the red "motor on" lamp lit.   | N/A SAT UNSAT |
| Procedure Note:<br><br>If voltage band of 240-243 VAC not obtained in step 7.2.7, then Push to Buildup button should be released and substep A. should be performed. |  |  |               |

JOB PERFORMANCE MEASURE

| PERFORMANCE CHECKLIST |                     |  | STANDARDS   | (Circle One)  |
|-----------------------|---------------------|--|---|---------------|
| (C)                   | 12.<br>(Step 7.2.7) | <p>WHEN Push Voltage Buildup light is illuminated, AND at least 30 seconds have elapsed, THEN depress and hold Push to Buildup Gen Voltage push button until 240 to 243 VAC is reached.</p> <p><b>Examiner Cue:</b><br/>Show Picture #12 and describe that the push voltage buildup button light is illuminated.</p> <p><b>Examiner Cue:</b><br/>Show Picture #13 after the voltage PB is depressed.</p> | <p>At panel 2C163 performed the following.</p> <p>With "push voltage buildup" light on depressed VOLTAGE BUILDUP push-button until voltage is between 240 and 243 VAC.</p> <p>Released push-button.</p> | N/A SAT UNSAT |
|                       | 13.<br>(Step 7.2.8) | <p>Push Reset pushbutton to clear any remaining alarms.</p> <p><b>Examiner Cue:</b><br/>Show Picture #14 (All alarms are clear).</p>   | <p>At panel 2C163, cleared any alarms by depressing and releasing RESET push-button.</p> <p>Observed alarms cleared.</p>  | N/A SAT UNSAT |
| (C)                   | 14.<br>(Step 7.2.9) | <p>Close Generator Output breaker for selected MG set by pushing Load On pushbutton:</p> <ul style="list-style-type: none"> <li>• 2C163 2CB (MG set #1)</li> </ul> <p><b>Examiner Cue:</b><br/>Show Picture #10 (Load on Light illuminated and Load off light extinguished).</p>   | <p>At panel 2C163, depressed LOAD ON push-button (2CB) and released.</p> <p>Observed red "load on" light lit, green "load off" light extinguished.</p>  | N/A SAT UNSAT |
| <b>END</b>            |                     |  |   |               |

STOP TIME: \_\_\_\_\_

JOB PERFORMANCE MEASURE

**EXAMINER'S COPY**

**JPM INITIAL TASK CONDITIONS:**

- Reactor trip circuit breakers 1 through 8 have been verified open.
- Both MG sets are stopped.

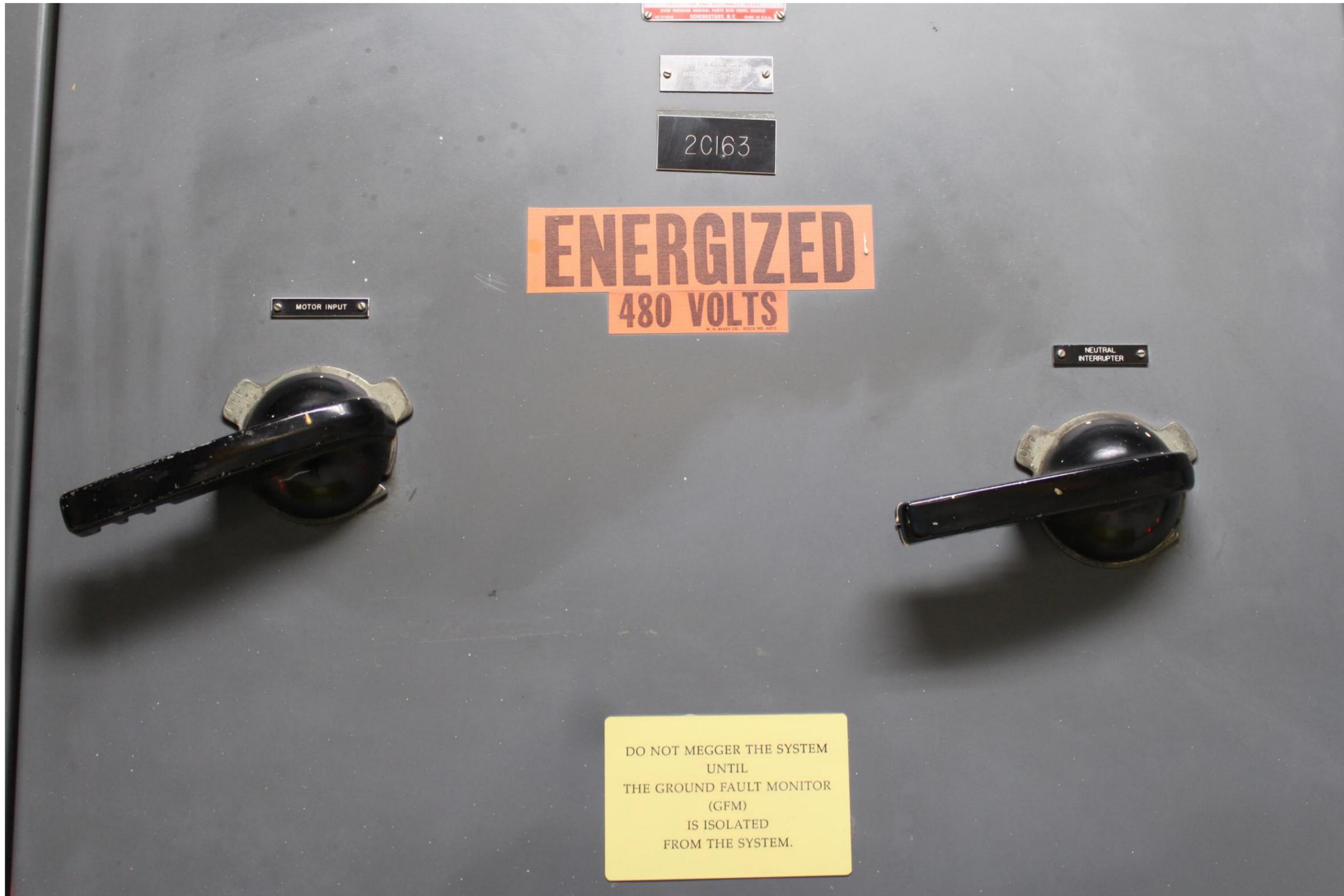
**INITIATING CUE:**

The SM/CRS directs, "Place #1 MG in service using OP 2105.009, Section 7.0."

Picture #1



Picture #2



Picture #3



JOB PERFORMANCE MEASURE

Picture #4



JOB PERFORMANCE MEASURE

Picture #5



Picture #6

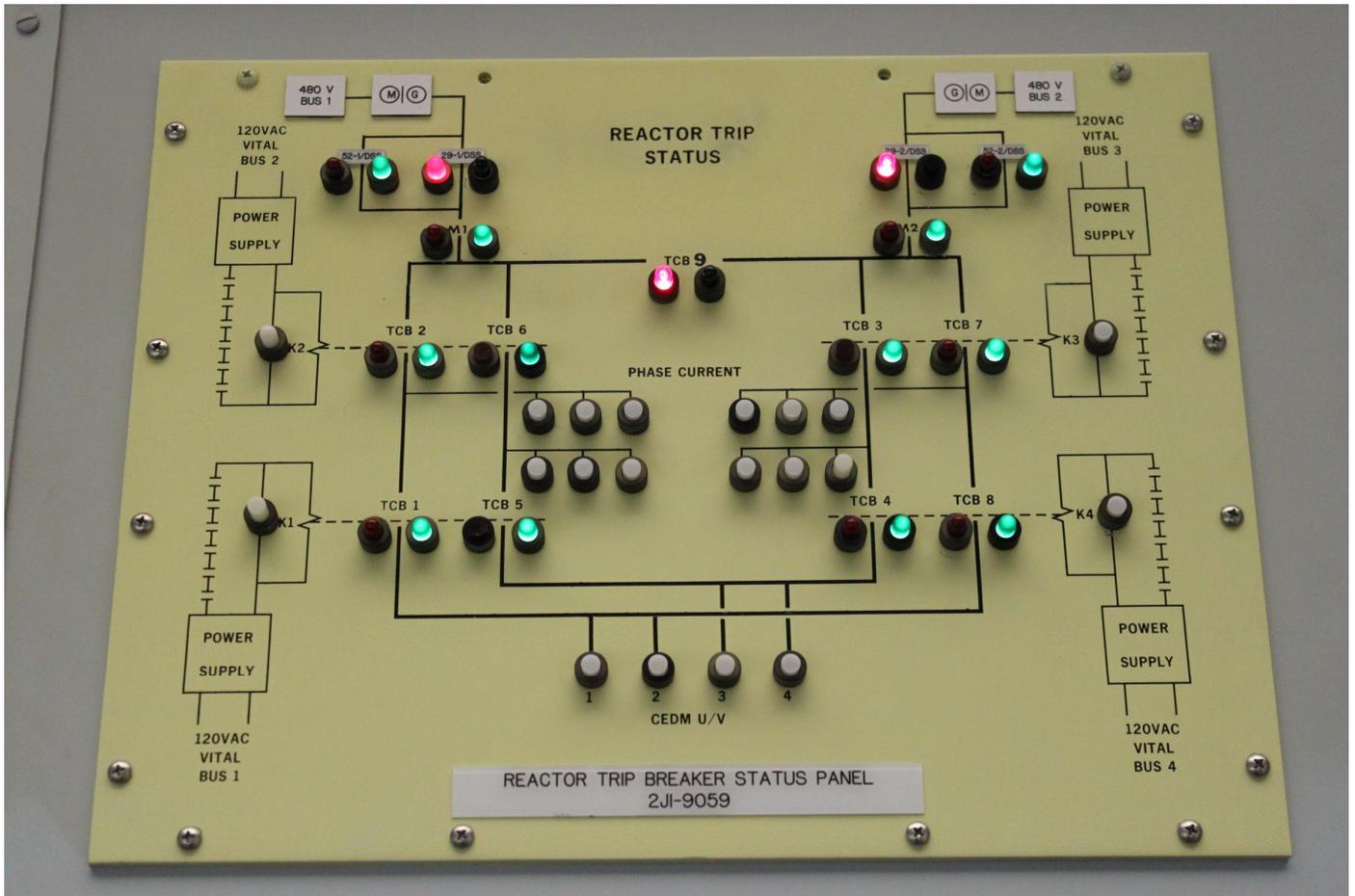


Picture #7



JOB PERFORMANCE MEASURE

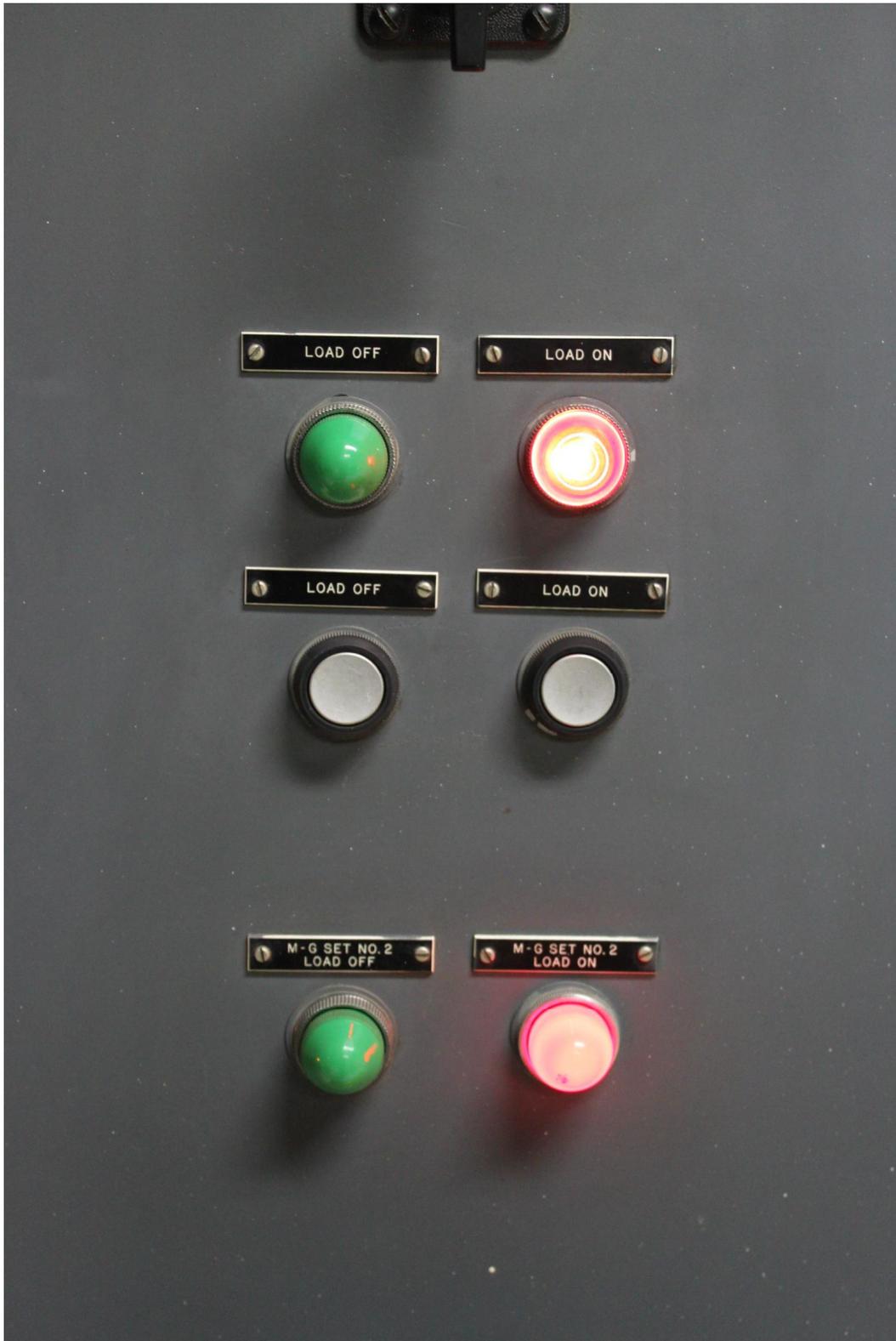
Picture #8



Picture #9



Picture #10



Picture #11



JOB PERFORMANCE MEASURE

Picture #12



JOB PERFORMANCE MEASURE

Picture #13



Picture #14



JOB PERFORMANCE MEASURE

**EXAMINEE'S COPY**

**JPM INITIAL TASK CONDITIONS:**

- Reactor trip circuit breakers 1 through 8 have been verified open.
- Both MG sets are stopped.

**INITIATING CUE:**

The SM/CRS directs, "Place #1 MG in service using OP 2105.009, Section 7.0."

JOB PERFORMANCE MEASURE

UNIT:  2  REV #:  012  DATE: \_\_\_\_\_

SYSTEM/DUTY AREA:  Spent Fuel Pool Cooling System

TASK:  Perform service water emergency makeup to the SFP (with Loop 1 service water)

JTA#:  ANO2-WCO-SFP-EMER1

KA VALUE RO:  3.1  SRO:  3.5  KA REFERENCE:  033 A2.03

APPROVED FOR ADMINISTRATION TO: RO:  X  SRO:  X

TASK LOCATION: INSIDE CR: \_\_\_\_\_ OUTSIDE CR:  X  BOTH: \_\_\_\_\_

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE:  Simulate  SIMULATOR: \_\_\_\_\_ CLASSROOM: \_\_\_\_\_

POSITION EVALUATED: RO: \_\_\_\_\_ SRO: \_\_\_\_\_

ACTUAL TESTING ENVIRONMENT: SIMULATOR: \_\_\_\_\_ PLANT SITE: \_\_\_\_\_ CLASSROOM: \_\_\_\_\_

TESTING METHOD: SIMULATE: \_\_\_\_\_ PERFORM: \_\_\_\_\_

APPROXIMATE COMPLETION TIME IN MINUTES:  20 Minutes

REFERENCE(S):  OP-2104.006 Fuel Pool Systems

EXAMINEE'S NAME: \_\_\_\_\_ Badge #: \_\_\_\_\_

EVALUATOR'S NAME: \_\_\_\_\_

THE EXAMINEE'S PERFORMANCE WAS EVALUATED AGAINST THE STANDARDS CONTAINED IN THIS JPM AND IS DETERMINED TO BE:

SATISFACTORY: \_\_\_\_\_ UNSATISFACTORY: \_\_\_\_\_

PERFORMANCE CHECKLIST COMMENTS:

\_\_\_\_\_  
\_\_\_\_\_

Start Time \_\_\_\_\_ Stop Time \_\_\_\_\_ Total Time \_\_\_\_\_

SIGNED: \_\_\_\_\_ DATE: \_\_\_\_\_

SIGNATURE INDICATES THIS JPM HAS BEEN COMPARED TO ITS APPLICABLE PROCEDURE BY A QUALIFIED INDIVIDUAL (NOT THE EXAMINEE) AND IS CURRENT WITH THAT REVISION.

JOB PERFORMANCE MEASURE

THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:

**The examiner shall ensure that the examinee has been briefed on NUREG 1021 Appendix E.**

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JPM INITIAL TASK CONDITIONS:

**(2K11-K5) "FUEL POOL TEMP HI" is in alarm.**

**Neither fuel pool cooling pump is available.**

**An operator is stationed at the spent fuel pool to monitor spent fuel pool level.**

**Fuel pool level is low.**

**2P66 is aligned to the RWT and running.**

TASK STANDARD:

**Emergency SFP makeup from Loop 1 service water has been initiated.**

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TASK PERFORMANCE AIDS:

**OP 2104.006 Section 14.3.**

**Do not use a cloth lanyard in a Radiologically controlled area.**

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SIMULATOR SETUP:

**N/A**

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JOB PERFORMANCE MEASURE

The CRS directs, "Align Loop 1 service water to provide emergency makeup to the spent fuel pool starting on step 14.3 of OP 2104.006."

START TIME: \_\_\_\_\_

| PERFORMANCE CHECKLIST   |   | STANDARDS   |               | (Circle One) |
|---|---|---|---------------|--------------|
| <b>Examiner Note:</b><br><b>Ladders in the aux building are control by both operations and RP. Operations dept. has keys to the ladders but if access it needed greater than 8' RP must be contacted.</b> |   |   |               |              |
| 1.<br>(Step 14.3.1)   | IF SFP or RWT aligned for Purification, THEN secure Fuel Pool Purification pump 2P-66 (2HS-5411) to prevent rapid depletion of Fuel Pool DI (2T-5) or addition of Service Water to the RWT.<br><br><b>Examiner CUE:</b><br><b>After the pump is simulated to be stopped Report Green light ON, red light OFF.</b> | Locally rotated 2P66 handswitch (2HS-5411) to STOP and released.<br><br>Observed green light ON, red light OFF.       | N/A SAT UNSAT |              |
| <b>TRANSITION NOTE:</b><br><b>Go to elevation 354' RAB, just north of the elevator, to the SFP valve gallery.</b>   |   |   |               |              |
| 2.<br>(Step 14.3.2)   | Verify the following valves closed:<br>Borated MU or RWT to 2P-66 (2FP-32)<br><br><b>Examiner CUE:</b><br><b>2FP-32 stem is fully inserted and resistance is felt.</b>  | Closed 2FP-32 by turning handwheel clockwise and observing valve stem insertion until resistance felt.                | N/A SAT UNSAT |              |
| <b>TRANSITION NOTE:</b><br><b>Go to elevation 335' RAB just off elevator</b>  |   |   |               |              |
| (C) 3.<br>(Step 14.3.2)   | Verify the following valves closed:<br>RWT Recirculation Isolation (2CV-5637-1).<br><br><b>Examiner CUE:</b><br><b>Control room reports 2CV-5637-1 indicates closed.</b><br><b>Or locally at the valve, the stem fully down/inserted.</b>   | Contacted Control Room to close 2CV-5637-1.<br><br>Or<br>Locally at 2CV-5637-1, checked the stem fully down/inserted. | N/A SAT UNSAT |              |

## JOB PERFORMANCE MEASURE

|   |                              |  |   |               |
|---|------------------------------|--|---|---------------|
| (C)   | 4.<br>(Step<br>14.3.2)       | Verify the following valves closed:<br>RWT Recirculation Isolation (2CV-5638-2) closed.<br><br><b>Examiner CUE:</b><br><b>Control room reports 2CV-5638-2 indicates closed.</b><br><b>Or locally at the valve, the stem fully down/inserted.</b> | Contacted Control Room to close 2CV-5638-2.<br><br>Locally at 2CV-5637-1, checked the stem fully down/inserted.   | N/A SAT UNSAT |
| <b>TRANSITION NOTE:</b><br><b>Go to elevation 354' RAB, just north of the elevator, to the SFP valve gallery.</b> |                              |  |   |               |
| (C)   | 5.<br>(Step<br>14.3.3)       | Open Borated MU, RWT, SW to Fuel Pool (2FP-31).<br><br><b>Examiner CUE:</b><br><b>2FP-31 stem is fully extended.</b>   | Opened 2FP-31 by turning handwheel CCW.<br><br>Observed valve stem fully withdrawn out of the valve.  | N/A SAT UNSAT |
| (C)   | 6.<br>(Step<br>14.3.4)       | Open RWT to Fuel Pool Isolation (2FP-46).<br><br><b>Examiner CUE:</b><br><b>2FP-46 stem is fully extended.</b>   | Opened 2FP-46 by turning handwheel CCW.<br><br>Observed valve stem fully withdrawn out of the valve.  | N/A SAT UNSAT |
| <b>TRANSITION NOTE:</b><br><b>Go to elevation 335' RAB just off elevator.</b>                                     |                              |  |   |               |
| (C)   | 7.<br>(Step<br>14.3.5)       | Close SW Header 1 Telltale Drain (2SW-8401).<br><br><b>Examiner CUE:</b><br><b>2SW-8401 has stem inserted into handwheel.</b>  | Closed 2SW-8401 by turning handwheel CW.<br><br>Observed valve stem fully inserted into the valve.  | N/A SAT UNSAT |
|   | 8.<br>(Step<br>14.3.6,<br>A) | Record unlocking of SW Hdr 1 Emerg Feed Isol (2SW-57) in Cat E log.<br><br><b>Examiner CUE:</b><br><b>2SW-57 has been recorded in the Cat E log.</b>   | Contacted the Control Room to recorder 2SW-57 in the Cat E log.   | N/A SAT UNSAT |
| (C)   | 9.<br>(Step<br>14.3.6,<br>B) | Unlock and open SW Header 1 Emergency Feed Isolation (2SW-57).<br><br><b>Examiner CUE:</b><br><b>2SW-57 valve stem is fully extended.</b>  | Unlocked locking device on 2SW-57 using category "E" valve key.<br><br>Opened 2SW-57 by turning handwheel CCW.<br><br>Observed valve stem fully withdrawn out of the valve. | N/A SAT UNSAT |

JOB PERFORMANCE MEASURE

| <b>Procedure Caution:</b>   |                         |  |   |               |
|---|-------------------------|--|---|---------------|
| <ul style="list-style-type: none"> <li>If SFP overfilled, water can spill through SFP Cooling/SFP Purification pipe chase (SFP, ~ 402', SW corner) and contaminate SFP valve gallery (AB 354') and hall near 2F-3A/B (AB 335')</li> <li>If flow introduced with level &gt; 401' 7", some overflow can occur due to wave motion of water.</li> </ul> |                         |  |   |               |
| <b>Procedure Note:</b>  |                         |  |   |               |
| If CLP (2LI-5400) used as SFP level indication during SFP drain and fill evolutions, SFP and CLP levels will differ slightly until water levels equalize through seal area.   |                         |  |   |               |
|   | 10.<br>(Step 14.3.7. A) | IF two Operators available, THEN establish and maintain the following:<br><br>Operator stationed at SFP to continuously monitor level:<br>SFP (2LI-5401)<br>CLP (2LI-5400) if gate removed or deflated<br><br><b>Examiner CUE:</b><br><br><b>Operator is stationed at SFP to monitor level. responds to radio communications.</b>                                  | Verified that an Operator was stationed to monitor SFP level                      | N/A SAT UNSAT |
|   | 11.<br>(Step 14.3.7. B) | Operator stationed at SFP SW Hdr 1 Emerg Feed Isol to SF Pool (2SW-138) for valve adjustment   | Examinee positions self at 2SW-138.   | N/A SAT UNSAT |
|   | 12.<br>(Step 14.3.7. C) | Communications between stationed Operators.<br><br><b>Examiner CUE:</b><br><br><b>Operator that stationed at SFP to monitor level responds to radio communications.</b>  | Examinee establishes communication with Operator stationed at the Spent Fuel Pool | N/A SAT UNSAT |
|   | 13.<br>(Step 14.3.7. D) | *IF level being maintained without frequent valve adjustment, THEN the following may be performed:<br><br>Secure Operator at 2SW-138.<br><br>Reassign remaining Operator to continuously monitor SFP level EXCEPT when 2SW-138 adjustment needed.<br><br><b>Examiner Cue: Operator at SFP will monitor if level can be maintained without frequent adjustments</b> | Examinee assesses level being maintained.   | N/A SAT UNSAT |
| <b>EXAMINERS NOTE:</b>  |                         |  |   |               |
| - Final valve position is at discretion of examinee to ensure level is raised/maintained.   |                         |  |   |               |

JOB PERFORMANCE MEASURE

|            |                         |   |  |               |
|------------|-------------------------|---|--|---------------|
|            | 14.<br>(Step<br>14.3.8) | IF two Operators NOT available,<br>THEN perform the following:<br>Obtain SM/CRS concurrence.<br>Station one Operator to align for<br>fill and continuously monitor level<br>EXCEPT when adjusting valve.            | Determined that two operators are<br>available from initial conditions.  | N/A SAT UNSAT |
| (C)        | 15.<br>(Step<br>14.3.9) | Throttle open SW Header 1<br>Emergency Feed Isolation to SF<br>Pool (2SW-138) between 401'4"<br>and 401'7".<br><br><b>Examiner CUE:</b><br><b>Operator stationed at SFP</b><br><b>reports level raising slowly.</b> | Throttled open 2SW-138 by<br>turning handwheel CCW.<br><br>Observed valve stem withdrawn<br>out of the valve commensurate<br>with valves throttling. | N/A SAT UNSAT |
| <b>END</b> |                         |   |  |               |

**STOP  
TIME:** \_\_\_\_\_

JOB PERFORMANCE MEASURE

**Examiner's Copy**

**JPM INITIAL TASK CONDITIONS:**

(2K11-K5) "FUEL POOL TEMP HI" is in alarm.

Neither fuel pool cooling pump is available.

An operator is stationed at the spent fuel pool to monitor spent fuel pool level.

Fuel pool level is low.

2P66 is aligned to the RWT and running.

**INITIATING CUE:**

The CRS directs, "Align Loop 1 service water to provide emergency makeup to the spent fuel pool starting on step 14.3 of OP 2104.006."

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| Facility: ANO-2   |                                      | Scenario No.: 1 (New)         |  | Op-Test No.: 2012-1 |  |
|---|--------------------------------------|-------------------------------|--|---------------------|--|
| Examiners:  |                                      |                               | Operators:   |                     |  |
|   |                                      |                               |  |                     |  |
|   |                                      |                               |  |                     |  |
| Initial Conditions:<br>~94% power due to Main Steam Line high vibs, MOL, All Engineered Safety Features systems are in standby. #3 and #4 MTG control valve steam lead valves failed closed. Voltage regulator auto tracking circuit is disabled. RED Train Maintenance Week.                                       |                                      |                               |  |                     |  |
| Turnover:<br>~94% power due to Main Steam Line high vibs, 260 EFPD. EOOS indicates 'Minimal Risk'. RED Train Maintenance Week. #3 and #4 MTG control valve steam lead valves failed closed. Voltage regulator auto tracking circuit is disabled.<br>Scheduled Evolution: Swap running Electro Hydraulic (EH) pumps. |                                      |                               |  |                     |  |
| Event No.   | Malf. No.                            | Event Type*                   | Event Description  |                     |  |
| 1   |                                      | N (BOP)<br>N (SRO)            | Shift Electro Hydraulic (EH) pumps   |                     |  |
| 2   | XSI2PT5602                           |                               | Containment pressure transmitter fails high. Tech Spec for SRO.  |                     |  |
| 3   | CWS2P3AFLT                           | C (BOP)<br>R (ATC)<br>C (SRO) | 'A' Circulating Water pump trip.   |                     |  |
| 4   | CV48731                              | C (ATC)<br>C (SRO)            | VCT outlet valve fails to close.   |                     |  |
| 5   | XRCCHAPLVL                           | I (ATC)<br>I (SRO)            | 'A' Pressurizer Level Channel Fails Low. Tech Spec for SRO   |                     |  |
| 6   | K01-A07<br>BUS2A1<br>BUS2A3<br>A309  | M (ALL)                       | 2A-1 bus negative sequence and lockout causing a reactor trip. Also, 2A-3 bus will lockout and the feeder breaker (2A-309) will remain closed. |                     |  |
| 7   | 500LOSE500<br>500LOSE161<br>EFW2P7OS | M (ALL)                       | Loss of Offsite Power and 2P-7A EFW pump overspeed trips causing a complete loss of feedwater.   |                     |  |
| 8   | HPI2P89FAL                           | C (BOP)<br>C (SRO)            | 2P-89B High Pressure Safety Injection pump fails to start SIAS   |                     |  |
| * (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor  |                                      |                               |  |                     |  |

Total malfunctions. = 6, Malfunctions after EOP entry = 2, Abnormal events = 2, Major transient = 2, EOPs with substantive actions = 2, EOP Contingencies = 1, Critical tasks = 3.

### Scenario #1 Objectives

- 1) Evaluate individual ability to transition running Electro Hydraulic (EH) pumps
- 2) Evaluate individual response to a failure of a Containment pressure transmitter.
- 3) Evaluate individual/crew response to a failure of a Circ Water Pump.
- 4) Evaluate individual response the Volume Control Tank outlet valve failure to operate.
- 5) Evaluate individual ability to perform a reduction in plant power.
- 6) Evaluate individual response to a failure for automatic control of Pressurizer level.
- 7) Evaluate individual ability to respond to Degraded Electrical power.
- 8) Evaluate individual ability to mitigate a Loss of Feedwater.
- 9) Evaluate individual ability to monitor operation of Engineered Safety Features equipment.
- 10) Evaluate individual ability to establish once through cooling.

### SCENARIO #1 NARRATIVE

Simulator session begins with the plant at ~94% power steady state due to High Main Steam line vibrations.

When the crew has completed their control room walk down/brief, they will use 2106.012 Electro Hydraulic system operations procedure to swap lead EH pumps.

When EH pumps have been swapped and cued by the lead examiner, a Containment pressure transmitter will fail high. The Crew should refer to the Annunciator corrective action. The SRO should enter Tech Specs 3.3.1.1 RPS and 3.3.2.1 ESF Actuation system instrumentation. The BOP will be required to bypass the Plant Protection System channel 2 for Containment pressure hi (points 13 & 16) and Containment pressure hi-hi (point 17).

After the BOP has completed bypassing the appropriate points and cued by lead examiner; 'A' Circulating Water pump will trip. The SRO will enter Loss of Condenser Vacuum AOP, 2203.019. The SRO will direct the ATC to commence emergency boration from a Boric Acid Makeup tank to lower reactor power. The VCT outlet valve will fail to reposition and the crew must chose an alternate method to add negative reactivity. Alternate methods include starting a Boric Acid Makeup Pump and opening the emergency borate valve, or inserting Control Element Assemblies. The SRO will direct the BOP to lower turbine load to maintain condenser vacuum within the acceptable region described in the AOP. When condenser vacuum has started to improve and is within the acceptable region of the AOP attachment, emergency boration and CEA insertion will be secured. The crew should then prepare to commence a controlled down power to restore condenser vacuum less than 5.15 inches HG Abs.

After emergency boration is secured and cued by the lead examiner, 'A' Pressurizer level channel will fail low causing letdown to go to minimum, all pressurizer heaters to de-energize, all backup charging pumps to start and will raise actual pressurizer level. The SRO will enter Pressurizer Systems Malfunction AOP, OP 2203.028. The ATC will place letdown in manual to control flow and pressurizer level. The ATC will then select the unaffected pressurizer level channel for control of letdown, charging, and pressurizer heater control. After the unaffected pressurizer level channel is selected the ATC will restore letdown control to automatic. The SRO will enter Tech Spec 3.3.3.6 Post Accident Instrumentation.

**SCENARIO #1 NARRATIVE (continued)**

After letdown has been restored to automatic and cued by the lead examiner, 2A-1 (4160V bus) will have a negative sequence event that causes a bus lockout. When the 2A-1 bus lockout occurs damage will also occur to the 2A-1/2A-3 tie breaker propagating the fault to 2A-3 and a 2A-3 bus lockout. The crew should recognize the 2A-1 bus lock out has reduced the number of available condensate pumps to 2 which will require a reactor trip (Feedwater can not maintain Steam Generator level), then trip the reactor.

The Crew will implement Standard Post Trip Actions (SPTA), OP 2202.001. When the Reactor trips a Loss of Offsite Power will occur and when 2P-7A Emergency Feedwater pump starts, it will overspeed trip causing a complete loss of feedwater. The BOP will close Main Steam Isolation Valves (MSIVs) due to a loss of power causing overcooling. The crew should attempt to open 2A-309 to remove the fault from 2A-3 but due to damage it will not open and can not be racked down. The ATC will align for aux spray to control RCS pressure during the heat up caused by closing the MSIVs. The BOP will isolate Steam Generator (SG) blowdown to conserve SG inventory. The BOP should align upstream atmospheric dump isolation valve to control SG pressure 950 to 1050 psia.

The SRO will diagnose Loss of Feedwater EOP, 2202.006. The SRO will direct energizing the LTOP relief isolation valves and commence trying to restore Feedwater to the Steam Generators. 2P-7A EFW pump will not be able to be reset, 2P-7B EFW pump will be unavailable due to 2A-3 being de-energized, 2P-75 AFW pump is unavailable due to the 2A-1 lockout, Main Feedwater and Condensate pumps are not available due to the loss of offsite power. The Crew will align for once through cooling and transition to the Functional Recovery EOP, 2202.009. When SIAS is actuated 2P-89B HPSI pump will fail to auto start. The BOP should start 2P-89C or 2P-89B HPSI pump. The ATC will align 2P-36C charging pump to green train power and start the pump.

### Simulator Instructions for Scenario 1

Reset simulator to MOL 94% power IC stead state.

Ensure that AACG is secured and annunciators clear.

Place MINIMAL RISK, Green Train Protected and RED Train Maintenance Week signs on 2C11.

2P-89C aligned to green train.

T1, T2, T3, T4, & T5 set to false.

T5 = Reactor trip

| Event No. | Malf. No.   | Value/<br>Ramp<br>Time                               | Event<br>Description   |
|-----------|---|--|--|
| 1         |   |  | Shift Electro Hydraulic (EH) pumps   |
| 2         | XSI2PT5602<br>Trigger = T1                              | 27   | Containment pressure transmitter fails high. Tech Spec for SRO.  |
| 3         | CWS2P3AFLT<br>Trigger = T2                              | True   | 'A' Circulating Water pump trip.   |
| 4         | CV48731   | 1  | VCT outlet valve fails to close.   |
| 5         | XRCCHAPLVL<br>Trigger = T3                              | 0%   | 'A' Pressurizer Level Channel Fails Low. Tech Spec for SRO   |
| 6         | K01-A07<br>BUS2A1<br>BUS2A3<br><br>A309<br>Trigger = T4 | On<br>True/<br>Delay = 2<br>min.<br>Locked<br>closed | 2A-1 bus negative sequence and lockout causing a reactor trip. Also, 2A-3 bus will lockout and the feeder breaker (2A-309) will remain closed. |
| 7         | 500LOSE500<br>500LOSE161<br>EFW2P7OS<br>Trigger = T5    | True<br>True<br>True                                 | Loss of Offsite Power and 2P-7A EFW pump overspeed trips causing a complete loss of feedwater.   |
| 8         | HPI2P89BFAL   | True   | 2P-89B High Pressure Safety Injection pump fails to start SIAS   |

| <b>Simulator Operator CUEs</b>   |            |  |
|--|------------|--|
|  |            | Shift Electro Hydraulic (EH) pumps   |
| <p><b>Cue: If requested as IAO, report that you are standing by at the EH pump ready to raise pressure as required.</b></p> <p><b>Cue: When 2P-14B is started wait ~ 15 sec, report that 2P-14B is running sat with discharge pressure is 1650 psi.</b></p> <p><b>Cue: When 2P-14A is secured wait ~ 15 sec, report that 2P-14A secured sat.</b></p> <p><b>Cue: When requested report that 2PI-9674 is reading 1600 psi.</b></p>   |            |  |
| Cued by lead examiner  | Trigger T1 | Containment pressure transmitter fails high. Tech Spec for SRO.  |
| <p><b>Cue: If requested as the WWM, then report that I&amp;C will start planning a package to troubleshoot the failed instrument.</b></p>  |            |  |
| Cued by lead examiner  | Trigger T2 | 'A' Circulating Water pump trip. Also the VCT outlet valve fails to close.   |
| <p><b>Cue: When contacted as the OAO, then report that 2P-3A has an acrid odor.</b></p> <p><b>Cue: When contacted as the IAO, then report the 2P-3A has over current drop flags.</b></p> <p><b>Cue: If contacted as the IAO to status B vacuum pump, then report the 2C-5B is running sat.</b></p> <p><b>Cue: When contacted as chemistry, then report that chemistry will sample for iodine at the time requested.</b></p> <p><b>Cue: If requested to open steam lead valve 2CV-0253 then acknowledge request and have the booth operator open 2CV-0253 after 3 min.</b></p> <p><b>Cue: If contacted as the WCO, then report that 2CV-4873-1 motor is turning but the stem does not moving to be moving.</b></p> <p><b>Cue: When contacted as the WWM, then report that a planner will begin planning work on 2P-3A.</b></p>  |            |  |
| Cued by lead examiner  | Trigger T3 | 'A' Pressurizer Level Channel Fails Low. Tech Spec for SRO   |
| <p><b>Cue: If requested as the WWM, then report that I&amp;C will start planning a package to troubleshoot the failed instrument.</b></p>  |            |  |
| Cued by lead examiner  | Trigger T4 | 2A-1 bus negative sequence and lockout causing a reactor trip. Also, 2A-3 bus will lockout and the feeder breaker (2A-309) will remain closed. |
| <p><b>Cue: If contacted as the IAO, then wait ~ 2 minutes report the 2A-1 bus lockout relay is tripped and there is an acrid odor but no fire or smoke present.</b></p> <p><b>Cue: If contacted as the IAO, then wait ~ 2 minutes report the 2A-3 bus lockout relay is tripped and there is an acrid odor but no fire or smoke present.</b></p> <p><b>Cue: If contacted as the IAO to secure #1 EDG, then acknowledge the request and have the booth operator place #1 EDG in local lockout.</b></p> <p><b>Cue: If contacted as the STA to report to the control room, acknowledge the request.</b></p> <p><b>Cue: If contacted as a NLO to perform Attachment 47 Field Operator Post Trip Actions, acknowledge request.</b></p> <p><b>Cue: When contacted as a NLO to close the LTOP relief isol valves, after 2 min have the booth operator close the LTOP breakers, then report the 2B51-E4, and 2B51-K2 are closed.</b></p> <p><b>Cue: If contacted as a NLO to assess 2A-309, report that 2A-309 is closed and the breaker has been damaged.</b></p> <p><b>Cue: If requested as a NLO to locally operate 2A-309, report that it will not open and can not be racked down.</b></p> |            |  |
| Reactor trip   | Trigger T5 | Loss of Offsite Power and 2P-7A EFW pump overspeed trips causing a complete loss of feedwater.   |

**Cue: If contacted as the WCO, report that 2P-7A has a governor valve casing is cracked, and there is no oil in the turbine casing.**

2P-89B High Pressure Safety Injection pump fails to start SIAS

**Cue: If requested as IAO, then report that 2P-89B HPSI pump breaker looks normal and has no drop flags.**

**Cue: If requested as WCO, then report that 2P-89B HPSI pump post start checks are satisfactory.**

| Op-Test No.: 2012-1  |          | Scenario No.: 1                 |  | Event No.: 1 |  |
|--|----------|---------------------------------|--|--------------|--|
| Event Description: Shift Electro Hydraulic (EH) pumps  |          |                                 |  |              |  |
| Time   | Position | Applicant's Actions or Behavior |  |              |  |
| Procedure Note:  |          |                                 |  |              |  |
| <ul style="list-style-type: none"> <li>• When performing first pump swap after system startup, a larger than normal pressure drop could occur when running pump is secured if pressure compensator for oncoming pump was adjusted with turbine offline.</li> <li>• Throttling Pressure Compensator Control valve CLOSED will RAISE pressure.</li> <li>• Throttling Pressure Compensator Control valve OPEN will LOWER pressure.</li> </ul> |          |                                 |  |              |  |
|  | ANY      | 8.1                             | Station operator with hand held radio locally to monitor system AND prepared to raise pressure if required.  |              |  |
| <b>Cue: If requested as IAO, report that you are standing by at the EH pump ready to raise pressure as required.</b>   |          |                                 |  |              |  |
|  | BOP      | 8.3                             | IF starting 2P-14B and securing 2P-14A, THEN perform the following:<br>8.3.1 Start EHC Pump 2P-14B (2HS-9651).   |              |  |
| <b>Cue: When 2P-14B is started wait ~ 15 sec, report that 2P-14B is running sat with discharge pressure is 1650 psi.</b>   |          |                                 |  |              |  |
|  | BOP      | 8.3.2                           | IF pressure adjustment required to obtain 2P-14B discharge pressure (2PI-9679) > 1550 psig, THEN adjust using 2P-14B Pressure Compensator (2EH-30).<br><b>Examiner note: Pressure adjustment not required.</b> |              |  |
|  | BOP      | 8.3.3                           | Secure EHC Pump 2P-14A (2HS-9650).   |              |  |
| <b>Cue: When 2P-14A is secured wait ~ 15 sec, report that 2P-14A secured sat.</b>  |          |                                 |  |              |  |
|  | BOP      | 8.3.4                           | IF pressure adjustment required to obtain EH Header pressure (2PI-9674) 1580 to 1620 psig, THEN adjust using 2P-14B Pressure Compensator (2EH-30).   |              |  |
| <b>Cue: When requested report that 2PI-9674 is reading 1600 psi.</b>   |          |                                 |  |              |  |
| <b>Termination criteria: EH pumps shifted or at lead examiner's discretion.</b>  |          |                                 |  |              |  |

| Op-Test No.: 2012-1  |  |          | Scenario No.: 1 |   |  | Event No.: 2 |  |  |
|--|--|----------|-----------------|---|--|--------------|--|--|
| Event Description: Containment pressure transmitter fails high. Tech Spec for SRO. |  |          |                 |   |  |              |  |  |
| Time   |  | Position |                 | Applicant's Actions or Behavior   |  |              |  |  |
| Cued by lead examiner  |  | ANY      |                 | Announce annunciators:<br>2K04-A5 CH B RPS/ESF/PRETRIP/TRIP<br>2K04-B3 PPS Channel TRIP   |  |              |  |  |
|  |  | ANY      |                 | Report Hi containment pressure and Hi/Hi Containment pressure pretrip/trip on PPS insert.<br><br>Also, report channel 2 Containment pressure reading 27 psia.   |  |              |  |  |
|  |  | BOP      |                 | Compare all four channels of Containment pressure.  |  |              |  |  |
|  |  | SRO      |                 | Implement Annunciator Corrective Action 2203.012D.<br>2K04-A5 CH B RPS/ESF/PRETRIP/TRIP applicable actions:<br>2.1 Refer to PPS insert on 2C03 to determine cause.<br>2.2 Compare all Channels to validate alarm.<br>2.6 <u>IF</u> channel failed,<br><u>THEN</u> refer to Tech Specs 3.3.1.1, 3.3.2.1, 3.3.3.5, 3.3.3.6, and TRM 3.3.1.1.<br><br>2K04-B3 PPS Channel TRIP applicable actions:<br>2.1 Determine which RPS or ESFAS trips have occurred on PPS inserts.<br>2.3 <u>IF</u> channel failed,<br><u>THEN</u> refer to Tech Specs 3.3.1.1 and 3.3.2.1 and TRM 3.3.1.1. |  |              |  |  |
|  |  | SRO      |                 | Enter Tech <b>3.3.1.1, and 3.3.2.1.</b><br><br><b>Examiner Note: SRO must enter Tech Spec 3.3.1.1 action 2 and Tech Spec 3.3.2.1 action 10.</b>   |  |              |  |  |
|  |  | SRO      |                 | Direct BOP to bypass bistable points for the associated functional units: Containment Pressure Hi (Bistable 13, 16, and 17).  |  |              |  |  |

|   |     |   |
|---|-----|---|
|   | BOP | <p>Bypass point 13, 16, and 17 on PPS Channel B:</p> <p>11.1 Refer to Tech Spec 3.3.1.1, 3.3.2.1, 3.3.3.5, 3.3.3.6 and TRM 3.3.1.1.</p> <p>11.2 Circle channel and functional units (points) to be bypassed below:<br/> Channel to be bypassed: A (B) C D<br/> Points to be bypassed:<br/> 1 2 3 4 5 6 7 8 9 10 11 12 (13 16 17) 18 19 20</p> <p>11.3 Enter appropriate Tech Spec/TRM actions.</p> <p>11.4 Verify points to be bypassed <u>NOT</u> bypassed in ANY other channel.</p> <p>11.5 Place desired points in BYPASS for selected channel on 2C23.</p> <p><b>Examiners Note: Key 12 required.</b></p> |
|   | ANY | <p>Verify annunciator 2K04-C3 PPS CHANNEL BYPASSED</p> <p>Verify correct channels in bypass.</p>  |
|   | SRO | Contact work management.  |
| <p><b>Cue: If requested as the WWM, then report that I&amp;C will start planning a package to troubleshoot the failed instrument.</b></p> |     |   |
| <p><b>Termination criteria: Affected channel points placed in bypass or at lead examiner's discretion.</b></p>                            |     |   |

| Op-Test No.: 2012-1   |          |  | Scenario No.: 1 |  |  | Event No.: 3 & 4 |  |  |
|---|----------|--|-----------------|--|--|------------------|--|--|
| Event Description: 'A' Circulating Water pump trip. Also the VCT outlet valve fails to close. |          |  |                 |  |  |                  |  |  |
| Time  | Position | Applicant's Actions or Behavior  |                 |  |  |                  |  |  |
| Cued by Lead Examiner   | ANY      | Announce annunciator:<br>2K12-A9 CIRC WTR SYS POTENTIAL FAILURE.   |                 |  |  |                  |  |  |
|   | ANY      | Report 2P-3A is tripped and the discharge valve is closing / closed.   |                 |  |  |                  |  |  |
|   | SRO      | Enter and implement 2203.019 Loss of Condenser Vacuum AOP.   |                 |  |  |                  |  |  |
|   | SRO      | <ol style="list-style-type: none"> <li>1. Open Placekeeping page.</li> <li>2. Notify Control Board Operators to monitor floating steps.</li> <li>3. Check procedure entered due to loss of OR reduced Circulating Water flow.</li> </ol>   |                 |  |  |                  |  |  |
|   | ANY      | <ol style="list-style-type: none"> <li>4. Verify Circ Water pump operation as follows: <ul style="list-style-type: none"> <li>• At least ONE Circ Water pump (2P3A/B) running.</li> <li>• ANY stopped Circ Water Pump associated Discharge valve closed:<br/> <div style="display: flex; justify-content: space-around; margin-top: 5px;"> <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">2P-3A 2CV-1224</span> <span>2P-3B 2CV-1215</span> </div> </li> </ul> </li> </ol> |                 |  |  |                  |  |  |
| <b>Cue: When contacted as the OAO, then report that 2P-3A has an acrid odor.</b>              |          |  |                 |  |  |                  |  |  |
| <b>Cue: When contacted as the IAO, then report the 2P-3A has over current drop flags.</b>     |          |  |                 |  |  |                  |  |  |
|   | ANY      | ■5. Check Condenser Vacuum less than 7 inches HG Abs.  |                 |  |  |                  |  |  |
|   | ANY      | ■6. Check condenser Vacuum less than 5.3 inches HG Abs.<br><b>Examiner note:</b> Condenser Vacuum will trend > 5.3 inches HG Abs. (perform contingency)  |                 |  |  |                  |  |  |
|   | SRO      | Direct Step 6 Contingencies.<br>■6. IF Condenser pressure greater than 5.3 inches HG Abs,<br>THEN perform the following:   |                 |  |  |                  |  |  |
|   | ATC      | A. Commence Emergency Boration using 2202.010 Exhibit 1.   |                 |  |  |                  |  |  |

|   |   |   |    |  |  |
|---|---|---|----|--|--|
| Op-Test No.: 2012-1   |   | Scenario No.: 1   |    | Event No.: 3 & 4   |  |
| Event Description: 'A' Circulating Water pump trip. Also the VCT outlet valve fails to close. |   |   |    |  |  |
| Emergency<br>Boration   | ATC   | 1. Select ONE of the following Emergency Boration flowpaths:  |    |  |  |
|   |   | <b>FLOWPATH</b>   |    | <b>ACTIONS REQUIRED</b>  |  |
|   |   | A. Gravity Feed   | A. | Verify at least ONE BAM Tank Gravity Feed valve open: <ul style="list-style-type: none"> <li>• 2CV-4920-1</li> <li>• 2CV-4921-1</li> </ul>     |  |
|   |   | B. BAM pumps pump.  | B. | 1) Start at least ONE BAM<br>2) Open Emergency Borate valve (2CV-4916-2).<br>3) Verify Boric Acid Makeup Flow Control valve (2CV-4926) closed. |  |
|   |   | C. RWT to Charging pumps  | C. | Open Charging Pump Suction Source From RWT valve (2CV-4950-2).   |  |
|   | <b>Examiner Note: Gravity Feed is the normal method used for a Circulating water pump trip.</b> |   |    |  |  |
|   | ATC   | 2. Close VCT Outlet valve (2CV-4873-1).   |    |  |  |
|   | <b>Examiner Note: The VCT outlet valve will not close and ATC should perform step 3.</b>        |   |    |  |  |
|   | ATC   | Recognize the VCT outlet valve does not close.  |    |  |  |
|   | ATC   | 3. <u>IF</u> VCT Outlet valve does <u>NOT</u> close, <u>THEN</u> verify BAM Pumps Emergency Boration flowpath selected.   |    |  |  |
|   | ATC   | 4. Verify Reactor Makeup Water Flow Control valve (2CV-4927) closed.  |    |  |  |
|   |   | 5. Verify at least ONE Charging pump running and charging header flow greater than 40 gpm.  |    |  |  |
|   |   | 6. Verify charging header flow greater than 40 gpm by either of the following: <ul style="list-style-type: none"> <li>• 2FIS-4863 Disch Flow (2C09)</li> <li>• Computer Point F4863 (PDS, PMS or SPDS)</li> </ul> |    |  |  |

|  |                 |   |
|--|-----------------|---|
| Op-Test No.: 2012-1  | Scenario No.: 1 | Event No.: 3 & 4  |
| Event Description: 'A' Circulating Water pump trip. Also the VCT outlet valve fails to close.                                |                 |   |
| <b>Cue: If contacted as the WCO, then report that 2CV-4873-1 motor is turning but the stem does not moving to be moving.</b> |                 |   |
| <b>Cue: When contacted as the WWM, then report that a planner will begin planning work on 2P-3A.</b>                         |                 |   |
|  | BOP             | B. Reduce Turbine Load to maintain Condenser Pressure within acceptable region of Attachment A, Backpressure Limits.  |
|  | BOP             | C. Maintain RCS Tc less than 554.7°F, refer to TS 3.2.6 Reactor Coolant System Cold Leg temperature.  |
|  | ATC             | D. IF CEA insertion necessary to maintain Tc less than 554.7°F, THEN insert Group 6 or Group P CEAs using 2105.009 Exhibit 3 while maintaining CEAs in Acceptable region of COLR.   |
|  | ATC             | E. WHEN Condenser Vacuum improving and maintained within Acceptable region of Attachment A, Backpressure Limits, THEN secure Emergency Boration.  |
| Steps to secure Emergency Boration   | ATC             | <u>NOTE</u><br>Reactor Engineering assistance may be required to determine shutdown margin.   |
|  |                 | <p>7. WHEN boron concentration greater than minimum required for shutdown margin, THEN perform the following:</p> <p>A. Verify VCT level <math>\geq</math> 20%.</p> <p>B. Place VCT Outlet valve (2CV-4873-1) in AUTOMATIC.</p> <p>C. WHEN 2CV-4873-1 open, THEN perform the following:</p> <ol style="list-style-type: none"> <li>1) Verify BOTH BAM pumps secured.</li> <li>2) Verify the following valves closed: <ul style="list-style-type: none"> <li>• 2CV-4920-1</li> <li>• 2CV-4921-1</li> <li>• 2CV-4916-2</li> </ul> </li> <li>3) IF 2CV-4950-2 was opened, THEN place handswitch in AUTOMATIC and check that valve closes.</li> </ol> |
|  | ATC             | F. Commence a power reduction using 2102.004 power operations until condenser pressure is less than 5.15 inches HG Abs.   |
|  | SRO             | *7. Check RCS pressure 2025 to 2275 psia.   |
|  | ANY             | *8. Check RCS TC 542 to 554.7°F using CPC PID 5, 6, 160, or 161.  |

|  |     |                 |   |
|--|-----|-----------------|---|
| Op-Test No.: 2012-1  |     | Scenario No.: 1 | Event No.: 3 & 4  |
| Event Description: 'A' Circulating Water pump trip. Also the VCT outlet valve fails to close.  |     |                 |   |
| <b>Cue: If contacted as the IAO to status B vacuum pump, then report the 2C-5B is running sat.</b>   |     |                 |   |
|  | ANY | *9.             | Maintain ASI within limits as specified in Core Operating Limits Report (COLR).   |
|  | ANY | *10.            | Check CEA positions as follows:<br>A. ALL Regulating Group 6 CEAs greater than 112.5 inches withdrawn.<br>B. ALL Regulating Group 1 through 5 CEAs fully withdrawn.<br>C. ALL Group P CEAs greater than 135 inches withdrawn.             |
|  | ANY | *11.            | Check PZR level within 5% of setpoint.  |
|  | ANY | 12.             | Notify Chemistry to perform the following:<br>A Sample for RCS Iodine within 2 to 6 hours following Reactor power change greater than 15% in any one hour, refer to TS 3.4.8, Specific Activity.<br>B Monitor Secondary system chemistry. |
| <b>Cue: When contacted as chemistry, then report that chemistry will sample for iodine at the time requested.</b>                          |     |                 |   |
| <b>Cue: If requested to open steam lead valve 2CV-0253 then acknowledge request and have the booth operator open 2CV-0253 after 3 min.</b> |     |                 |   |
|  | SRO | 13.             | Perform the following as directed by Operations Management:<br>• Maintain Plant conditions using 2102.004, Power Operation.<br>• Perform Plant Shutdown using 2102.004, Power Operation.  |
| <b>Cue: When contacted as the WWM, then report that a planner will begin planning work on 2P-3A.</b>                                       |     |                 |   |
| <b>Termination criteria: When emergency boration has been secured or at lead examiner's discretion.</b>                                    |     |                 |   |





| Op-Test No.: 2012-1  | Scenario No.: 1 | Event No.: 6, 7 & 8  |
|--|-----------------|--|
| <p>Event Description: 2A-1 bus negative sequence and lockout causing a reactor trip. Also, 2A-3 bus will lockout and the feeder breaker (2A-309) will remain closed. Loss of Offsite Power and 2P-7A EFW pump overspeed trips causing a complete loss of feedwater. 2P-89B High Pressure Safety Injection pump fails to start SIAS</p> |                 |  |
| Time   | Position        | Applicant's Actions or Behavior  |
| Vital Auxiliaries safety function  | BOP             | <p>D. Check the following valves closed:</p> <ul style="list-style-type: none"> <li>• MSR 2E-12A Steam Supply From SG A (2CV-0400) (<b>Not met, perform contingency</b>)</li> <li>• MSR 2E-12B Steam Supply From SG B (2CV-0460) (<b>Not met, perform contingency</b>)</li> </ul> <p>Step D. contingency actions.</p> <p>D. Close MSIVs:</p> <ul style="list-style-type: none"> <li>• 2CV-1010-1</li> <li>• 2CV-1060-2</li> </ul>  |
| Vital Auxiliaries safety function  | BOP             | <p>E. At least ONE 6900v AC bus energized. (<b>Not met</b>)</p> <p>F. At least ONE 4160v Non-vital AC bus energized. (<b>Not met</b>)</p> <p>G. BOTH 4160v Vital AC buses energized. (<b>2A-4 Vital bus will be energized but 2A-3 will not be energized due to the feeder breaker failure.</b>)</p> <p>H. BOTH DGs secured. (<b>Both DGs will be running, Service water will be aligned to #2 EDG and after #1 EDG will not have service water aligned.</b>)</p> <p><b>Examiner note: Service Water pressure low alarm will be in for #2 EDG the crew may elect to throttle service water to component cooling water or service water to auxiliary cooling water.</b></p> <p><b>Examiner note: The SRO may discuss Tech Spec 3.8.1.1 for offsite power sources.</b></p> |
| <p><b>Critical Step:</b><br/>Secure #1 EDG prior to completion of the Drill.</p>   | BOP/SRO         | <p>Step H. contingency actions.</p> <p>H. IF ANY DG running AND SW NOT aligned, THEN locally stop DG by unlocking and placing "ENGINE CONTROL" handswitch in LOCKOUT:</p> <ul style="list-style-type: none"> <li>• 2E11</li> <li>• 2E21</li> </ul> <p><b>Examiner note #1 EDG must be locally placed in Lockout.</b></p>   |
| <p><b>Cue: If contacted as the IAO to secure #1 EDG, then acknowledge the request and have the booth operator place #1 EDG in local lockout.</b></p>   |                 |  |





| Op-Test No.: 2012-1  | Scenario No.: 1 | Event No.: 6, 7 & 8   |
|--|-----------------|---|
| <p>Event Description: 2A-1 bus negative sequence and lockout causing a reactor trip. Also, 2A-3 bus will lockout and the feeder breaker (2A-309) will remain closed. Loss of Offsite Power and 2P-7A EFW pump overspeed trips causing a complete loss of feedwater. 2P-89B High Pressure Safety Injection pump fails to start SIAS</p> |                 |   |
| Time   | Position        | Applicant's Actions or Behavior   |
| RCS Heat Removal Safety Function   | ANY             | <p>E. Perform as necessary:</p> <ol style="list-style-type: none"> <li>2) Verify SDBCS restoring SG pressure 950 psia to 1050 psia using 2105.008 Exhibit 3, SDBCS Emergency Operation.</li> <li>4) IF SG pressure greater than 1050 psia, THEN check MSSVs operating to control SG pressure 1050 psia to 1100 psia.</li> </ol>   |
| Containment Safety Function  |                 | <p>9. Check CNTMT parameters:</p> <p>A. Temperature and Pressure:</p> <ul style="list-style-type: none"> <li>• Temperature less than 140°F.</li> <li>• Pressure less than 16 psia.</li> </ul> <p>B. Check CNTMT Spray pumps secured.</p> <p>C. NO CNTMT radiation alarms or unexplained rise in activity:</p> <ol style="list-style-type: none"> <li>1) CAMS alarms: <ul style="list-style-type: none"> <li>• "CNTMT PART/GAS RAD HI/LO" annunciator (2K10-B6) clear.</li> </ul> </li> <li>2) RCS leakage alarms: <ul style="list-style-type: none"> <li>• "AREA RADIATION HI/LO" annunciator (2K11-B10) clear.</li> <li>• "PROC LIQUID RADIATION HI/LO" annunciator (2K11-C10) clear.</li> </ul> </li> <li>3) Check the following radiation monitors trend stable: <ul style="list-style-type: none"> <li>• CNTMT Area</li> <li>• CAMS</li> <li>• Process Liquid</li> </ul> </li> </ol> <p>D. NO secondary system radiation alarms or unexplained rise in activity:</p> <ol style="list-style-type: none"> <li>1) "SEC SYS RADIATION HI" annunciator (2K11-A10) clear.</li> <li>2) Secondary Systems Radiation monitors trend stable: <ul style="list-style-type: none"> <li>• Main Steam lines</li> <li>• SG Sample</li> <li>• Condenser Off Gas</li> </ul> </li> </ol> |

| Time  | Position | Applicant's Actions or Behavior  |
|---|----------|--|
| Op-Test No.: 2012-1   |          |  |
| Scenario No.: 1   |          |  |
| Event No.: 6, 7 & 8   |          |  |
| Event Description: 2A-1 bus negative sequence and lockout causing a reactor trip. Also, 2A-3 bus will lockout and the feeder breaker (2A-309) will remain closed. Loss of Offsite Power and 2P-7A EFW pump overspeed trips causing a complete loss of feedwater. 2P-89B High Pressure Safety Injection pump fails to start SIAS |          |  |
|   | SRO      | 10. Notify STA to report to control room.<br>11. Direct NLOs to perform 2202.010 Attachment 47, Field Operator Post Trip Actions.<br>12. Verify Reactor trip announced on Plant page.<br>13. Notify SM to refer to Technical Specifications and 1903.010, Emergency Action Level Classification.   |
| <b>Cue: If contacted as the STA to report to the control room, acknowledge the request.<br/>           Cue: If contacted as a NLO to perform Attachment 47 Field Operator Post Trip Actions, acknowledge request.</b>   |          |  |
|   | SRO      | 14. Direct control board operators to acknowledge ALL annunciators and announce ALL critical alarms.   |
|   | SRO      | 15. Check ALL safety function acceptance criteria satisfied. ( <b>All safety functions are not satisfied, perform contingency</b> )<br>15. <u>IF ANY</u> safety function acceptance criteria <u>NOT</u> satisfied, <u>THEN</u> perform the following:<br>A. Notify control room staff of safety functions <u>NOT</u> satisfied.<br>B. GO TO Exhibit 8, Diagnostic Actions. |
|   | SRO      | Diagnose Loss of Feedwater EOP 2202.006.   |
|   | SRO      | Enter and implement Loss of Feedwater EOP 2202.006.  |
|   | SRO      | Direct STA to perform the following:<br>*1. Confirm diagnosis of Loss Of Feedwater by checking SFSC acceptance criteria satisfied every 15 minutes.  |
|   | SRO      | *2. Notify SM to refer to Technical Specifications and 1903.010, Emergency Action Level Classification.  |
|   | SRO      | 3. Open Placekeeping page.   |
|   | SRO      | 4. Notify Control Board Operators to monitor floating steps.   |
|   | ATC      | 5. Reduce RCS heat input as follows:<br>A. Stop ALL RCPs.<br>B. Verify BOTH PZR Spray valves in MANUAL and closed.   |
| <b>Examiner note: These actions should already be complete.</b>   |          |  |

| Time  | Position | Applicant's Actions or Behavior  |
|---|----------|--|
|   | BOP      | 6. Conserve SG inventory as follows:<br><br>A. Verify SG Blowdown Isolation valves closed:<br><br><ul style="list-style-type: none"> <li>• 2CV-1016-1</li> <li>• 2CV-1066-1</li> </ul> B. Verify SG Sample valves closed.<br><br><ul style="list-style-type: none"> <li>• 2CV-5850</li> <li>• 2CV-5858</li> <li>• 2CV-5852-2</li> <li>• 2CV-5859-2</li> </ul>  |
|   | BOP      | ■ 7. Check ALL AC and Vital DC buses energized.<br><br><b>Examiner note: not all buses are energized the SRO should go to the contingency.</b>   |
|   | BOP/SRO  | ■ 7. Perform the following:<br><br>A. IF BOTH 4160v Non-vital buses 2A1 and 2A2 NOT energized from offsite power, THEN verify MSIVs closed.<br><br>B. IF ANY AC bus de-energized, THEN commence power restoration using 2202.010 Attachment 11, Degraded Power.<br><br>C. IF ANY Vital DC bus de-energized, THEN commence power restoration using 2203.037, Loss of 125v DC.<br><br><b>Examiner note: The SRO should review attachment 11 but power can not be restored.</b> |
| <b>Critical Task:</b><br><br>Maintain RCS pressure within PT limit 30 to 200 degrees MTS. | ATC      | *8. Maintain RCS pressure 1800 psia to 2250 psia using 2202.010 Attachment 48, RCS Pressure Control.<br><br><b>Examiner note: RCS pressure must be maintain within the PT limits 30 to 200 degrees Margin To Sat. (MTS) and less than 2500 PSIA until once through cooling is established.</b>   |

| Time  | Position | Applicant's Actions or Behavior  |
|---|----------|--|
| Op-Test No.: 2012-1   |          |  |
| Scenario No.: 1   |          |  |
| Event No.: 6, 7 & 8   |          |  |
| Event Description: 2A-1 bus negative sequence and lockout causing a reactor trip. Also, 2A-3 bus will lockout and the feeder breaker (2A-309) will remain closed. Loss of Offsite Power and 2P-7A EFW pump overspeed trips causing a complete loss of feedwater. 2P-89B High Pressure Safety Injection pump fails to start SIAS |          |  |
|   | SRO      | <p>The SRO should direct the following action to be completed.</p> <p>9. Locally remove danger tags and close the following breakers:</p> <ul style="list-style-type: none"> <li>• 2B51-E4 "LTOP RELIEF ISOL 2CV-4730-1"</li> <li>• 2B51-K2 "LTOP RELIEF ISOL 2CV-4741-1"</li> </ul> <p><b>Examiner note: Closing the above breaker will not energize the valves because 2B51 is de-energized from the 2A-3 lockout.</b></p> |
| <b>Cue: When contacted as a NLO to close the LTOP relief isol valves, after 2 min have the booth operator close the LTOP breakers, then report the 2B51-E4, and 2B51-K2 are closed.</b>   |          |  |
|   | SRO      | <p>11. IF EFW Pump 2P7B available, THEN establish EFW flow to SGs from 2P7B as follows:</p> <p><b>Examiner note: 2P-7B is not available due to the 2A-3 lockout.</b></p>   |
| <b>Cue: If contacted as a NLO to assess 2A-309, report that 2A-309 is closed and the breaker has been damaged.</b>  |          |  |
| <b>Cue: If requested as a NLO to locally operate 2A-309, report that it will not open and can not be racked down.</b>   |          |  |
|   | SRO      | 11. GO TO Step 12.   |
|   | SRO      | <p>12. IF EFW Pump 2P7A available, THEN establish EFW flow to SGs from 2P7A as follows:</p> <p><b>Examiner note: 2P-7B is not available due to the 2A-3 lockout.</b></p>   |
|   | SRO      | 12. GO TO Step 13.   |
|   | SRO      | <p>13. IF AFW Pump 2P75 available, THEN establish AFW flow to SGs from 2P75 as follows:</p> <p><b>Examiner note: 2P-75 is not available due to the 2A-1 lockout.</b></p>   |
|   | SRO      | <p>13. IF AFW Pump 2P75 unavailable, THEN perform EITHER of the following:</p> <ul style="list-style-type: none"> <li>• GO TO Step 13.A if unavailability is due to electrical power supply.</li> <li style="text-align: center;">OR</li> <li>• GO TO Step 14.</li> </ul> <p><b>Examiner note: The SRO should go to step 14 due to the 2A-1 bus lockout Step 13.A will not restore power during a lockout.</b></p>           |

| Time  | Position        | Applicant's Actions or Behavior   |
|---|-----------------|---|
| Op-Test No.: 2012-1   | Scenario No.: 1 | Event No.: 6, 7 & 8   |
| Event Description: 2A-1 bus negative sequence and lockout causing a reactor trip. Also, 2A-3 bus will lockout and the feeder breaker (2A-309) will remain closed. Loss of Offsite Power and 2P-7A EFW pump overspeed trips causing a complete loss of feedwater. 2P-89B High Pressure Safety Injection pump fails to start SIAS |                 |   |
|   | ANY             | <p>■14. Check IA pressure greater than 65 psig. (<b>Not met, perform contingency</b>)</p>   |
|   | ANY             | <p>■14. IF IA NOT available, THEN perform the following:</p> <p>A. Inform Unit 1 of IA cross-connect status.</p> <p>C. IF Unit 1 IA pressure lowers to less than 60 psig, THEN perform the following:</p> <p>1) Close IA Cross-Connect valves.</p> <ul style="list-style-type: none"> <li>• 2CV-3004</li> <li>• 2CV-3015</li> </ul> <p>2) Locally verify the following valves closed:</p> <ul style="list-style-type: none"> <li>• MANUAL X-CONNECT TO UNIT 1 (2IA-47)</li> <li>• MANUAL X-CONNECT TO UNIT 1 (2IA-48)</li> <li>• 2F-37 INLET FROM DRY HDR (2IA-192)</li> </ul>    |
|   | ANY             | 15. Check MSIVs open. ( <b>Not met, perform contingency</b> )   |
|   | ANY             | <p>15. Perform the following:</p> <p>A. IF MSIS actuated, THEN reset MSIS using 2202.010 Attachment 14,MSIS Reset (<b>MSIS is not actuated</b>)</p> <p>B. IF CSAS actuated, THEN reset CSAS using 2202.010 Attachment 45, CSAS Reset. (<b>CSAS is not actuated</b>)</p> <p>C. IF MSIS AND CSAS can NOT be reset, THEN GO TO Step 16.</p> <p>D. Open MSIV Bypass valves.</p> <p>E. WHEN SG and Main Steam pressure equalize within 50 psi, THEN open MSIVs.</p> <p><b>Examiner note: The MSIVs can not be opened due to the LOOP and crew should not attempt to open them.</b></p> |
|   | ANY             | 16. Check at least ONE Condensate pump running. ( <b>Not met, perform contingency</b> )   |



| Time  | Position        | Applicant's Actions or Behavior   |
|---|-----------------|---|
| Op-Test No.: 2012-1   | Scenario No.: 1 | Event No.: 6, 7 & 8   |
| Event Description: 2A-1 bus negative sequence and lockout causing a reactor trip. Also, 2A-3 bus will lockout and the feeder breaker (2A-309) will remain closed. Loss of Offsite Power and 2P-7A EFW pump overspeed trips causing a complete loss of feedwater. 2P-89B High Pressure Safety Injection pump fails to start SIAS |                 |   |
|   | BOP             | <p>E. Perform the following:</p> <ol style="list-style-type: none"> <li>1) IF EITHER 4160v Vital bus energized from offsite power, THEN perform the following: <b>(Not met)</b> <ol style="list-style-type: none"> <li>a) Commence aligning third HPSI pump to associated bus.</li> <li>b) WHEN third HPSI pump alignment complete, THEN verify third HPSI pump running.</li> </ol> </li> <li>2) IF ANY 4160v Vital bus energized from DG, THEN perform the following:           <ol style="list-style-type: none"> <li>a) Verify ONE HPSI pump running on train supplied by DG. <b>(Not met, BOP should start 2P-89C or 2P-89B)</b></li> <li>b) GO TO Step 20.G.</li> </ol> </li> </ol> <p><b>Examiner note: The SRO may discuss Tech Spec 3.5.2 for HPSI.</b></p> |
| <b>Critical Step:</b><br><br>Establish Once Through cooling prior to S/G dry out with one HPSI pump running   | BOP/ATC         | <p>*G. Verify at least ONE HPSI pump running.</p> <p>H. Open ECCS PZR Vent valve (2CV-4698-1).</p> <p>I. Open LTOP/ECCS Relief Isolation valve (2CV-4740-2).</p>  |
|   | ANY             | J. Maintain BOTH SG pressures 950 psia to 1050 psia using upstream ADVs or upstream ADV isolation MOVs.   |
|   | ANY             | K. GO TO 2202.009, Functional Recovery.   |
|   | SRO             | 2. Record present time: <ul style="list-style-type: none"> <li>• Time _____.</li> </ul>   |
|   | SRO             | * 3. Notify SM to refer to Technical Specifications and 1903.010, Emergency Action Level Classification.  |

| Time  | Position        | Applicant's Actions or Behavior  |
|---|-----------------|--|
| Op-Test No.: 2012-1   | Scenario No.: 1 | Event No.: 6, 7 & 8  |
| Event Description: 2A-1 bus negative sequence and lockout causing a reactor trip. Also, 2A-3 bus will lockout and the feeder breaker (2A-309) will remain closed. Loss of Offsite Power and 2P-7A EFW pump overspeed trips causing a complete loss of feedwater. 2P-89B High Pressure Safety Injection pump fails to start SIAS |                 |  |
|   | ANY             | * 4. Check RCS pressure greater than 1400 psia.  |
|   | ANY             | These actions have already been performed.<br>* 4. Perform the following:<br><br>B. IF NPSH requirements violated OR RCS MTS less than 30°F, THEN perform the following:<br><br>1) Stop ALL RCPs.<br><br>2) Verify BOTH PZR Spray valves in MANUAL and closed.<br><br>3) GO TO Step 6. |
|   | ANY             | * 6. <u>IF</u> SIAS or MSIS actuated, <u>THEN</u> perform the following:<br><br>A. Verify at least ONE SW pump running on EACH loop. ( <b>Only one SW pump will be running</b> )   |
|   | ANY             | B. Check EITHER DG running.  |
|   | ANY             | C. Verify running DG SW Outlet valve open:<br><br>• 2CV-1503-1<br>• 2CV-1504-2   |
|   | ANY             | D. Verify SW pump suction aligned to Lake.   |
|   | ANY             | E. Check 4160v Non-vital bus 2A1 OR 2A2 energized from offsite power. ( <b>Not met, perform contingency</b> )  |
|   | ANY             | E. GO TO Step 7.   |

| Time  | Position | Applicant's Actions or Behavior  |
|---|----------|--|
| Op-Test No.: 2012-1   |          |  |
| Scenario No.: 1   |          |  |
| Event No.: 6, 7 & 8   |          |  |
| Event Description: 2A-1 bus negative sequence and lockout causing a reactor trip. Also, 2A-3 bus will lockout and the feeder breaker (2A-309) will remain closed. Loss of Offsite Power and 2P-7A EFW pump overspeed trips causing a complete loss of feedwater. 2P-89B High Pressure Safety Injection pump fails to start SIAS |          |  |
|   | ANY      | <p>7. IF CCW in service to provide SG Sample Cooler cooling, THEN perform the following:</p> <p>A. IF SG "A" has indicated water level, THEN verify the following SG 'A' Sample Valves open:</p> <ul style="list-style-type: none"> <li>• 2CV-5850</li> <li>• 2CV-5852-2</li> </ul> <p>B. IF SG "B" has indicated water level, THEN verify the following SG 'B' Sample Valves open:</p> <ul style="list-style-type: none"> <li>• 2CV-5858</li> <li>• 2CV-5859-2</li> </ul> <p>C. Notify Chemistry to sample available SGs for activity.</p> <p><b>Examiner note: Neither S/G has water level that should be sampled and CCW is not in service.</b></p> |
|   | ANY      | <p>8. Check ALL available Hydrogen Analyzers in service; refer to 2104.044, Containment Hydrogen Control Operations – Exhibit 1, Hydrogen Analyzer Auto Start. <b>(perform contingency)</b></p>  |
|   | ANY      | <p>8. Verify all available Hydrogen Analyzers in service within 70 minutes from start of event.</p> <ul style="list-style-type: none"> <li>• Record time from Entry Section step 2:</li> </ul> <p>Time _____</p> <p><b>Examiner note: This step may not be performed due to 70 minute allowance for start.</b></p>   |
|   | ANY      | <p>9. Open Functional Recovery Success Path Tracking page.</p>   |
|   | SRO      | <p>10. Notify Control Board Operators to perform the following:</p> <p>A. Monitor floating steps.</p> <p>B. Verify actuated ESFAS components using 2202.010 Exhibit 9, ESFAS Actuation.</p>  |

| Op-Test No.: 2012-1   | Scenario No.: 1 | Event No.: 6, 7 & 8   |
|---|-----------------|---|
| Event Description: 2A-1 bus negative sequence and lockout causing a reactor trip. Also, 2A-3 bus will lockout and the feeder breaker (2A-309) will remain closed. Loss of Offsite Power and 2P-7A EFW pump overspeed trips causing a complete loss of feedwater. 2P-89B High Pressure Safety Injection pump fails to start SIAS |                 |   |
| Time  | Position        | Applicant's Actions or Behavior   |
| Exhibit 9<br>ESFAS<br>actuation.  | BOP             | <p>*1.0 IF any abnormalities noted for affected ESFAS actuation, THEN notify CRS.</p> <p>2.0 IF SIAS, THEN verify the following:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Red Train RWT Outlet (2CV-5630-1) open.</li> <li><input type="checkbox"/> Red Train HPSI Pump in service with proper discharge pressure and flow.</li> <li><input type="checkbox"/> Red Train HPSI Injection MOVs open.</li> <li><input type="checkbox"/> Red Train Service Water Pump in service with proper discharge pressure.</li> <li><input type="checkbox"/> Red Train LPSI Pump (2P60A) in service with proper discharge pressure and flow.</li> <li><input type="checkbox"/> Red Train LPSI Injection MOVs open.</li> <li><input type="checkbox"/> Green Train RWT Outlet (2CV-5631-2) open.</li> <li><input type="checkbox"/> Green Train HPSI Pump in service with proper discharge pressure and flow.</li> <li><input type="checkbox"/> Green Train HPSI Injection MOVs open.</li> <li><input type="checkbox"/> Green Train Service Water Pump in service with proper discharge pressure.</li> <li><input type="checkbox"/> Green Train LPSI Pump (2P60B) in service with proper discharge pressure and flow.</li> <li><input type="checkbox"/> Green Train LPSI Injection MOVs open.</li> <li><input type="checkbox"/> Available Charging Pumps in service with proper discharge pressure and flow.</li> <li><input type="checkbox"/> Service Water Outlet Valves open for #1 and #2 EDGs.</li> </ul> <p>3.0 IF CCAS, THEN verify the following:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Red Train CNTMT Coolers in service.</li> <li><input type="checkbox"/> Service Water aligned to Red Train CNTMT Coolers.</li> <li><input type="checkbox"/> Red Train Bypass Dampers open.</li> <li><input type="checkbox"/> Green Train CNTMT Coolers in service.</li> <li><input type="checkbox"/> Service Water aligned to Green Train CNTMT Coolers.</li> <li><input type="checkbox"/> Green Train Bypass Dampers open.</li> </ul> |



| Time  | Position        | Applicant's Actions or Behavior   |
|---|-----------------|---|
| Op-Test No.: 2012-1   | Scenario No.: 1 | Event No.: 6, 7 & 8   |
| Event Description: 2A-1 bus negative sequence and lockout causing a reactor trip. Also, 2A-3 bus will lockout and the feeder breaker (2A-309) will remain closed. Loss of Offsite Power and 2P-7A EFW pump overspeed trips causing a complete loss of feedwater. 2P-89B High Pressure Safety Injection pump fails to start SIAS |                 |   |
|   | ANY             | <p>B. Check Vital DC Auxiliaries satisfied:</p> <p>1) At least ONE 125v Vital DC bus energized:</p> <ul style="list-style-type: none"> <li>• 2D01-SPDS point E2D01</li> <li>• 2D02-SPDS point E2D02</li> </ul> <p>2) At least ONE 120v Vital AC bus energized:</p> <ul style="list-style-type: none"> <li>• 2RS1 - SPDS point E2RS1 or E2RS1RS3</li> <li>• 2RS2 - SPDS point E2RS2 or E2RS2RS4</li> <li>• 2RS3 - SPDS point E2RS3 or E2RS1RS3</li> <li>• 2RS4 - SPDS point E2RS4 or E2RS2RS4</li> </ul> <p><b>Examiners note: Vital DC will be satisfied.</b></p> |
|   | ANY             | <p>C. Check Vital AC Auxiliaries satisfied:</p> <p>1) At least ONE 4160v Vital AC bus (2A3/2A4) energized.</p> <p><b>Examiners note: Vital AC will be satisfied.</b></p>  |
|   | ANY             | <p>D. Check RCS Inventory Control satisfied:</p> <p>1) CVCS maintaining PZR level 10 to 80% [40 to 70%] and level stable or trending to setpoint.</p> <p>2) RCS MTS 30°F or greater.</p> <p>3) RVLMS LVL 03 or higher elevation indicates WET.</p> <p><b>Examiners note: Inventory Control will not be satisfied due to MTS.</b></p>  |
|   | ANY             | <p>E. Check RCS Pressure Control satisfied:</p> <p>1) RCS pressure maintained within P-T limits, refer to Attachment 1, P-T Limits.</p> <p><b>Examiners note: P-T limits will not be satisfied.</b></p>   |

| Op-Test No.: 2012-1   | Scenario No.: 1 | Event No.: 6, 7 & 8  |
|---|-----------------|--|
| Event Description: 2A-1 bus negative sequence and lockout causing a reactor trip. Also, 2A-3 bus will lockout and the feeder breaker (2A-309) will remain closed. Loss of Offsite Power and 2P-7A EFW pump overspeed trips causing a complete loss of feedwater. 2P-89B High Pressure Safety Injection pump fails to start SIAS |                 |  |
| Time  | Position        | Applicant's Actions or Behavior  |
|   | ANY             | <p>F. Check RCS and Core Heat Removal satisfied:</p> <ol style="list-style-type: none"> <li>1) At least ONE intact SG available for Heat Removal by EITHER of the following:               <ul style="list-style-type: none"> <li>• Level 10 to 90% [20 to 90%] with FW available.</li> <li>• Level being restored with total FW flow of 485 gpm or greater.</li> </ul> </li> <li>2) <u>IF</u> ANY RCP operating, <u>THEN</u> RCS <math>\Delta T</math> less than 10°F and <u>NOT</u> rising.</li> <li>3) <u>IF</u> ALL RCPs secured, <u>THEN</u> RCS <math>\Delta T</math> less than 50°F and <u>NOT</u> rising.</li> <li>4) RCS <math>T_C</math> less than 555°F and <u>NOT</u> rising.</li> <li>5) RCS MTS 30°F or greater.</li> <li>6) RVLMS LVL 01 indicates WET.</li> </ol> <p><b>Examiners note: RCS and Core Heat Removal will not be satisfied due to feedwater availability.</b></p> |
|   | ANY             | <p>G. Check CNTMT Isolation satisfied:</p> <ol style="list-style-type: none"> <li>1) CNTMT parameters normal:               <ol style="list-style-type: none"> <li>a) "CNTMT RADIATION HI" annunciator (2K10-A6) clear.</li> <li>b) NO unexplained rise in CNTMT radiation.</li> <li>c) CNTMT pressure less than 18.3 psia. (<b>Not met, perform contingencies</b>)</li> </ol> </li> <li>2) "SEC SYS RADIATION HI" annunciator (2K11-A10) clear.</li> <li>3) NO unexplained rise in Secondary Systems Radiation monitor trends:               <ul style="list-style-type: none"> <li>• Main Steam lines</li> <li>• SG Sample</li> <li>• Condenser Off Gas</li> </ul> </li> </ol> <p><b>Examiners note: CNTMT Isolation will not be satisfied due to once through cooling.</b></p>  |

| Op-Test No.: 2012-1   |             | Scenario No.: 1   |             | Event No.: 6, 7 & 8 |              |   |
|---|-------------|---|-------------|---------------------|--------------|---|
| Event Description: 2A-1 bus negative sequence and lockout causing a reactor trip. Also, 2A-3 bus will lockout and the feeder breaker (2A-309) will remain closed. Loss of Offsite Power and 2P-7A EFW pump overspeed trips causing a complete loss of feedwater. 2P-89B High Pressure Safety Injection pump fails to start SIAS |             |   |             |                     |              |   |
| Time  | Position    | Applicant's Actions or Behavior   |             |                     |              |   |
|   | ANY         | 1) Verify CNTMT isolation as follows: <ul style="list-style-type: none"> <li>• CIAS actuated components are properly aligned, using 2202.010 Attachment 5, CIAS Verification.</li> <li>• ONE Emergency Penetration Room Vent fan running.</li> <li>• EACH penetration NOT required to be open has at least ONE isolation valve closed.</li> </ul> |             |                     |              |   |
| Standard Attachment 5   | ANY         | COMPONENT DESCRIPTION   | 1.0 NUMBER  | 2.0 LOCATION        | 3.0 POSITION | √ |
|   |             | REGEN HX INLET  | 2CV-4821-1  | 2C09                | CLOSED       |   |
|   |             | REGEN HX OUTLET   | 2CV-4823-2  | 2C09                | CLOSED       |   |
|   |             | CNTMT PURGE SUPPLY V1 INSIDE  | 2CV-8289-1  | 2C17                | CLOSED       |   |
|   |             | CNTMT PURGE SUPPLY V1 OUTSIDE OUTSIDE   | 2CV-8283-1  | 2C17                | CLOSED       |   |
|   |             | CNTMT PURGE EXHAUST V2 INSIDE   | 2CV-8291-1  | 2C17                | CLOSED       |   |
|   |             | CNTMT PURGE EXHAUST V2 OUTSIDE OUTSIDE  | 2CV-8285-1  | 2C17                | CLOSED       |   |
|   |             | SAMPLE ISOLATION VALVE QUENCH TANK LIQ  | 2SV-5878-1  | 2C17                | CLOSED       |   |
|   |             | SAMPLE ISOLATION VALVE RCS  | 2SV-5833-1* | 2C17                | CLOSED       |   |
|   |             | RCP CCW SUPPLY  | 2CV-5236-1* | 2C17                | CLOSED       |   |
|   |             | RCP CCW RETURN  | 2CV-5255-1* | 2C17                | CLOSED       |   |
|   |             | CNTMT CHILL WATER SUPPLY  | 2CV-3852-1  | 2C17                | CLOSED       |   |
|   |             | CNTMT CHILL WATER RETURN  | 2CV-3851-1  | 2C17                | CLOSED       |   |
|   |             | RX DRAIN TANK DISCH ISOL  | 2CV-2202-1  | 2C17                | CLOSED       |   |
|   |             | CNTMT VENT HEADER ISOL  | 2CV-2401-1  | 2C17                | CLOSED (1)   |   |
|   |             | CNTMT SUMP DRAIN  | 2CV-2060-1  | 2C17                | CLOSED       |   |
|   |             | RCP BLEEDOFF TO VCT   | 2CV-4846-1  | 2C17                | CLOSED       |   |
|   |             | CNTMT AIR SAMPLE NORTH INSIDE SUPPLY  | 2SV-8265-1* | 2C17                | CLOSED       |   |
|   |             | CNTMT AIR SAMPLE NORTH INSIDE RETURN  | 2SV-8259-1* | 2C17                | CLOSED       |   |
|   |             | CNTMT AIR SAMPLE SOUTH INSIDE SUPPLY  | 2SV-8273-1* | 2C17                | CLOSED       |   |
| CNTMT AIR SAMPLE SOUTH INSIDE RETURN  | 2CV-8233-1* | 2C17  | CLOSED      |                     |              |   |
| PASS SUMP SAMPLE SUPPLY ISOL  | 2SV-5634-1* | 2C17  | CLOSED      |                     |              |   |
| PASS SUMP SAMPLE RETURN ISOL  | 2SV-5633-1* | 2C17  | CLOSED      |                     |              |   |



| Op-Test No.: 2012-1   |          | Scenario No.: 1  | Event No.: 6, 7 & 8 |
|---|----------|--|---------------------|
| Event Description: 2A-1 bus negative sequence and lockout causing a reactor trip. Also, 2A-3 bus will lockout and the feeder breaker (2A-309) will remain closed. Loss of Offsite Power and 2P-7A EFW pump overspeed trips causing a complete loss of feedwater. 2P-89B High Pressure Safety Injection pump fails to start SIAS |          |  |                     |
| Time  | Position | Applicant's Actions or Behavior  |                     |
|   | ANY      | <p>*2. Verify Safety Injection flow to RCS as follows:</p> <ul style="list-style-type: none"> <li>A. Verify at least ONE HPSI pump running.</li> <li>B. Verify running HPSI Injection MOVs open.</li> <li>C. Verify ALL available Charging pumps running.</li> <li>D. Check RCS pressure less than 1390 psia.</li> <li>E. Check total HPSI flow acceptable using 2202.010 Exhibit 2, HPSI Flow Curve.</li> <li>F. Check total LPSI flow acceptable using 2202.010 Exhibit 3, LPSI Flow Curve.</li> </ul>   |                     |
|   | ANY      | <p>*3. IF CNTMT Spray pumps are running AND ALL of the following are TRUE:</p> <ul style="list-style-type: none"> <li>• CNTMT pressure less than 73.7 psia (59 psig).</li> <li>• At least two CNTMT Cooling Fans running.</li> <li>• SIAS actuated and flow acceptable per the following: <ul style="list-style-type: none"> <li>- 2202.010 Exhibit 2, HPSI Flow Curve</li> <li>- 2202.010 Exhibit 3, LPSI Flow Curve</li> </ul> </li> </ul> <p>THEN perform the following:</p> <ul style="list-style-type: none"> <li>A. Place EITHER CNTMT Spray pump (2P35A/B) in PTL.</li> <li>B. Verify CNTMT pressure maintained less than 73.7 psia (59 psig).</li> </ul> |                     |
| <p><b>Termination criteria: When the appropriate success path identified and HPSI flow is verified using exhibit 2 or at examiner's discretion.</b></p>   |          |  |                     |

| Facility: ANO-2  |  | Scenario No.: 2 (New) |  | Op-Test No.: 2012-1 |  |
|--|--|-----------------------|--|---------------------|--|
| Examiners:   |  |                       | Operators:   |                     |  |
| _____  |  |                       | _____  |                     |  |
| _____  |  |                       | _____  |                     |  |
| Initial Conditions:<br>100% MOL; All Engineered Safety Features systems are in standby. #3 and #4 MTG control valve steam lead valves failed closed. 'B' SIT level is high due to inleakage. Voltage regulator auto tracking circuit is disabled. RED Train Maintenance Week.  |  |                       |  |                     |  |
| Turnover:<br>100%. 260 EFPD. EOOS indicates 'Minimal Risk'. #3 and #4 MTG control valve steam lead valves failed closed. Voltage regulator auto tracking circuit is disabled. RED Train Maintenance Week. Evolution scheduled: Drain of 'B' Safety Injection Tank to clear the High pressure alarm. OPS-B37 log is not required. |  |                       |  |                     |  |
| Event No.  | Malf. No.                                  | Event Type*           | Event Description  |                     |  |
| 1  |  | N (BOP)<br>N (SRO)    | Drain 'B' Safety Injection Tank.   |                     |  |
| 2  | XRC2PT46241                                |                       | 'A' channel wide range pressurizer pressure will fail low. Tech Spec for SRO.  |                     |  |
| 3  | SDS0303DEM<br>DI_HS_0303_1<br>DI_HS_0303_2 | C(BOP)<br>C(SRO)      | 2CV-0303 Turbine bypass demand fails high.   |                     |  |
| 4  | SCRUNBACK                                  | R (ATC)<br>C (SRO)    | Partial Stator water runback. Tech Spec for SRO.   |                     |  |
| 5  | RCP2P32BGRN                                | M (ALL)               | 'B' Reactor Coolant Pump (RCP) trip.   |                     |  |
| 6  | RPSRXAUTO                                  | C (ATC)<br>C (SRO)    | Reactor Protection System auto trip failure.   |                     |  |
| 7  | MS1003                                     | M (ALL)               | Main Steam Safety valve setpoint drifts causing an ESD.  |                     |  |
| 8  | ESF1025<br>CV1038<br>MFWPMPBTRP            | C (BOP)<br>C (SRO)    | EFW valve 2CV-1025-1 fails to auto close, and 2EFW-1038-2 failed open. 'B' Main feedwater pump trips to allow Steam Generator level to lower for Auto EFW actuation. |                     |  |
| 9  | CV4651                                     | C (ATC)<br>C (SRO)    | 'A' RCP spray valve failed closed. (Not credited as malfunction after EOP entry due to possibly being discovered prior to EOP entry)                                 |                     |  |
| * (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor   |  |                       |  |                     |  |

Total malfunctions. = 7, Malfunctions after EOP entry = 2, Abnormal events = 2, Major transient = 2, EOPs with substantive actions = 1, EOP Contingencies = 0, Critical tasks = 2.

### Scenario #2 Objectives

- 1) Evaluate individual ability to control Safety Injection Tank level.
- 2) Evaluate individual response to a failure of a Reactor Protection system instrument.
- 3) Evaluate individual response to a Loss of Turbine Load.
- 4) Evaluate individual response to a failure of a Steam Dump Bypass Control System output.
- 5) Evaluate individual response to a Reactor Coolant pump trip.
- 6) Evaluate individual response to a failure of the Reactor Protection system to trip the reactor.
- 7) Evaluate crew ability to mitigate an Excess Steam Demand.
- 8) Evaluate individual response to failed closed Reactor Coolant pump spray valve.
- 9) Evaluate individual ability to monitor operation of Engineered Safety Features equipment and operate Engineered Safety Features equipment.

### SCENARIO #2 NARRATIVE

Simulator session begins with the plant at 100% power steady state #3 and #4 MTG control valve steam lead valves failed closed.

When the crew has completed their control room walk down and brief, the BOP will lower 'B' Safety Injection Tank (SIT) level.

When 'B' SIT level is lowered and cued by lead examiner; Channel A wide range RCS pressure transmitter will fail low. The SRO will use the Annunciator Corrective action and direct the BOP to bypass point 6 on the Plant Protection System. The SRO will also enter Tech Spec 3.3.1.1 for Reactor Protection System and 3.3.2.1 for Engineering Safety Features Actuation system, 3.3.3.5 remote shutdown, and 3.3.3.6 for Post accident instrumentation. The BOP bypass point #6 on channel 'A' PPS.

After the BOP has bypassed point 6 and cued by lead examiner, 2CV-0303 SDBCS Turbine Bypass valve will fail open. The CRS should enter the overcooling in modes 1 or 2 AOP. The crew should reduce turbine load to maintain reactor power less than 100%. The BOP should take manual control of 2CV-0303 and close the valve limiting the power rise.

When the crew has closed 2CV-0303 and cued by the lead examiner, a partial stator cooling water runback will occur. The SRO will enter the Loss of Turbine Load AOP, OP 2203.024. The SRO should direct emergency boration and/or insert CEAs. The BOP should call NLOs to investigate the loss of Stator Cooling water pump. The SRO will enter Tech Spec 3.2.6 for RCS Tc. After the runback has stopped the crew should verify emergency boration is secured and commence normal boration to match the primary and secondary.

After the crew has secured emergency boration, stabilized the plant, and cued by the lead examiner, 'B' RCP will trip which should cause an automatic reactor trip but the reactor protection system will not auto operate. The ATC should perform the immediate action of manually trip the reactor.

**SCENARIO #2 NARRATIVE (continued)**

The Crew will implement Standard Post Trip Actions (SPTA), OP 2202.001. After the reactor trips 2PSV-1003 Main Steam Safety Valve setpoint will drift lower cause an Excess Steam Demand. 'B' Main feedwater pump trips after the reactor trip to allow Steam Generator level to lower for an auto EFW actuation. The EFW valves from 2P-7B EFW pump to 'A' Steam Generator will fail to close and the BOP will manually close 2CV-1025-1 EFW valve or secure 2P-7B EFW pump. The ATC will secure two Reactor coolant Pumps when RCS pressure goes below 1400 psia. The BOP will also override Service Water to Component Cooling water to allow RCP operation.

The SRO will diagnose an Excess Steam Demand event and enter OP 2202.005, Excess Steam Demand. The BOP will steam 'B' S/G using the upstream Atmospheric Dump valve when 'A' S/G blows dry. The ATC should determine that the normal pressurizer spray valve is not functioning properly and transition to using the Auxiliary Spray valve to maintain RCS pressure.

### Simulator Instructions for Scenario 2

Reset simulator to MOL 100% power IC steady state. **When Resetting the simulator leave 2CV-0303 HS in auto and override the switch check.**

Ensure that AACG is secured and annunciators clear.

Place MINIMAL RISK, Green Train Protected and RED Train Maintenance Week signs on 2C11.

Ensure SIT Hi pressure alarm is in due to 'B' SIT level being elevated.

#3 and #4 MTG control valve steam lead valves failed closed.

T1, T2, T3, T4, T5 set to false.

T5 = Reactor Trip

| Event No. | Malf. No.   | Value/<br>Ramp<br>Time                              | Event<br>Description   |
|-----------|---|---|--|
| 1         |   |   | Drain 'B' Safety Injection Tank.   |
| 2         | XRC2PT46241<br>Trigger = T1                                     | 0   | 'A' channel wide range pressurizer pressure will fail low. Tech Spec for SRO.  |
| 3         | SDS0303DEM<br>Trigger = T2<br><br>DI_HS_0303_1<br>DI_HS_0303_2  | 100% /<br>Ramp =<br>5 min.<br><br>False<br><br>True | 2CV-0303 Turbine bypass demand fails high.   |
| 4         | SCRUNBACK<br>Trigger = T3                                       | True/<br>Delete<br>in = 60<br>secs.                 | Partial Stator water runback. Tech Spec for SRO.   |
| 5         | RCP2P32BGRN<br>Trigger = T4                                     | True  | 'B' Reactor Coolant Pump (RCP) trip.   |
| 6         | RPSRXAUTO   | True  | Reactor Protection System auto trip failure.   |
| 7         | MS1003<br>Trigger = T5  | 0/<br>Delay =<br>30 sec.<br><br>Ramp<br>15 min.     | Main Steam Safety valve setpoint drifts causing an ESD.  |
| 8         | ESF1025<br>CV10382<br>MFWPMPBTRP<br>Trigger 5 for<br>MFWP trip. | True<br>1<br><br>True /<br>Delay =<br>5 sec.        | EFW valve 2CV-1025-1 fails to auto close, and 2EFW-1038-2 failed open. 'B' Main feedwater pump trips to allow Steam Generator level to lower for Auto EFW actuation. |
| 9         | CV4651  | 0   | 'A' RCP spray valve failed closed. (Not credited as malfunction after EOP entry due to possibly being discovered prior to EOP entry)                                 |

| <b>Simulator Operator CUEs</b>  |            |  |
|---|------------|--|
| At T=0  |            | Drain 'B' Safety Injection Tank.   |
| Cued by lead examiner   | Trigger T1 | 'A' channel wide range pressurizer pressure will fail low.   |
| <b>Cue: If requested as the WWM, then report that I&amp;C will start planning a package to troubleshoot the failed instrument.</b>  |            |  |
| Cued by lead examiner   | Trigger T2 | 2CV-0303 Turbine bypass demand fails high.   |
| <b>Cue: If contacted as NLO to investigate 2CV-0303, after approximately 1 min. report that 2CV-0303 so no signs of failures locally. Also, report current valve position.</b>  |            |  |
| <b>Cue: When contacted as the WWM, then report that I&amp;C maintenance will investigate 2CV-0303.</b>  |            |  |
| Cued by lead examiner   | Trigger T3 | Partial Stator water runback. Tech Spec for SRO.   |
| <b>Cue: After the crew notice the Generator runback has stopped, report as the IAO that near the stator water skid when you heard 2P-25B Stator water pump trip and 2P-25A auto start. State that you were investigating the skid when you heard a check valve slam and 2P-25B then stopped rotating.</b> |            |  |
| <b>Cue: If contacted as Chemistry, report that you will sample the RCS for Iodine when requested.</b>   |            |  |
| Cued by lead examiner   | Trigger T4 | 'B' Reactor Coolant Pump (RCP) trip.   |
| Reactor Trip  |            | Main Steam Safety valve setpoint drifts causing an ESD.  |
| <b>Cue: If contacted as the STA to report to the control room, acknowledge the request.</b>   |            |  |
| <b>Cue: If contacted as a NLO to perform Attachment 47 Field Operator Post Trip Actions, acknowledge request.</b>   |            |  |
| <b>Cue: When contacted as Chemistry, then report you will sample both S/G for activity and Monitor RDACS for off site dose releases.</b>  |            |  |
|   |            | EFW valve 2CV-1025-1 fails to auto close, and 2EFW-1038-2 failed open. 'B' Main feedwater pump trips to allow Steam Generator level to lower for Auto EFW actuation. |
|   |            | 'A' RCP spray valve failed closed.   |
|   |            |  |

| Op-Test No.: 2012-1  |          |                                 | Scenario No.: 2  |  |  | Event No.: 1 |  |  |
|--|----------|---------------------------------|--|--|--|--------------|--|--|
| Event Description: Drain 'B' Safety Injection Tank.  |          |                                 |  |  |  |              |  |  |
| Time   | Position | Applicant's Actions or Behavior |  |  |  |              |  |  |
|  | BOP      | 7.1                             | Draining SITs to RDT in Mode 1, 2, 3, or 4 with SIT Outlet valves Open   |  |  |              |  |  |
|  |          | 7.1.1                           | IF source of SIT inleakage unknown, THEN initiate SIT Level Change (OPS-B37) as desired.   |  |  |              |  |  |
|  | BOP      | 7.1.2                           | IF OPS-B37 being maintained for SIT to be drained, THEN record pre-drain level on OPS-B37.   |  |  |              |  |  |
| <b>Examiner note: Steps 7.1.1 and 7.1.2 are not applicable.</b>  |          |                                 |  |  |  |              |  |  |
|  | BOP      | *7.1.3                          | Monitor all RDT AND SIT levels and pressures during this operation.  |  |  |              |  |  |
|  | BOP      | 7.1.4                           | Open SIT Drain to RDT (2CV-5081).  |  |  |              |  |  |
|  | BOP      | 7.1.5                           | IF desired level drop < 1/2%, THEN close 2CV-5081.   |  |  |              |  |  |
|  | BOP      | *7.1.6                          | Monitor pressure of SIT Injection header to be drained: <ul style="list-style-type: none"> <li>• SIS Injection to Loop 2P-32A (2PIS-5000)</li> <li>• <del>SIS Injection to Loop 2P-32B (2PIS-5020)</del></li> <li>• SIS Injection to Loop 2P-32C (2PIS-5040)</li> <li>• SIS Injection to Loop 2P-32D (2PIS-5060)</li> </ul>                |  |  |              |  |  |
|  | BOP      | 7.1.8                           | Open desired SIT Drain valve: <ul style="list-style-type: none"> <li>• 2T-2A - SIT A Drain valve (2SV-5001-1)</li> <li>• <del>2T-2B - SIT B Drain valve (2SV-5021-1)</del></li> <li>• 2T-2C - SIT C Drain valve (2SV-5041-2)</li> <li>• 2T-2D - SIT D Drain valve (2SV-5061-2)</li> </ul>  |  |  |              |  |  |
| Procedure Note: If SIT drain header pressurized, then SIT Drain valves may be slow to close due to no DP. (CR-ANO-2-2004-0802) |          |                                 |  |  |  |              |  |  |
|  | BOP      | 7.1.9                           | WHEN desired SIT level or pressure reached, THEN close SIT Drain valve opened: <ul style="list-style-type: none"> <li>• 2T-2A - SIT A Drain valve (2SV-5001-1)</li> <li>• <del>2T-2B - SIT B Drain valve (2SV-5021-1)</del></li> <li>• 2T-2C - SIT C Drain valve (2SV-5041-2)</li> <li>• 2T-2D - SIT D Drain valve (2SV-5061-2)</li> </ul> |  |  |              |  |  |
|  | BOP      | 7.1.12                          | Verify 2CV-5081 closed.  |  |  |              |  |  |
| <b>Termination criteria: SIT Hi pressure alarm clear or at lead examiner's discretion.</b>                                     |          |                                 |  |  |  |              |  |  |

| Op-Test No.: 2012-1  |  |          | Scenario No.: 2 |   |  | Event No.: 2 |  |  |
|--|--|----------|-----------------|---|--|--------------|--|--|
| Event Description: 'A' channel wide range pressurizer pressure will fail low. Tech Spec for SRO. |  |          |                 |   |  |              |  |  |
| Time   |  | Position |                 | Applicant's Actions or Behavior   |  |              |  |  |
| Cued by lead examiner  |  | ANY      |                 | Announce annunciators:<br>2K04-A4 CH A RPS/ESF/PRETRIP/TRIP<br>2K04-B3 PPS Channel TRIP   |  |              |  |  |
|  |  | ANY      |                 | Report low pressurizer pressure pretrip/trip on PPS insert.   |  |              |  |  |
|  |  | BOP      |                 | Compare all four channels and report 2PT-4624-1 indicates zero.   |  |              |  |  |
|  |  | SRO      |                 | Implement Annunciator Corrective Action 2203.012D.<br>2K04-A4 CH A RPS/ESF/PRETRIP/TRIP applicable actions:<br>2.1      Refer to PPS insert on 2C03 to determine cause.<br>2.2      Compare all Channels to validate alarm.<br>2.6 <u>IF</u> channel failed,<br><u>THEN</u> refer to Tech Specs 3.3.1.1, 3.3.2.1, 3.3.3.5,<br>3.3.3.6, and TRM 3.3.1.1.<br><br>2K04-B3 PPS Channel TRIP applicable actions:<br>2.1      Determine which RPS or ESFAS trips have occurred on<br>PPS inserts.<br>2.3 <u>IF</u> channel failed,<br><u>THEN</u> refer to Tech Specs 3.3.1.1 and 3.3.2.1 and TRM<br>3.3.1.1. |  |              |  |  |
|  |  | SRO      |                 | Enter Tech Spec <b>3.3.1.1 action 2</b> , <b>3.3.2.1 action 10</b> , <b>3.3.3.5</b> and <b>3.3.3.6 action 1</b> .   |  |              |  |  |
|  |  | SRO      |                 | Direct BOP to bypass bistable points for the associated functional units:<br>A Pressurizer pressure low (Bistable 6)  |  |              |  |  |

|  |     |  |
|--|-----|--|
|  | BOP | <p>Bypass the point 6 Channel A:</p> <p>11.1 Refer to Tech Spec 3.3.1.1, 3.3.2.1, 3.3.3.5, 3.3.3.6 and TRM 3.3.1.1.</p> <p>11.2 Circle channel and functional units (points) to be bypassed below:<br/> Channel to be bypassed: (A) B C D<br/> Points to be bypassed:<br/> 1 2 3 4 5 (6) 7 8 9 10 11 12 13 16 17 18 19 20</p> <p>11.3 Enter appropriate Tech Spec/TRM actions.</p> <p>11.4 Verify points to be bypassed <u>NOT</u> bypassed in ANY other channel.</p> <p>11.5 Place desired points in BYPASS for selected channel on 2C23.</p> |
|  | ANY | <p>Announce annunciator 2K04-C3 PPS CHANNEL BYPASSED</p> <p>Verify correct channels in bypass.</p>   |
|  | SRO | Contact maintenance/PS liaison.  |
| <p><b>Cue: When contacted as the WWM, then report that I&amp;C will start planning a work package to repair the failed instrument.</b></p> |     |  |
| <p><b>Termination criteria: Affected channel points placed in bypass or at lead examiner's discretion.</b></p>                             |     |  |

| Op-Test No.: 2012-1  |          | Scenario No.: 2  | Event No.: 3 |
|--|----------|--|--------------|
| Event Description: 2CV-0303 Turbine bypass demand fails high.  |          |  |              |
| Time   | Position | Applicant's Actions or Behavior  |              |
| Cued by lead examiner  | ANY      | Recognize that power is rising and/or that 2CV-0303 shows open indications.  |              |
| <b>Cue: If contacted as NLO to investigate 2CV-0303, after approximately 1 min. report that 2CV-0303 so no signs of failures locally. Also, report current valve position.</b> |          |  |              |
|  | SRO      | Enter and implement Overcooling in Modes 1 or 2 AOP, 2203.050.   |              |
|  | BOP      | <p>*1. Check NONE of the following conditions exist:</p> <ul style="list-style-type: none"> <li>• Reactor trip is imminent.</li> <li>• Uncontrolled lowering of RCS TAVE (less than 540°F for a critical reactor).</li> <li>• RCS pressure less than 2000 psia AND lowering.</li> <li>• Unable to control or restore plant parameters.</li> <li>• Cooldown causes reactor to go subcritical (due to positive MTC) as indicated by the following: <ul style="list-style-type: none"> <li>- Reactor power less than 10 E-4</li> <li>- Flux level lowering</li> <li>- Sustained negative SUR</li> </ul> </li> </ul> |              |
|  | ANY      | <p>2. Secure any positive reactivity additions by stopping the following evolutions if in progress:</p> <ul style="list-style-type: none"> <li>• CEA withdrawal</li> <li>• RCS dilution</li> </ul>   |              |
|  | BOP      | <p>*3. Control turbine load to maintain the following:</p> <ul style="list-style-type: none"> <li>• Reactor power less than 100%</li> <li>• TAVE within 2°F of TREF. <ul style="list-style-type: none"> <li>A. IF load reduced by 25 megawatts AND TAVE and TREF NOT matched, THEN notify Shift Manager.</li> </ul> </li> </ul>  |              |
|  | SRO      | <p>4. Notify SM to refer to Technical Specifications and 1903.010, Emergency Action Level Classification.</p>  |              |

|   |     |  |
|---|-----|--|
|   | SRO | <p>5. Check the following criteria satisfied:</p> <p>A. Steam leak NOT indicated in CNTMT Building.</p> <p>B. Steam leak NOT indicated in Auxiliary or Turbine Building.</p> <p>C. Main Turbine Control Valves properly positioned for present power level.</p> <p>D. All SDBCS Valves closed. <b>(Not met, perform contingency)</b></p> <p>E. FWCS maintaining SG levels at setpoint.</p> <p>F. MSSV Valve Open (2K04-G9) NOT in alarm.</p> <p>G. Gland Seal System pressure 1.5 to 7.0 psig.</p> |
|   | SRO | D. GO TO Step 9.   |
|   | BOP | <p>9. IF any SDBCS valve affected, THEN close affected SDBCS valves using the following as necessary:</p> <ul style="list-style-type: none"> <li>• Place individual HIC in manual AND close the affected SDBCS valve.</li> <li>• Place individual permissive handswitch for affected SDBCS valve in OFF.</li> </ul> <p><b>Examiner note: The BOP will have to place the HIC in manual and close the affected SDBCS valve.</b></p>  |
|   | ATC | 13. Check PZR level greater than 29% AND trending to setpoint.   |
|   | ATC | 14. Check RCS pressure 2025 psia to 2275 psia.   |
|   | ANY | 15. Check RCS TC 542 to 554.7°F using CPC PID 5, 6, 160, or 161.   |
|   | BOP | 16. IF cause of overcooling event stopped, THEN GO TO 2102.004, Power Operations, as necessary for power adjustment.   |
|   | SRO | Contact Work Week Manager to investigate/ repair Steam bypass valve 2CV-0303.  |
| <p><b>Cue: When contacted as the WWM, then report that I&amp;C maintenance will investigate 2CV-0303.</b></p> |     |  |
| <p><b>Termination criteria: When 2CV-0303 has been closed or at lead examiner's discretion.</b></p>           |     |  |

| Op-Test No.: 2012-1   |          | Scenario No.: 2  | Event No.: 4 |
|---|----------|--|--------------|
| Event Description: Partial Stator water runback. Tech Spec for SRO.   |          |  |              |
| Time  | Position | Applicant's Actions or Behavior  |              |
| Cued by lead examiner   | ANY      | Announce alarm Generator protection Circuit energized and Stator cooling water trouble   |              |
| <b>Cue: After the crew notice the Generator runback has stopped, report as the IAO that near the stator water skid when you heard 2P-25B Stator water pump trip and 2P-25A auto start. State that you were investigating the skid when you heard a check valve slam and 2P-25B then stopped rotating.</b> |          |  |              |
|   | SRO      | Enter and Implement AOP 2203.024, Loss of Turbine Load.  |              |
|   | SRO      | 1. Open Placekeeping page.   |              |
| <b>Examiner note: The SRO should implement the floating step for Generator Protection Circuit energized.</b>  |          |  |              |
|   | SRO      | ■3. Check "Generator Protection Circuit Energized" annunciator (2K02-A4) NOT in alarm.   |              |
|   | ATC      | 3. Perform the following: <p>A. IF Turbine runback in progress, THEN perform EITHER or BOTH of the following for power reduction:</p> <ul style="list-style-type: none"> <li>• Emergency Borate per 2202.010, Exhibit 1, Emergency Boration.</li> <li>• Insert Group 6 OR Group P CEAS per 2105.009, CEDM Control System Operation.</li> </ul> |              |

| Time  | Position   | Applicant's Actions or Behavior  |          |                  |                 |   |                    |   |                          |   |
|---|--|--|----------|------------------|-----------------|---|--------------------|---|--------------------------|---|
| Op-Test No.: 2012-1   |  |  |          |                  |                 |   |                    |   |                          |   |
| Scenario No.: 2   |  |  |          |                  |                 |   |                    |   |                          |   |
| Event No.: 4  |  |  |          |                  |                 |   |                    |   |                          |   |
| Event Description: Partial Stator water runback. Tech Spec for SRO. |  |  |          |                  |                 |   |                    |   |                          |   |
| Emergency Boration  | ATC  | <p>1. Select ONE of the following Emergency Boration flowpaths:</p> <table border="0"> <thead> <tr> <th style="text-align: center;">FLOWPATH</th> <th style="text-align: center;">ACTIONS REQUIRED</th> </tr> </thead> <tbody> <tr> <td>A. Gravity Feed</td> <td>A. Verify at least ONE BAM Tank Gravity Feed valve open: <ul style="list-style-type: none"> <li>• 2CV-4920-1</li> <li>• 2CV-4921-1</li> </ul> </td> </tr> <tr> <td>B. BAM pumps pump.</td> <td>B. 1) Start at least ONE BAM<br/>2) Open Emergency Borate valve (2CV-4916-2).<br/>3) Verify Boric Acid Makeup Flow Control valve (2CV-4926) closed.</td> </tr> <tr> <td>C. RWT to Charging pumps</td> <td>C. Open Charging Pump Suction Source From RWT valve (2CV-4950-2).</td> </tr> </tbody> </table> <p><b>Examiner Note: Gravity Feed is the normal method used for a Stator Water Runback.</b></p> | FLOWPATH | ACTIONS REQUIRED | A. Gravity Feed | A. Verify at least ONE BAM Tank Gravity Feed valve open: <ul style="list-style-type: none"> <li>• 2CV-4920-1</li> <li>• 2CV-4921-1</li> </ul> | B. BAM pumps pump. | B. 1) Start at least ONE BAM<br>2) Open Emergency Borate valve (2CV-4916-2).<br>3) Verify Boric Acid Makeup Flow Control valve (2CV-4926) closed. | C. RWT to Charging pumps | C. Open Charging Pump Suction Source From RWT valve (2CV-4950-2). |
|   | FLOWPATH   | ACTIONS REQUIRED   |          |                  |                 |   |                    |   |                          |   |
|   | A. Gravity Feed  | A. Verify at least ONE BAM Tank Gravity Feed valve open: <ul style="list-style-type: none"> <li>• 2CV-4920-1</li> <li>• 2CV-4921-1</li> </ul>  |          |                  |                 |   |                    |   |                          |   |
|   | B. BAM pumps pump.   | B. 1) Start at least ONE BAM<br>2) Open Emergency Borate valve (2CV-4916-2).<br>3) Verify Boric Acid Makeup Flow Control valve (2CV-4926) closed.  |          |                  |                 |   |                    |   |                          |   |
| C. RWT to Charging pumps  | C. Open Charging Pump Suction Source From RWT valve (2CV-4950-2).  |  |          |                  |                 |   |                    |   |                          |   |
| ATC   | 2. Close VCT Outlet valve (2CV-4873-1).  |  |          |                  |                 |   |                    |   |                          |   |
| ATC   | 3. <u>IF</u> VCT Outlet valve does <u>NOT</u> close, <u>THEN</u> verify BAM Pumps Emergency Boration flowpath selected.<br><b>Examiner Note: This step is N/A</b>  |  |          |                  |                 |   |                    |   |                          |   |
| ATC   | <p>4. Verify Reactor Makeup Water Flow Control valve (2CV-4927) closed.</p> <p>5. Verify at least ONE Charging pump running and charging header flow greater than 40 gpm.</p> <p>6. Verify charging header flow greater than 40 gpm by either of the following:</p> <ul style="list-style-type: none"> <li>• 2FIS-4863 Disch Flow (2C09)</li> <li>• Computer Point F4863 (PDS, PMS or SPDS)</li> </ul> |  |          |                  |                 |   |                    |   |                          |   |

| Op-Test No.: 2012-1   | Scenario No.: 2 | Event No.: 4   |
|---|-----------------|--|
| Event Description: Partial Stator water runback. Tech Spec for SRO. |                 |  |
| Time  | Position        | Applicant's Actions or Behavior  |
| Steps for<br>CEA<br>insertion                                       | ATC             | <p style="text-align: center;"><b>NOTE</b></p> <ul style="list-style-type: none"> <li>• CEA SELECTED indicates selected CEA position.</li> <li>• GROUP SELECTED indicates average position of selected group.</li> <li>• If <math>\geq 6</math> inch deviation occurs in any regulating group, then rod motion is inhibited by PMS CEA sequencing program.</li> </ul> <p>1.0 IF moving CEAs in group,<br/>THEN perform the following at 2C03:</p> <p>1.1 Place Group Select switch to desired group position.</p> <p>1.2 IF moving Group P CEAs,<br/>THEN place P Group Select switch to P.</p> <p>1.3 Ensure Individual CEA Selection switches aligned to CEA in group selected to move.</p> <p>1.4 Place Mode Select switch to MANUAL GROUP (MG) or MANUAL SEQUENTIAL (MS).</p> <p>* 1.5 Observe CEAC and Pulse Counter CEA position indications to verify CEA motion and alignment as CEAs are moved.</p> <p>1.6 Position groups as desired using Manual Control lever.</p> <p>1.7 Place Mode Select switch to OFF.</p> <p>1.8 Verify Pulse Counter and CEAC indications match.</p> |
|   | SRO             | B. Record time Turbine runback complete:   |
|   | ATC             | <p>C. WHEN sufficient boron added,<br/>THEN secure Emergency Boration.</p> <p>D. WHEN sufficient CEAS inserted,<br/>THEN stop CEA insertion.</p>   |

| Time  | Position | Applicant's Actions or Behavior  |
|---|----------|--|
| Op-Test No.: 2012-1   |          |  |
| Scenario No.: 2   |          |  |
| Event No.: 4  |          |  |
| Event Description: Partial Stator water runback. Tech Spec for SRO. |          |  |
| Steps to secure Emergency Boration                                  | ATC      | <p style="text-align: center;"><u>NOTE</u></p> <p>Reactor Engineering assistance may be required to determine shutdown margin.</p> <p>7. WHEN boron concentration greater than minimum required for shutdown margin, THEN perform the following:</p> <p style="margin-left: 40px;">A. Verify VCT level <math>\geq</math> 20%.</p> <p style="margin-left: 40px;">B. Place VCT Outlet valve (2CV-4873-1) in AUTOMATIC.</p> <p style="margin-left: 40px;">C. WHEN 2CV-4873-1 open, THEN perform the following:</p> <p style="margin-left: 80px;">1) Verify BOTH BAM pumps secured.</p> <p style="margin-left: 80px;">2) Verify the following valves closed:</p> <ul style="list-style-type: none"> <li>• 2CV-4920-1</li> <li>• 2CV-4921-1</li> <li>• 2CV-4916-2</li> </ul> <p style="margin-left: 80px;">3) IF 2CV-4950-2 was opened, THEN place handswitch in AUTOMATIC and check that valve closes.</p> |
|   | SRO      | 2. Notify Control Board Operators to monitor floating steps.   |
|   | ATC      | *4. Reduce Reactor power to match TAVE within 2°F of TREF using 2104.003 Exhibit 3, normal boration.   |
|   | ANY      | *5. Check RCS pressure 2025 to 2275 psia.  |
|   | ANY      | *6. Verify SDBCS maintaining SG pressure at setpoint.  |
|   |          | 7. IF Main Turbine has NOT tripped, THEN perform the following: <ul style="list-style-type: none"> <li>• Re-establish Turbine control on Load Limit Pot.</li> <li>• Refer to TRM 3.3.4, Turbine Overspeed Protection.</li> </ul>   |



| Op-Test No.: 2012-1  |          | Scenario No.: 2   | Event No.: 4 |
|--|----------|---|--------------|
| Event Description: Partial Stator water runback. Tech Spec for SRO.  |          |   |              |
| Time   | Position | Applicant's Actions or Behavior   |              |
|  | SRO      | 21. Perform the following as directed by Operations Management: <ul style="list-style-type: none"> <li>• Reload Turbine Generator using 2106.009, Turbine Generator Operations.</li> <li>• Maintain Plant conditions using 2102.004, Power Operation.</li> <li>• Perform Plant Shutdown.</li> </ul> |              |
| <b>Termination Criteria: When reactivity manipulations are satisfied and Turbine load has been re-established on the load limit pot or at the discretion of the lead examiner.</b> |          |   |              |



| Time                                  | Position | Applicant's Actions or Behavior  |
|---------------------------------------|----------|--|
| Vital Auxiliaries safety function     | BOP      | <p>4. Check Maintenance of Vital Auxiliaries satisfied:</p> <p>A. Check Main Turbine tripped by BOTH of the following:</p> <ul style="list-style-type: none"> <li>• ALL Main Stop Valves closed.</li> <li>• Generator megawatts indicate zero.</li> </ul> <p>B. Generator Output breakers open.</p> <p>C. Exciter Field breaker open.</p> <p>D. Check the following valves closed:</p> <ul style="list-style-type: none"> <li>• MSR 2E-12A Steam Supply From SG A (2CV-0400)</li> <li>• MSR 2E-12B Steam Supply From SG B (2CV-0460)</li> </ul> <p>E. At least ONE 6900v AC bus energized</p> <p>F. At least ONE 4160v Non-vital AC bus energized.</p> <p>G. BOTH 4160v Vital AC buses energized.</p> <p>H. BOTH DGs secured.</p> <p>I. At least ONE 125v Vital DC bus energized:</p> <p>2D01 - SPDS point E2D01<br/>2D02 - SPDS point E2D02</p> |
| RCS Inventory Control Safety function | ATC      | <p>5. Check RCS Inventory Control established as follows:</p> <p>A. PZR level:</p> <ul style="list-style-type: none"> <li>• 10 to 80%.</li> <li>• Trending to setpoint. <b>(Will not be met due to ESD Event, perform contingency)</b></li> </ul> <p>B. RCS MTS 30°F or greater.</p>   |

| Time  | Position | Applicant's Actions or Behavior   |
|---|----------|---|
| Op-Test No.: 2012-1   |          |   |
| Scenario No.: 2   |          |   |
| Event No.: 5, 6, 7, & 8   |          |   |
| Event Description: 'B' Reactor Coolant Pump (RCP) trip, Reactor Protection System auto trip failure, Main Steam Safety valve setpoint drifts causing an ESD, and EFW valve 2CV-1025-1 fails to auto close, and 2EFW-1038-2 failed open. 'B' Main feedwater pump trips to allow Steam Generator level to lower for Auto EFW actuation. |          |   |
| RCS Inventory Control Safety function   | SRO      | Direct the following as necessary:<br>A. Perform as necessary:<br>1) <u>IF</u> SIAS actuated on PPS inserts, <u>THEN GO TO</u> Step 6.<br>2) Verify PZR Level Control system restoring level to setpoint.   |
| RCS Pressure Control Safety function  | BOP      | 6. Check RCS Pressure Control:<br>— • 1800 to 2250 psia.<br>— • Trending to setpoint. ( <b>Not met due to ESD Event #7, perform contingency</b> )<br>• Normal PZR Spray and heaters controlling pressure.<br>• Valid CNTMT Spray NOT in progress.   |
| RCS Pressure Control Safety function  | SRO      | Direct the following actions as necessary:<br>6. Perform as necessary:<br>A. <u>IF</u> RCS pressure lowers to less than 1400 psia, <u>THEN</u> trip ONE RCP in EACH loop.<br>D. <u>IF</u> RCP 2P32A or 2P32B stopped, <u>THEN</u> verify associated PZR Spray valve in MANUAL and closed. ( <b>2P-32B spray valve should be verified closed</b> )<br>E. <u>IF</u> RCS pressure lowers to 1650 psia or less, <u>THEN</u> perform the following:<br>1) Verify SIAS actuated on PPS inserts.<br>2) <b>GO TO</b> Step 7.<br>F. Verify PZR Pressure Control system restoring pressure to setpoint. |

| Time  | Position | Applicant's Actions or Behavior   |
|---|----------|---|
| Op-Test No.: 2012-1   |          |   |
| Scenario No.: 2   |          |   |
| Event No.: 5, 6, 7, & 8   |          |   |
| Event Description: 'B' Reactor Coolant Pump (RCP) trip, Reactor Protection System auto trip failure, Main Steam Safety valve setpoint drifts causing an ESD, and EFW valve 2CV-1025-1 fails to auto close, and 2EFW-1038-2 failed open. 'B' Main feedwater pump trips to allow Steam Generator level to lower for Auto EFW actuation. |          |   |
| Core Heat Removal safety function.  | ATC      | 7. Check Core Heat Removal by forced circulation: <ul style="list-style-type: none"> <li>A. At least ONE RCP running.</li> <li>B. CCW flow aligned to RCPs.</li> <li>C. Loop delta T less than 10°F.</li> <li>D. RCS MTS 30°F or greater.</li> <li>E. Check SW aligned to CCW. <b>(SW will not be aligned due to SIAS and should perform contingency)</b></li> <li>F. IF SIAS or MSIS actuated, THEN maintain SW header pressure greater than 85 psig.</li> </ul> |
|   | SRO      | Direct the contingency for step 7. E  |
|   | BOP      | E. IF CCW available, THEN restore SW to CCW, refer to 2202.010 Exhibit 5, CCW/ACW/SW Alignment.   |

| Time                       | Position | Applicant's Actions or Behavior  |
|----------------------------|----------|--|
| Steps to restore SW to CCW | BOP      | <p>1. IF SW suction NOT aligned to lake, THEN RETURN TO procedure in effect.</p> <p>2. IF SW NOT aligned to CCW AND CCW available, THEN perform the following:</p> <p>A. IF RCP seal temperatures less than 180°F, THEN restore SW to CCW by performing the following:</p> <p>1). Override and open at least ONE SW to CCW/ACW Return valve:</p> <ul style="list-style-type: none"> <li>• 2CV-1543-1</li> <li>• 2CV-1542-2</li> </ul>                |
|                            |          | <div style="border: 2px solid black; text-align: center; padding: 5px;"><b>CAUTION</b></div> <p>Supplying ACW flow and CCW cooling from a single SW pump may result in low SW header pressure.</p> <hr/> <p>2). Override and throttle open at least ONE SW to CCW /Main Chillers Supply valve:</p> <ul style="list-style-type: none"> <li>• 2CV-1530-1</li> <li>• 2CV-1531-2</li> </ul> <p>3). Maintain SW header pressure greater than 85 psig.</p> |





| Time                       | Position | Applicant's Actions or Behavior   |
|----------------------------|----------|---|
| Steam<br>Dump<br>Exhibit 3 |          | <p>Op-Test No.: 2012-1</p> <p>Scenario No.: 2</p> <p>Event No.: 5, 6, 7, &amp; 8</p> <p>Event Description: 'B' Reactor Coolant Pump (RCP) trip, Reactor Protection System auto trip failure, Main Steam Safety valve setpoint drifts causing an ESD, and EFW valve 2CV-1025-1 fails to auto close, and 2EFW-1038-2 failed open. 'B' Main feedwater pump trips to allow Steam Generator level to lower for Auto EFW actuation.</p> <p>6.0 IF operation of Upstream Atmospheric Dump valve from the Control Room desired,<br/>THEN perform the following:</p> <p>6.1 Verify selected HIC in MANUAL with ZERO output demand:</p> <ul style="list-style-type: none"> <li>• 2HIC-1001 Upstream Atmospheric Dump valve</li> <li>• 2HIC-1051 Upstream Atmospheric Dump valve</li> </ul> <p>6.2 Place selected valve(s) permissive handswitch in MANUAL:</p> <ul style="list-style-type: none"> <li>• 2CV-1001 Upstream Atmospheric Dump valve (2HS-1001)</li> <li>• 2CV-1051 Upstream Atmospheric Dump valve (2HS-1051)</li> </ul> <p>6.3 IF MSIS actuated,<br/>THEN override actuation for selected MOV isolation:</p> <ul style="list-style-type: none"> <li>• 2CV-1002 ADV Upstream Isolation valve</li> <li>• 2CV-1052 ADV Upstream Isolation valve</li> </ul> <p>* 6.4 Throttle open selected MOV as desired:</p> <ul style="list-style-type: none"> <li>• 2CV-1002 ADV Upstream Isolation valve</li> <li>• 2CV-1052 ADV Upstream Isolation valve</li> </ul> <p>* 6.5 Place selected HIC to desired demand:</p> <ul style="list-style-type: none"> <li>• 2HIC-1001 Upstream Atmospheric Dump valve</li> <li>• 2HIC-1051 Upstream Atmospheric Dump valve</li> </ul> |

| Time                              | Position | Applicant's Actions or Behavior   |
|-----------------------------------|----------|---|
| Containment<br>Safety<br>Function | ANY      | <p>9. Check CNTMT parameters:</p> <p>A. Temperature and Pressure:</p> <ul style="list-style-type: none"> <li>• Temperature less than 140°F.</li> <li>• Pressure less than 16 psia.</li> </ul> <p>B. Check CNTMT Spray pumps secured.</p> <p>C. NO CNTMT radiation alarms or unexplained rise in activity:</p> <ol style="list-style-type: none"> <li>1) CAMS alarms: <ul style="list-style-type: none"> <li>• "CNTMT PART/GAS RAD HI/LO" annunciator (2K10-B6) clear.</li> </ul> </li> <li>2) RCS leakage alarms: <ul style="list-style-type: none"> <li>• "AREA RADIATION HI/LO" annunciator (2K11-B10) clear.</li> <li>• "PROC LIQUID RADIATION HI/LO" annunciator (2K11-C10) clear.</li> </ul> </li> <li>3) Check the following radiation monitors trend stable: <ul style="list-style-type: none"> <li>• CNTMT Area</li> <li>• CAMS</li> <li>• Process Liquid</li> </ul> </li> </ol> <p>D. NO secondary system radiation alarms or unexplained rise in activity:</p> <ol style="list-style-type: none"> <li>1) "SEC SYS RADIATION HI" annunciator (2K11-A10) clear.</li> <li>2) Secondary Systems Radiation monitors trend stable: <ul style="list-style-type: none"> <li>• Main Steam lines</li> <li>• SG Sample</li> <li>• Condenser Off Gas</li> </ul> </li> </ol> |

| Op-Test No.: 2012-1   |          | Scenario No.: 2                                      | Event No.: 5, 6, 7, & 8   |
|---|----------|--|---|
| Event Description: 'B' Reactor Coolant Pump (RCP) trip, Reactor Protection System auto trip failure, Main Steam Safety valve setpoint drifts causing an ESD, and EFW valve 2CV-1025-1 fails to auto close, and 2EFW-1038-2 failed open. 'B' Main feedwater pump trips to allow Steam Generator level to lower for Auto EFW actuation. |          |  |   |
| Time  | Position | Applicant's Actions or Behavior                      |   |
|   | SRO      | 10.  | Notify STA to report to control room.   |
|   |          | 11.  | Direct NLOs to perform 2202.010 Attachment 47, Field Operator Post Trip Actions.  |
|   |          | 12.  | Verify Reactor trip announced on Plant page.  |
|   |          | 13.  | Notify SM to refer to Technical Specifications and 1903.010, Emergency Action Level Classification.   |
| <b>Cue: If contacted as the STA to report to the control room, acknowledge the request.</b><br><b>Cue: If contacted as a NLO to perform Attachment 47 Field Operator Post Trip Actions, acknowledge request.</b>  |          |  |   |
|   | SRO      | 14.  | Direct control board operators to acknowledge ALL annunciators and announce ALL critical alarms.  |
|   | SRO      | 15.  | Check ALL safety function acceptance criteria satisfied. <b>(All safety functions are not satisfied, perform contingency)</b>   |
|   |          | 15.  | <u>IF</u> ANY safety function acceptance criteria <u>NOT</u> satisfied,<br><u>THEN</u> perform the following: <ul style="list-style-type: none"> <li>A. Notify control room staff of safety functions <u>NOT</u> satisfied.</li> <li>B. GO TO Exhibit 8, Diagnostic Actions.</li> </ul> |
|   | SRO      | Diagnose Excess Steam Demand EOP 2202.005            |   |
|   | SRO      | Enter and implement Excess Steam Demand EOP 2202.005 |   |

| Time  | Position | Applicant's Actions or Behavior  |
|---|----------|--|
| Op-Test No.: 2012-1   |          |  |
| Scenario No.: 2   |          |  |
| Event No.: 5, 6, 7, & 8   |          |  |
| Event Description: 'B' Reactor Coolant Pump (RCP) trip, Reactor Protection System auto trip failure, Main Steam Safety valve setpoint drifts causing an ESD, and EFW valve 2CV-1025-1 fails to auto close, and 2EFW-1038-2 failed open. 'B' Main feedwater pump trips to allow Steam Generator level to lower for Auto EFW actuation. |          |  |
|   | SRO      | <p>*1. Confirm diagnosis of Excess Steam Demand as follows:</p> <p>A. Check SFSC acceptance criteria satisfied every 15 minutes.</p> <p>B. IF CCW in service to provide SG Sample Cooler cooling, THEN perform the following:</p> <p>1) IF SG "A" has indicated water level, THEN verify the following SG 'A' Sample Valves open:</p> <ul style="list-style-type: none"> <li>• 2CV-5850</li> <li>• 2CV-5852-2</li> </ul> <p>2) IF SG "B" has indicated water level, THEN verify the following SG 'B' Sample Valves open:</p> <ul style="list-style-type: none"> <li>• 2CV-5858</li> <li>• 2CV-5859-2</li> </ul> <p>C. Notify Chemistry to sample available SGs for activity.</p> |
| <b>Cue: When contacted as Chemistry, then report you will sample both S/G for activity and Monitor RDACS for off site dose releases.</b>  |          |  |
|   | SRO      | 2. Notify SM to refer to Technical Specifications and 1903.010, Emergency Action Level Classification.   |
|   | SRO      | 3. Open Placekeeping Page.   |
|   | SRO      | 4. Notify Control Board Operators to monitor floating steps.   |
|   | ANY      | 5. Verify MSIS actuated on PPS inserts.  |
|   | ANY      | <p>*6. IF SIAS setpoints exceeded by EITHER of the following:</p> <ul style="list-style-type: none"> <li>• RCS pressure 1650 psia or less.</li> <li>• CNTMT pressure 18.3 psia or greater.</li> </ul> <p>THEN verify SIAS and CCAS actuated on PPS inserts.</p>  |
|   | ANY      | *7. Verify actuated ESFAS components using 2202.010, Exhibit 9, ESFAS Actuation.   |

| Op-Test No.: 2012-1   | Scenario No.: 2 | Event No.: 5, 6, 7, & 8   |
|---|-----------------|---|
| Event Description: 'B' Reactor Coolant Pump (RCP) trip, Reactor Protection System auto trip failure, Main Steam Safety valve setpoint drifts causing an ESD, and EFW valve 2CV-1025-1 fails to auto close, and 2EFW-1038-2 failed open. 'B' Main feedwater pump trips to allow Steam Generator level to lower for Auto EFW actuation. |                 |   |
| Time  | Position        | Applicant's Actions or Behavior   |
| Exhibit 9<br>ESFAS<br>actuation.  | BOP             | *1.0 IF any abnormalities noted for affected ESFAS actuation, THEN notify CRS.<br>2.0 IF SIAS, THEN verify the following: <ul style="list-style-type: none"> <li><input type="checkbox"/> Red Train RWT Outlet (2CV-5630-1) open.</li> <li><input type="checkbox"/> Red Train HPSI Pump in service with proper discharge pressure and flow.</li> <li><input type="checkbox"/> Red Train HPSI Injection MOVs open.</li> <li><input type="checkbox"/> Red Train Service Water Pump in service with proper discharge pressure.</li> <li><input type="checkbox"/> Red Train LPSI Pump (2P60A) in service with proper discharge pressure and flow.</li> <li><input type="checkbox"/> Red Train LPSI Injection MOVs open.</li> <li><input type="checkbox"/> Green Train RWT Outlet (2CV-5631-2) open.</li> <li><input type="checkbox"/> Green Train HPSI Pump in service with proper discharge pressure and flow.</li> <li><input type="checkbox"/> Green Train HPSI Injection MOVs open.</li> <li><input type="checkbox"/> Green Train Service Water Pump in service with proper discharge pressure.</li> <li><input type="checkbox"/> Green Train LPSI Pump (2P60B) in service with proper discharge pressure and flow.</li> <li><input type="checkbox"/> Green Train LPSI Injection MOVs open.</li> <li><input type="checkbox"/> Available Charging Pumps in service with proper discharge pressure and flow.</li> <li><input type="checkbox"/> Service Water Outlet Valves open for #1 and #2 EDGs.</li> </ul> 3.0 IF CCAS, THEN verify the following: <ul style="list-style-type: none"> <li><input type="checkbox"/> Red Train CNTMT Coolers in service.</li> <li><input type="checkbox"/> Service Water aligned to Red Train CNTMT Coolers.</li> <li><input type="checkbox"/> Red Train Bypass Dampers open.</li> <li><input type="checkbox"/> Green Train CNTMT Coolers in service.</li> <li><input type="checkbox"/> Service Water aligned to Green Train CNTMT Coolers.</li> <li><input type="checkbox"/> Green Train Bypass Dampers open.</li> </ul> |

| Op-Test No.: 2012-1  | Scenario No.: 2 | Event No.: 5, 6, 7, & 8   |
|--|-----------------|---|
| <p>Event Description: 'B' Reactor Coolant Pump (RCP) trip, Reactor Protection System auto trip failure, Main Steam Safety valve setpoint drifts causing an ESD, and EFW valve 2CV-1025-1 fails to auto close, and 2EFW-1038-2 failed open. 'B' Main feedwater pump trips to allow Steam Generator level to lower for Auto EFW actuation.</p> |                 |   |
| Time   | Position        | Applicant's Actions or Behavior   |
| Exhibit 9<br>ESFAS<br>actuation.   | BOP             | <p>4.0 IF CSAS, THEN verify the following:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Red Train CSS Pump (2P35A) in service with proper discharge pressure and flow.</li> <li><input type="checkbox"/> Red Train CSS Header Isolation (2CV-5612-1) open.</li> <li><input type="checkbox"/> Green Train CSS Pump (2P35B) in service with proper discharge pressure and flow.</li> <li><input type="checkbox"/> Green Train CSS Header Isolation (2CV-5613-2) open.</li> <li><input type="checkbox"/> Main Feedwater Block valves closed.</li> <li><input type="checkbox"/> MSIVs closed.</li> <li><input type="checkbox"/> Main Feed pumps tripped.</li> <li><input type="checkbox"/> Condensate pumps secured.</li> <li><input type="checkbox"/> Heater Drain pumps secured.</li> </ul> <p>5.0 IF MSIS, THEN verify the following:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> MSIVs closed.</li> <li><input type="checkbox"/> Main Feedwater Block valves closed.</li> <li><input type="checkbox"/> Red Train Service Water Pump in service with proper discharge pressure.</li> <li><input type="checkbox"/> Green Train Service Water Pump in service with proper discharge pressure.</li> <li><input type="checkbox"/> Main Feed pumps tripped.</li> <li><input type="checkbox"/> Condensate pumps secured.</li> <li><input type="checkbox"/> Heater Drain pumps secured.</li> </ul> |
|  | SRO             | Should elect to pull up the floating step for Maintain Post cooldown conditions. Step 19 if this was not directed in SPTAs.   |
| Maintain post-cooldown conditions<br><b>CRITICAL TASK</b>  | ATC/BOP         | <p>■19. Maintain RCS post-cooldown conditions as follows:</p> <ul style="list-style-type: none"> <li>A. Maintain RCS temperature by steaming intact SG using EITHER of the following: <ul style="list-style-type: none"> <li>• Upstream ADV.</li> <li>• Upstream ADV Isolation MOV.</li> </ul> </li> <li>B. Control feedwater flow to intact SG using 2202.010 Attachment 46, Establishing EFW Flow.</li> <li>C. Maintain RCS pressure within P-T limits using 2202.010 Attachment 48, RCS Pressure Control.</li> </ul> <p><b>Critical task: Use attachment 48 to maintain RCS pressure within the Pressure-Temperature limits of 200°F and 30°F Margin to Saturation.</b></p>  |

| Time  | Position | Applicant's Actions or Behavior  |
|---|----------|--|
| Op-Test No.: 2012-1   |          |  |
| Scenario No.: 2   |          |  |
| Event No.: 5, 6, 7, & 8   |          |  |
| Event Description: 'B' Reactor Coolant Pump (RCP) trip, Reactor Protection System auto trip failure, Main Steam Safety valve setpoint drifts causing an ESD, and EFW valve 2CV-1025-1 fails to auto close, and 2EFW-1038-2 failed open. 'B' Main feedwater pump trips to allow Steam Generator level to lower for Auto EFW actuation. |          |  |
|   | ANY      | ■8. Restore ESF/Non-ESF systems post-SIAS as follows:<br><br>A. Verify at least ONE SW pump running on EACH loop.  |
|   | ANY      | B. Verify DG SW Outlet valves open.  |
|   | ANY      | C. Verify SW pump suction aligned to Lake.   |
|   | ANY      | D. Check 4160v Non-vital bus 2A1 or 2A2 energized from offsite power.  |
|   | ANY      | E. Check 4160v Vital buses 2A3 AND 2A4 energized from offsite power.   |
|   | BOP      | F. Start SW pumps as needed to maintain SW header pressure.  |
|   | ANY      | G. Check SW to CCW restored.   |
|   | ANY      | H. Check ACW restored. ( <b>Not met, perform contingency</b> )   |
|   | BOP      | H. Restore SW to ACW, refer to 2202.010 Exhibit 5, CCW/ACW/SW Alignment.   |
|   | BOP      | I. Maintain SW header pressure greater than 85 psig.   |
|   | ANY      | *9. Verify Safety Injection flow to RCS as follows:<br><br>A. Check total HPSI flow acceptable using 2202.010 Exhibit 2, HPSI Flow Curve.<br>B. Check total LPSI flow acceptable using 2202.010 Exhibit 3, LPSI Flow Curve.                            |
|   | ANY      | ■10. Check CCW flow aligned to RCPs.   |
|   | ANY      | ■11. Check RCS pressure greater than 1400 psia.  |
|   | ANY      | ■12. WHEN RCS TC less than 510°F,<br>THEN reduce number of running RCPs as follows:<br><br>A. Verify maximum of ONE RCP running in EACH loop.<br><br>B. IF RCP 2P32A or 2P32B stopped,<br>THEN verify associated PZR Spray valve in MANUAL and closed. |
|   | ANY      | 13. Determine most affected SG by comparing the following:<br><br>• SG steam flows.<br>• SG pressures.<br>• SG levels.<br>• RCS TC.  |

| Op-Test No.: 2012-1   |          | Scenario No.: 2  | Event No.: 5, 6, 7, & 8 |
|---|----------|--|-------------------------|
| Event Description: 'B' Reactor Coolant Pump (RCP) trip, Reactor Protection System auto trip failure, Main Steam Safety valve setpoint drifts causing an ESD, and EFW valve 2CV-1025-1 fails to auto close, and 2EFW-1038-2 failed open. 'B' Main feedwater pump trips to allow Steam Generator level to lower for Auto EFW actuation. |          |  |                         |
| Time  | Position | Applicant's Actions or Behavior  |                         |
|   | ANY      | <ul style="list-style-type: none"> <li>■ 17. Isolate most affected SG using 2202.010 Attachment 10, SG Isolation. <ul style="list-style-type: none"> <li>• IF affected SG still pressurized, THEN check MSSVs for affected SG closed by locally checking individual valve tail pipes for leakage.</li> </ul> </li> </ul> |                         |
| <b>Cue: If contacted as the AO, then report after 5 min that the local portions of Attachment 10 for 'A' S/G are complete.</b>  |          |  |                         |
| <b>Termination criteria: Post Cooldown conditions maintained or at the discretion of the lead examiner.</b>   |          |  |                         |

| Op-Test No.: 2012-1   |          | Scenario No.: 2  |  | Event No.: 9               |                                    |            |
|---|----------|--|--|----------------------------|------------------------------------|------------|
| Event Description: 'A' RCP spray valve failed closed.   |          |  |  |                            |                                    |            |
| Time  | Position | Applicant's Actions or Behavior  |  |                            |                                    |            |
|   | ATC      | Recognize that 'A' RCP spray valve is not opening as required to control RCS pressure.         |  |                            |                                    |            |
| Examiner note: If this failure is recognized during the stator water runback the SRO should refer to PZR Malfunctions AOP if needed to open 2CV-4651. Otherwise the guidance is located in Standard Att. 48 which is directed during Post Cooldown control. |          |  |  |                            |                                    |            |
|   | ATC/SRO  | Determine that auxiliary spray is required due to 2CV-4651 normal Spray valve failure to open. |  |                            |                                    |            |
|   | ATC      | 4.0  | IF desired to use AUXILIARY Spray,<br>THEN perform the following:  |                            |                                    |            |
|   | ATC      |  | A. Verify at least ONE Charging pump running.  |                            |                                    |            |
|   | ATC      |  | B. Close Regen HX to RCP B/C valves:   |                            |                                    |            |
|   |          |  | <ul style="list-style-type: none"> <li>• 2CV-4827-2</li> <li>• 2CV-4831-2</li> </ul>   |                            |                                    |            |
|   | ATC      |  | C. Verify PZR Spray (2CV-4651/2CV-4652) or PZR Spray Isolation valves (2HS-4655/2HS-4653) closed.  |                            |                                    |            |
|   | ATC      |  | D. Throttle Aux Spray valve (2CV-4824-2) as necessary.   |                            |                                    |            |
|   | ATC      |  | G. IF Regen HX to RCS (2TI-4825) AND PZR water phase (2TI-4627) differential temperature greater than 200°F, THEN complete Table 1 of this attachment. |                            |                                    |            |
|   | ATC      | TABLE 1  |  |                            |                                    |            |
|   |          | TIME   |  | TEMPERATURE                |                                    |            |
|   |          | SPRAY VALVE OPENED   | SPRAY VALVE CLOSED   | (PZR WATER PHASE) 2TI-4627 | 2TIS-4607<br>2TIS-4608<br>2TI-4825 | DIFFERENCE |
|   |          |  |  |                            |                                    |            |
|   |          |  |  |                            |                                    |            |
|   |          |  |  |                            |                                    |            |
|   |          |  |  |                            |                                    |            |
|   |          |  |  |                            |                                    |            |
|   |          |  |  |                            |                                    |            |

| Op-Test No.: 2012-1   |          | Scenario No.: 2   | Event No.: 9 |
|---|----------|---|--------------|
| Event Description: 'A' RCP spray valve failed closed.   |          |   |              |
| Time  | Position | Applicant's Actions or Behavior   |              |
|   | BOP      | 5.0. IF desired to use PZR Heaters, THEN perform the following:<br><br>A. Cycle available PZR Backup heaters as necessary to control RCS pressure.<br><br>B. Cycle available PZR Proportional heaters as necessary to control RCS pressure. |              |
| <b>Termination criteria: When RCS pressure is being controlled with in the PT limits or at examiner's discretion.</b> |          |   |              |

| Facility: ANO-2  |  | Scenario No.: 3 (New)         |  | Op-Test No.: 2012-1 |  |
|--|--|-------------------------------|--|---------------------|--|
| Examiners:   |  |                               | Operators:   |                     |  |
|  |  |                               |  |                     |  |
|  |  |                               |  |                     |  |
| Initial Conditions:<br>~4% MOL; All Engineered Safety Features systems are in standby. #3 and #4 MTG control valve steam lead valves failed open. Voltage regulator auto tracking circuit is disabled. RED Train Maintenance Week.   |  |                               |  |                     |  |
| Turnover:<br>~4%. 260 EFPD. EOOS indicates 'Minimal Risk'. #3 and #4 MTG control valve steam lead valves failed open. Voltage regulator auto tracking circuit is disabled. RED Train Maintenance Week.<br>2102.004 power operations section 8 complete up to step 8.8. Steps 8.3 and 8.4 continuous actions. Test Team will roll the turbine and sync to the grid at ~10% power. Steam Bypass valve 2CV-0303 is in auto and 2CV-0302 is in manual balancing condenser heat loads.<br>Evolution scheduled: Commence Power Escalation @ <15%/Hr. |  |                               |  |                     |  |
| Event No.  | Malf. No.  | Event Type*                   | Event Description  |                     |  |
| 1  |  | R (ATC)<br>N (BOP)<br>N (SRO) | Commence Power escalation to 10% power for turbine sync.   |                     |  |
| 2  | DI_HS_4966_1<br>DI_HS_4966_2<br>DO_HS_4966_G<br>DO_HS_4966_R | C (ATC)<br>C (SRO)            | 2P-109B reactor makeup water pump trips  |                     |  |
| 3  | NIALINEPWR   |                               | 'A' Nuclear Instrument (NI) fails high. Tech Spec for SRO.                                       |                     |  |
| 4  | XCV2LT4861   | I (ATC)<br>I (SRO)            | Volume Control Tank (VCT) level transmitter fails high.  |                     |  |
| 5  | DI_C40_S72B<br>ESFCIAS1<br>K04-C01<br>K07-C01                | C(BOP)<br>C(SRO)              | Inadvertent Containment Isolation Actuation Signal (CIAS) on the Green Train. Tech Spec for SRO. |                     |  |
| 6  | RCP2P32DUPP<br>RCP2P32DMID<br>RCP2P32DLOW<br>RCLOCATCD       | M (ALL)                       | 'D' RCP seals fail and a 180 gpm RCS leak starts.  |                     |  |
| 7  | CEA15STUCK<br>CEA31STUCK                                     | C (ATC)<br>C (SRO)            | Control Element Assembly's (CEA) 15 and 31 fail to fully insert during the reactor trip.         |                     |  |
| 8  | SIS2P89AX  | C (BOP)<br>C (SRO)            | 2P-89A High Pressure Safety Injection (HPSI) pump has degraded performance.                      |                     |  |
| * (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor   |  |                               |  |                     |  |

Total malfunctions. = 6, Malfunctions after EOP entry = 2, Abnormal events = 3, Major transient = 1, EOPs with substantive actions = 1, EOP Contingencies = 0, Critical tasks = 3.

### Scenario #3 Objectives

- 1) Evaluate individual ability to perform a power escalation.
- 2) Evaluate individual response to a trip of a reactor makeup water pump.
- 3) Evaluate individual response to a failure of Nuclear Instrumentation Channel.
- 4) Evaluate individual response to a failure of a Chemical Volume Control System transmitter failure.
- 5) Evaluate individual response to an Inadvertent Containment Isolation signal.
- 6) Evaluate individual response to Reactor Coolant Pump seal failures and a Reactor Coolant System leak.
- 7) Evaluate individual response to a stuck out CEAs after a Reactor Trip.
- 8) Evaluate individual ability to monitor operation of Engineered Safety Features equipment and respond to a degraded High Pressure Safety Injection pump.
- 9) Evaluate individual ability to mitigate a Loss of Coolant Accident.

### SCENARIO #3 NARRATIVE

Simulator session begins with the plant at ~4% power.

When the crew has completed their control room walk down and brief, they will commence a power escalation using CEAs and dilution of the RCS.

When the required power change has been completed and when cued by lead examiner, 2P-109B reactor make up water pump will trip. This will prevent the crew being able to dilute and raise power. The ATC should coordinate with a NLO to start the other reactor make up water pump 2P-109A.

When 2P-109A reactor makeup water pump has been started and when cued by lead examiner, 'A' NI will fail high. The SRO will enter and implement NI malfunction AOP, 2203.026. The SRO should enter Tech Spec 3.3.1.1 action 2 for RPS. The BOP will be required to bypass the Plant Protection System channel 1 for linear power (point 1), log power (point 2), LPD (point 3), and DNBR (point 4).

When the appropriate Tech spec has been entered and the BOP has bypassed points 1 through 4 and cued by lead examiner; VCT level transmitter 2LT-4861 will fail high. The SRO/ATC should refer/use the Annunciator Corrective action for VCT level low (due to VCT level actually lowering) and the ATC will place the letdown divert valve to the VCT position stopping the RCS mass loss.

After the Crew has place the divert valve to the VCT position and cued by lead examiner, an Inadvertent Containment isolation will occur on the green train causing the CCW to RCP valve and the Main Chilled water to containment valves to close. The SRO will enter Inadvertent CIAS AOP, OP 2203.039. The crew should restore Component Cooling Water (CCW) to RCPs. The SRO will enter Tech Spec 3.6.3.1. for the overridden Containment Isolation valve. The ATC will cycle charging pump to control pressurizer level. The crew should minimize CEA movement due to the loss of cooling. The BOP will start all containment coolers and align Service Water to maintain Containment temperature and pressure in the required band. The SRO should call for maintenance assistance to correct inadvertent green train Containment isolation.

**SCENARIO #3 NARRATIVE (continued)**

When the actions of inadvertent CIAS have been completed or at the lead examiners cue the 'D' RCP seals will fail and a RCS leak will start. The SRO should enter the RCP emergencies AOP, 2203.025 due to the first failed seal. The SRO will contact operations management and continue plant operation based on their recommendation. When the other two seals fail the Crew should trip the reactor and secure 'D' RCP. The crew may also secure 'A' or 'B' RCP to balance RCS flows. The SRO may actuate SIAS and CCAS due to the RCS leak.

The Crew will implement Standard Post Trip Actions (SPTA) EOP, 2202.001. When the reactor trips two CEAs will fail to fully insert which requires emergency boration. The ATC will commence emergency boration. The Crew may lower Steam Dump master controller setpoint during SPTAs to aid in maintaining margin to saturation.

The SRO will diagnose either an Excess RCS leakage and enter Excess RCS leakage AOP, 2203.016, or if SIAS is actuated diagnose Loss of Coolant Accident (LOCA). If Excess RCS is diagnosed the SRO should implement the floating step for leakage greater than 44 gpm then actuate SIAS and CCAS and re-diagnose LOCA. The crew should determine that 2P-89A HPSI pump has degraded discharge pressure and start 2P-89C. The ATC will commence cool down of the RCS and control RCS pressure to restore pressurizer level. The BOP will override Service Water to Component Cooling Water and Auxiliary Cooling Water.

### Simulator Instructions for Scenario 3

Reset simulator to MOL ~4 % power IC stead state.

Ensure that AACG is secured and annunciators clear.

Place MINIMAL RISK, Green Train Protected and RED Train Maintenance Week signs on 2C11.

Volume Control tank level ~60%.

Ensure the SDBCS master is in A/L with a setpoint of 1000 psi

Ensure both main feedwater pumps recirc valves are throttled to ~1 gal/rpm

T1, T2, T3, T4, T5, T6 set to false.

T6 = Reactor Trip

| Event No. | Malf. No.   | Value/<br>Ramp<br>Time   | Event<br>Description   |
|-----------|---|--|--|
| 1         |   |  | Commence Power escalation to 10% power for turbine sync.   |
| 2         | DI_HS_4966_1<br>DI_HS_4966_2<br>DO_HS_4966_G<br>DO_HS_4966_R<br>Trigger = T1    | True<br>False<br>Off<br>Off  | 2P-109B reactor makeup water pump trips  |
| 3         | NIALINEPWR<br>Trigger = T2  | 200%   | 'A' Nuclear Instrument (NI) fails high. Tech Spec for SRO.                                       |
| 4         | XCV2LT4861<br>Trigger = T3  | 100%   | Volume Control Tank (VCT) level transmitter fails high.  |
| 5         | DI_C40_S72B<br>K04-C01<br>K07-C01<br>Trigger = T4<br>ESFCIAS1                   | True<br>ON<br>ON   | Inadvertent Containment Isolation Actuation Signal (CIAS) on the Green Train. Tech Spec for SRO. |
| 6         | RCP2P32DUPP<br>RCP2P32DMID<br><br>RCP2P32DLOW<br><br>RCSLOCATCD<br>Trigger = T5 | 100%<br>100%/<br>delay = 5<br>min.<br><br>100%/<br>delay 5<br>min.<br><br>180<br>gpm/<br>delay 5<br>min. | 'D' RCP seals fail and a 150 gpm RCS leak starts.  |
| 7         | CEA15STUCK<br>CEA31STUCK<br>Trigger = T6  | 0%<br>0%   | Control Element Assembly's (CEA) 15 and 31 fail to fully insert during the reactor trip.         |
| 8         | SIS2P89AX   | 35%  | 2P-89A High Pressure Safety Injection (HPSI) pump has degraded performance.                      |

| <b>Simulator Operator CUEs</b>  |                       |  |
|---|-----------------------|--|
| Cued by<br>lead<br>examiner   | Trigger T1            | 2P-109B reactor makeup water pump trips  |
| <b>Cue: If contacted as NLO to close 2CVC-61A then wait one minute and report 2CVC-61A is closed.</b><br><b>Cue: If contacted as NLO to open 2CVC-61A then wait one minute and report 2CVC-61A is open.</b><br><b>Cue: If contacted as NLO to backseat 2CVC-61A then report 2CVC-61A is back seated.</b><br><b>Cue: When contacted as the WWM, then report that the planners will start planning a work package to repair the reactor make up pump.</b> |                       |  |
| Cued by<br>lead<br>examiner   | Trigger T2            | 'A' Nuclear Instrument (NI) fails high. Tech Spec for SRO.                                       |
| <b>Cue: When contacted as the WWM, then report that I&amp;C will start planning a work package to repair the failed nuclear instrument.</b>   |                       |  |
| Cued by<br>lead<br>examiner   | Trigger T3            | Volume Control Tank (VCT) level transmitter fails high.  |
| <b>Cue: If contacted as NLO to assess 2LT-4861, then report everything looks normal at the transmitter.</b><br><b>Cue: When contacted as the WWM, then report I&amp;C will start planning a work package to repair the failed instrument.</b>   |                       |  |
| Cued by<br>lead<br>examiner   | Trigger T4            | Inadvertent Containment Isolation Actuation Signal (CIAS) on the Green Train. Tech Spec for SRO. |
| <b>Cue: If the contacted as the WWM, then report that I&amp;C will start investigating the inadvertent CIAS</b><br><b>Cue: When contacted as the WWM, then report I&amp;C will monitor CEDM coil temperatures.</b>  |                       |  |
| Cued by<br>lead<br>examiner   | Trigger T5            | 'D' RCP seals fail and a 150 gpm RCS leak starts.  |
|   | Trigger = Rx<br>trip. | Control Element Assembly's (CEA) 15 and 31 fail to fully insert during the reactor trip.         |
|   |                       | 2P-89A High Pressure Safety Injection (HPSI) pump has degraded performance.                      |
| <b>Cue: If contacted as the WCO, then report after 2 min that 2P-89A vibrations are high, casing is extremely hot and it is making an abnormal noise.</b>   |                       |  |

| Op-Test No.: 2012-1   |  | Scenario No.: 3   | Event No.: 1 |
|---|--|---|--------------|
| Event Description: Plant power escalation from ~ 4%.  |  |   |              |
| Time  | Position   | Applicant's Actions or Behavior   |              |
| T=0   | Examiner note: Crew will conduct Reactivity Management Brief per COPD-030 prior to reaching to simulator and may elect to conduct a short re-focus brief in the simulator. |   |              |
|   | SRO  | Direct applicable actions of OP, 2102.004 Power Operations.   |              |
| Procedure Note:   |  |   |              |
| <ul style="list-style-type: none"> <li>• Steps may be performed in any order as plant conditions allow.</li> <li>• Plant parameters may be monitored using Exhibit 2, Various Parameters Vs Reactor Power.</li> <li>• Boron adjustment data for power change may be obtained from Reactivity curves located in Plant Data book.</li> <li>• Applicable steps in this section would be performed following removal of Main Turbine Generator from grid with Reactor maintained critical.</li> </ul> |  |   |              |
|   | SRO/ATC  | * 8.3 During power escalation, use Attachment A of this procedure for ASI control.  |              |
|   | SRO/ATC  | <p>* 8.4 IF any Group 6 or P CEA RSPT inoperable due to spiking, T-Mod, etc., THEN refer to CPC/CEAC Operations (2105.001) to perform the following as required:</p> <ul style="list-style-type: none"> <li>• IF Group 6 or P must be inserted below 138.58 inches AND all inoperable RSPTs in group input to same CEAC, THEN place affected CEAC in INOP in all operable CPCs.</li> <li>• IF Group 6 or P must be inserted below 138.58 inches AND inoperable RSPTs in group input to BOTH CEACs, THEN perform the following: <ul style="list-style-type: none"> <li>- Place BOTH CEACs in INOP in ALL operable CPCs</li> <li>- Restrict usage to Group 6 in accordance with TS 3.1.3.6.</li> </ul> </li> <li>• IF Group 6 or P insertion required due to a transient condition before CEACs can be placed in INOP, THEN declare affected CEACs inoperable when group inserted below 138.58 inches.</li> </ul> |              |
|   | ATC  | <p>8.8 Commence raising power by performing the following as necessary:</p> <ul style="list-style-type: none"> <li>• Dilution using Chemical Addition (2104.003).</li> <li>• CEA withdrawal using CEDMCS Control System Operation (2105.009).</li> </ul>  |              |

|  |   |   |
|--|---|---|
| Op-Test No.: 2012-1  | Scenario No.: 3   | Event No.: 1  |
| Event Description: Plant power escalation from ~ 4%.   |   |   |
| 2105.009 Procedure note:   |   |   |
| <ul style="list-style-type: none"> <li>• CEA SELECTED indicates selected CEA position.</li> <li>• GROUP SELECTED indicates average position of selected group.</li> <li>• If <math>\geq 6</math> inch deviation occurs in any regulating group, then rod motion is inhibited by PMS CEA sequencing</li> </ul>  |   |   |
| <p>1.0 IF moving CEAs in group,<br/>THEN perform the following at 2C03:</p> <p>1.1 Place Group Select switch to desired group position.</p> <p>1.2 IF moving Group P CEAs, THEN place P Group Select switch to P.</p> <p>1.3 Ensure Individual CEA Selection switches aligned to CEA in group selected to move.</p> <p>1.4 Place Mode Select switch to MANUAL GROUP (MG) or MANUAL SEQUENTIAL (MS).</p> <p>*1.5 Observe CEAC and Pulse Counter CEA position indications to verify CEA motion and alignment as CEAs are moved.</p> <p>1.6 Position groups as desired using Manual Control lever.</p> <p>1.7 Place Mode Select switch to OFF.</p> <p>1.8 Verify Pulse Counter and CEAC indications match.</p> <p>2.0 IF moving CEA individually,<br/>THEN perform the following:</p> <p>2.1 Verify Group Select switch selected to group containing individual CEA.</p> <p>2.2 Place Individual CEA Selection switches to desired CEA.</p> <p>2.3 Place Mode Select switch to MANUAL INDIVIDUAL (MI).</p> <p>*2.4 Observe CEAC and Pulse Counter CEA position indications to verify CEA motion and alignment as CEAs are moved.</p> <p>2.5 Position CEA as desired using Manual Control lever.</p> <p>2.6 WHEN individual CEA movement complete,<br/>THEN place Mode Select switch to OFF.</p> <p>2.7 Verify Pulse Counter and CEAC indications match.</p> |  |  |
| <p>Procedure Caution: The following section has been determined to have a Reactivity Addition Potential (RAP) and this activity is classified as a Risk Level R3.</p>  |   |   |

|  |                 |  |
|--|-----------------|--|
| Op-Test No.: 2012-1                                  | Scenario No.: 3 | Event No.: 1   |
| Event Description: Plant power escalation from ~ 4%. |                 |  |
|  |                 | <p>OP-2104.003, Chemical Addition Exhibit 2 for dilution.</p> <ol style="list-style-type: none"> <li>1.0 Verify EITHER Reactor Makeup pump (2P-109A OR 2P-109B) running.</li> <li>2.0 Verify Mode Select switch (2HS-4928) in DILUTE.</li> <li>3.0 Verify Reactor Makeup Water Flow controller (2FIC-4927) set up as follows: <ul style="list-style-type: none"> <li>• In MANUAL OR AUTO.</li> <li>• Demand set to less than Charging flow.</li> </ul> </li> <li>4.0 Verify VCT Makeup Isol valve (2CV-4941-2) open.</li> <li>5.0 Operate Reactor Makeup Water Flow Batch controller (2FQIS-4927) as follows: <ol style="list-style-type: none"> <li>5.1 Depress Red pushbutton.</li> <li>5.2 Verify 2FQIS-4927 set for desired quantity.</li> <li>5.3 Verify 2FIC-4927 indicates desired flow rate.</li> </ol> </li> <li>* 6.0 Monitor the following parameters: <ul style="list-style-type: none"> <li>• RCS Tave</li> <li>• Axial Shape Index</li> <li>• Reactor power</li> </ul> </li> <li>7.0 IF desired to terminate dilution,<br/>THEN reset 2FQIS-4927 to zero.</li> <li>8.0 WHEN 2FQIS-4927 at zero,<br/>THEN verify the following: <ul style="list-style-type: none"> <li>• RMW Flow Control valve (2CV-4927) closes.</li> <li>• No flow indicated on 2FIC-4927.</li> </ul> </li> <li>9.0 Repeat steps 5.0 through 8.0 as required.</li> <li>10.0 Close 2CV-4941-2.</li> <li>11.0 Verify 2FQIS-4927 Batch Volume placard updated to current batch volume.</li> </ol> |

|  |     |                 |   |
|--|-----|-----------------|---|
| Op-Test No.: 2012-1                                  |     | Scenario No.: 3 | Event No.: 1  |
| Event Description: Plant power escalation from ~ 4%. |     |                 |   |
|  | ANY | * 8.9           | Monitor CPC Raw Powers using PQASI screen on PMS.   |
|  | BOP | * 8.12          | Maintain the following limits while Raising power using Turbine Generator Operations (2106.009) OR SDBCS: <ul style="list-style-type: none"> <li>• Tref within <math>\pm 2^{\circ}\text{F}</math> of program Tave (Exhibit 1, TAVE VS TREF).</li> <li>• Power escalation limits of Attachment A of this procedure.</li> </ul>   |
|  | SRO | 8.13            | WHEN Reactor power greater than 5%,<br>THEN perform the following: (N/A if Mode 2 was not entered) <ul style="list-style-type: none"> <li>• Verify PMS Mode correct on Plant Mode Assignment (PMA).</li> <li>• Record entry into Mode 1 in Station log.</li> <li>• Make open item Station Log entry; "RCS Lithium required to be within its proper control band within the next 24 hours - ____/____." <p style="text-align: center;">Time    Date</p> </li> <li>• Make Shift Relief Sheet entry; "RCS Lithium required to be within its proper control band within the next 24 hours - ____/____." <p style="text-align: center;">Time    Date</p> </li> </ul> |
|  | ANY | 8.15            | Verify Emergency Feedwater NOT in service: <ul style="list-style-type: none"> <li>• 2P-7A</li> <li>• 2P-7B</li> </ul>   |
|  | ANY | 8.16            | Verify Auxiliary Feedwater (2P-75) NOT in service.  |
|  | ANY | 8.17            | Prior to exceeding 10% power, lock closed EFW Pumps Suction from S/U & Blowdown DI (2EFW-0706). <ul style="list-style-type: none"> <li>• Verify 2EFW-0706 closed using indication on 2C33.</li> </ul>   |

|  |                 |  |
|--|-----------------|--|
| Op-Test No.: 2012-1  | Scenario No.: 3 | Event No.: 1   |
| Event Description: Plant power escalation from ~ 4%.   |                 |  |
|  |                 | <p>8.18 Perform the following prior to exceeding 10% raw neutron flux average power on any CPC:</p> <p>8.18.1 IF PQASI (PID 266) <math>&lt; \pm 0.4</math> on ALL operable CPCs, THEN power escalation may continue.</p> <p>8.18.2 IF PQASI (PID 266) <math>&gt; \pm 0.4</math> on ANY operable CPC, THEN raise power as directed by Shift Manager and Reactor Engineering.</p> <p>*8.18.3 IF PQASI (PID 266) greater than + 0.44 OR less than - 0.48 on any operable CPC, THEN DO NOT exceed 14% power.</p> |
| <p><b>Termination criteria: When reactivity manipulations are satisfied or at the discretion of the lead examiner.</b></p> |                 |  |

| Op-Test No.: 2012-1   |  |          | Scenario No.: 3 |  |  | Event No.: 2 |  |  |
|---|--|----------|-----------------|--|--|--------------|--|--|
| Event Description: 2P-109B reactor makeup water pump trips  |  |          |                 |  |  |              |  |  |
| Time  |  | Position |                 | Applicant's Actions or Behavior  |  |              |  |  |
| Cued by lead examiner   |  | ANY      |                 | Announce annunciators:<br>2K12-J4 RMW PUMP TO BLENDER FLOW HI/LO<br><b>Examiner note: 2K12-J4 may not annunciate if the crew is not currently diluting the RCS.</b>  |  |              |  |  |
|   |  | ANY      |                 | Crew will recognize that 2P-109B has tripped.  |  |              |  |  |
| 2K12-J4<br>ACA steps  |  | ATC      |                 | 2.1 Check flow on 2FIC-4927.   |  |              |  |  |
|   |  | ANY      |                 | 2.3 IF no flow indicated in MANUAL,<br>THEN perform the following:<br><br>2.3.1 Verify Reactor Makeup Water pump (2P-109A or<br>2P-109B) running using Chemical Addition (2104.003).   |  |              |  |  |
|   |  | ATC      |                 | <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: 80%;"> <p style="text-align: center;"><b><u>NOTE</u></b></p> <p>2P-109 pumps are normally run in manual with one pump handswitch in START and the other in STOP. 2P-109 Select switch (2HS-4967) position is only applicable if the selected pump handswitch in is AUTO. If in AUTO the pump would be started by the Makeup Mode select switch (2HS-4928)</p> </div> <p>13.1 IF BOTH Reactor Makeup Water pumps (2P-109A AND 2P-109B) secured,<br/>THEN perform the following to start selected pump:</p> |  |              |  |  |
|   |  | ANY      |                 | Direct NLO to close valve locally.<br>13.1.1 Close Discharge Stop Check for pump to be started:<br><br><ul style="list-style-type: none"> <li>• 2P-109A (2CVC-61A)</li> <li>• 2P-109B (2CVC-61B)</li> </ul>  |  |              |  |  |
| <b>Cue: If contacted as NLO to close 2CVC-61A then wait one minute and report 2CVC-61A is closed.</b> |  |          |                 |  |  |              |  |  |
|   |  | ATC      |                 | 13.1.2 Place 2P-109 Pump Select switch (2HS-4967) to pump that will NOT be started.  |  |              |  |  |

|  |     |   |
|--|-----|---|
|  | ATC | 13.1.3 Verify handswitch for pump NOT being started in STOP: <ul style="list-style-type: none"> <li>• 2P-109A (2HS-4965)</li> <li>• 2P-109B (2HS-4966)</li> </ul>   |
|  | ATC | 13.1.4 Start selected pump by placing handswitch to START: <ul style="list-style-type: none"> <li>• 2P-109A (2HS-4965)</li> <li>• 2P-109B (2HS-4966)</li> </ul>   |
|  | ANY | Direct NLO to close valve locally.<br>13.1.5 Slowly open pump Discharge Stop Check for pump started: <ul style="list-style-type: none"> <li>• 2P-109A (2CVC-61A)</li> <li>• 2P-109B (2CVC-61B)</li> </ul>   |
|  | ANY | Direct NLO to back seat 2CVC-61A<br>13.1.6 WHEN header pressurized,<br>THEN fully open AND backseat selected Discharge Stop Check to prevent it from vibrating closed: <ul style="list-style-type: none"> <li>• 2P-109A (2CVC-61A)</li> <li>• 2P-109B (2CVC-61B)</li> </ul> |
| <p><b>Cue: If contacted as NLO to open 2CVC-61A then wait one minute and report 2CVC-61A is open.</b></p> <p><b>Cue: If contacted as NLO to backseat 2CVC-61A then report 2CVC-61A is back seated.</b></p> |     |   |
|  | SRO | 8. Notify WWM of Nuclear Instrument malfunctions.   |
| <p><b>Cue: When contacted as the WWM, then report that the planners will start planning a work package to repair the reactor make up pump.</b></p>   |     |   |
| <p><b>Termination criteria: When 2P-109A reactor make up water pump has been started or at lead examiner's discretion.</b></p>   |     |   |

| Op-Test No.: 2012-1   |          |  | Scenario No.: 3 |  |  | Event No.: 3 |  |  |
|---|----------|--|-----------------|--|--|--------------|--|--|
| Event Description: 'A' Nuclear Instrument (NI) fails high. Tech Spec for SRO. |          |  |                 |  |  |              |  |  |
| Time  | Position | Applicant's Actions or Behavior  |                 |  |  |              |  |  |
| Cued by lead examiner   | ANY      | Announce annunciators:<br>2K04-A4 CH A RPS/ESF/PRETRIP/TRIP<br>2K04-B3 PPS Channel TRIP<br>2K04 H4 CPC channel sensor failure  |                 |  |  |              |  |  |
|   | ANY      | Crew will recognize that 'A' excore has failed High.   |                 |  |  |              |  |  |
|   | SRO      | Enter and Implement AOP 2203.026, NI Malfunction.  |                 |  |  |              |  |  |
|   | ANY      | 1. Check at least TWO Linear Safety channels operable.   |                 |  |  |              |  |  |
|   | ANY      | 2. Check ALL Linear Safety channels operable. ( <b>Channel 'A' will not be operable</b> )  |                 |  |  |              |  |  |
|   | SRO      | 2. IF ALL Linear Safety channels NOT operable, THEN perform the following:<br><br>A. Refer to TS 3.3.1.1, Reactor Protective Instrumentation.<br><b>Examiner note: SRO must enter Tech Spec 3.3.1.1 action 2</b>   |                 |  |  |              |  |  |
|   | BOP      | C. IF ONLY ONE channel failed, THEN verify the following trip functions bypassed:<br><ul style="list-style-type: none"> <li>• Hi Linear Power {1}</li> <li>• High LPD {3}</li> <li>• Low DNBR {4}</li> </ul>   |                 |  |  |              |  |  |
|   | SRO      | D. GO TO Step 4.   |                 |  |  |              |  |  |
|   | ANY      | 4. Check ALL Log Power channels operable. ( <b>Channel 'A' will not be operable</b> )  |                 |  |  |              |  |  |
|   | SRO      | 4. IF ALL Log Power channels NOT operable, THEN perform the following:<br>A. IF Log Power channel #2 failed, THEN refer to TS 3.3.3.5, Remote Shutdown Instrumentation.<br><br>B. Refer to TS 3.3.1.1, Reactor Protective Instrumentation.<br><b>Examiner note: Tech Spec 3.3.3.5 is not applicable.</b> |                 |  |  |              |  |  |

|  |     |   |
|--|-----|---|
|  | BOP | <p>D. IF ONLY ONE Log Power channel failed, AND associated Linear Safety channel failed, THEN verify the following trip functions bypassed:</p> <ul style="list-style-type: none"> <li>• Hi Linear Power {1}</li> <li>• Hi Log Power {2}</li> <li>• High LPD {3}</li> <li>• Low DNBR {4}</li> </ul>   |
|  | BOP | <p>Bypass the points 1, 2, 3, and 4 on Channel A IAW 2105.001 CPC/CEAC operations section 11:</p> <p>11.1 Refer to Tech Spec 3.3.1.1, 3.3.2.1, 3.3.3.5, 3.3.3.6 and TRM 3.3.1.1.</p> <p>11.2 Circle channel and functional units (points) to be bypassed below:<br/>Channel to be bypassed: (A) B C D<br/>Points to be bypassed:<br/>(1 2 3 4) 5 6 7 8 9 10 11 12 13 16 17 18 19 20</p> <p>11.3 Enter appropriate Tech Spec/TRM actions.</p> <p>11.4 Verify points to be bypassed <u>NOT</u> bypassed in ANY other channel.</p> <p>11.5 Place desired points in BYPASS for selected channel on 2C23.</p> <p><b>Examiners Note: Key 12 required.</b></p> |
|  | SRO | 8. Notify I&C of Nuclear Instrument malfunctions.   |
| <p><b>Cue: When contacted as the WWM, then report that I&amp;C will start planning a work package to repair the failed nuclear instrument.</b></p> |     |   |
| <p><b>Termination criteria: Affected channel points placed in bypass or at lead examiner's discretion.</b></p>                                     |     |   |



| Op-Test No.: 2012-1   |          | Scenario No.: 3  | Event No.: 5 |
|---|----------|--|--------------|
| Event Description: Inadvertent Containment Isolation Actuation Signal (CIAS) on the Green Train.<br>Tech Spec for SRO.  |          |  |              |
| Time  | Position | Applicant's Actions or Behavior  |              |
| Cued by lead examiner   | ANY      | Announce alarms for CIAS ACT 2K04-C1 and 2K07-C1 and CCW DISCH FLOW LO 2K-11 A1, A3, A5, A7  |              |
| <b>Examiner note: CCW DISCH FLOW LO alarm is an entry criteria to both RCP emergencies and Inadvertent CIAS. The SRO may enter RCP emergencies to restore CCW to the RCPs but after restoration of CCW to the RCPs, the SRO should complete the actions in Inadvertent CIAS</b> |          |  |              |
|   | SRO      | Enter and Implement AOP 2203.039, Inadvertent CIAS.  |              |
|   | SRO      | *1. IF Reactor tripped, THEN verify 2202.001, Standard Post Trip Actions complete.<br><b>Examiner note: The Reactor will not be tripped.</b>   |              |
|   | SRO      | 2. Record start time. _____  |              |
|   | ANY      | 3. Check CNTMT pressure has NOT exceeded 18.3 psia.  |              |
|   | SRO      | *4. IF CCW to RCPs can NOT be restored within 10 minutes, THEN perform the following:<br><b>Examiner note: The SRO will pass by this step to restore CCW to the RCPs.</b>  |              |
|   | ANY      | 5. Restore CCW to RCPs as follows:<br>A. Check ALL Controlled Bleedoff temperatures less than 180°F.   |              |
| <b>Critical Task:</b><br>Restore CCW to RCPs within 10 minutes.   | BOP      | B. Restore CCW to RCPs as follows:<br><br>1) Override and open RCP CCW Supply valve (2CV-5236-1).<br>2) Override and open RCP CCW Return valve (2CV-5254-2).<br>3) Override and open RCP CCW Return Header Isolation valve (2CV-5255-1).           |              |
|   | SRO      | C. Refer to Tech Spec 3.6.3.1, Containment Isolation Valves.<br><br><b>Examiner note: The SRO must enter 3.6.3.1 for Containment Isolation Valves due to the CCW to RCP valves being overridden which renders the ability to close inoperable.</b> |              |

| Op-Test No.: 2012-1  |  |          | Scenario No.: 3 |  |  | Event No.: 5 |  |  |
|--|--|----------|-----------------|--|--|--------------|--|--|
| Event Description: Inadvertent Containment Isolation Actuation Signal (CIAS) on the Green Train.<br>Tech Spec for SRO. |  |          |                 |  |  |              |  |  |
| Time   |  | Position |                 | Applicant's Actions or Behavior  |  |              |  |  |
|  |  | ANY      |                 | *6. Check ALL RCP bearing and motor temperature annunciators clear: <ul style="list-style-type: none"> <li>• "UPPER THRUST BRG METAL TEMP HI" (2K11-B1/B3/B5/B7).</li> <li>• "LOWER THRUST BRG METAL TEMP HI" (2K11-B2/B4/B6/B8).</li> <li>• "STATOR WDG TEMP HI" (2K11-A2/A4/A6/A8).</li> </ul>   |  |              |  |  |
|  |  | ANY      |                 | *7. Minimize CEA movement.   |  |              |  |  |
|  |  | ATC      |                 | *8. Maintain PZR Level within 5% of setpoint as follows: <ul style="list-style-type: none"> <li>A. Cycle Charging pumps as needed.</li> <li>B. Record charging header data using 2202.010, Standard Attachment 44, Charging Header Data.</li> </ul>  |  |              |  |  |
|  |  | ATC      |                 | *9. Maintain VCT level 60 to 75%, refer to 2104.003, Chemical Addition.  |  |              |  |  |
|  |  | ANY      |                 | *10. Check CNTMT temperature and pressure stable.<br><b>Examiner note: CNTMT temperature and pressure will be rising due to chilled water isolation.</b>   |  |              |  |  |
|  |  | BOP      |                 | *10. IF CNTMT temperature OR pressure rising, THEN perform the following: <ul style="list-style-type: none"> <li>A. Verify CNTMT Coolers aligned as follows:               <ul style="list-style-type: none"> <li>1) ALL available CNTMT Cooling fans running:                   <ul style="list-style-type: none"> <li>• 2VSF-1A</li> <li>• 2VSF-1B</li> <li>• 2VSF-1C</li> <li>• 2VSF-1D</li> </ul> </li> <li>2) BOTH SW Cooling Inlet valves open:                   <ul style="list-style-type: none"> <li>• 2CV-1511-1</li> <li>• 2CV-1510-2</li> </ul> </li> <li>3) BOTH SW Cooling Outlet valves open:                   <ul style="list-style-type: none"> <li>• 2CV-1519-1</li> <li>• 2CV-1513-2</li> </ul> </li> </ul> </li> </ul> |  |              |  |  |
|  |  | ANY      |                 | B. Refer to TS 3.6.1.4 Internal Pressure, Air Temperature and Relative Humidity.   |  |              |  |  |

| Op-Test No.: 2012-1  |          | Scenario No.: 3   | Event No.: 5 |
|--|----------|---|--------------|
| Event Description: Inadvertent Containment Isolation Actuation Signal (CIAS) on the Green Train.<br>Tech Spec for SRO.   |          |   |              |
| Time   | Position | Applicant's Actions or Behavior   |              |
|  | SRO      | 11. Reset CIAS on PPS panels as follows:<br><b>Examiner note: CIAS inadvertently actuated thus can not be reset by the operators, they may attempt to reset CIAS but it will not reset.</b>   |              |
| <b>Examiner note: 2C-39 ESFAS panel in to fully modeled in the simulator. If the applicant tries to assess the status of the panel then give them the following cue.</b> |          |   |              |
| <b>Examiner Cue: If the applicant tries to assess 2C-39 ESFAS panel then inform the applicant that all the light on 2C-39 are on.</b>                                    |          |   |              |
| <b>Cue: If the contacted as the WWM, then report that I&amp;C will start investigating the inadvertent CIAS</b>  |          |   |              |
|  | SRO      | 11. IF CIAS actuation can NOT be reset, THEN GO TO Step 13.   |              |
|  | SRO      | 13. IF CIAS actuation can NOT be reset, THEN perform the following:<br>A. Check Plant in Mode 1 or 2.<br>B. Minimize CEA movement.  |              |
|  | ATC      | C. Notify I&C to monitor CEDM coil temperatures.<br>D. IF I&C NOT available, THEN refer to 2105.009 Exhibit #2, CEA #01 Upper Gripper Coil Temperature Measurement to determine CEDM coil temperatures.<br>E. Contact System Engineer for assistance.<br>F. IF coil temperatures are projected to be >450°F for an extended period AND restoration of CEDM Cooling is NOT imminent, THEN commence a Plant Shutdown.<br>G. IF CEDM System Engineer NOT available, AND coil temperatures exceed 500°F, THEN perform the following:<br>1) Trip Reactor.<br>2) GO TO 2202.001, Standard Post Trip Actions.<br>H. WHEN CIAS has been reset, THEN continue with this procedure. |              |
| <b>Termination Criteria: When Service water has been aligned to the CNTMT coolers or at the discretion of the lead examiner.</b>   |          |   |              |

| Op-Test No.: 2012-1   |  |          | Scenario No.: 3 |   |  | Event No.: 6 & 7 |  |  |
|---|--|----------|-----------------|---|--|------------------|--|--|
| Event Description: 'D' RCP seals fail and a 180 gpm RCS leak starts, and Control Element Assembly's (CEA) 15 and 31 fail to fully insert during the reactor trip. |  |          |                 |   |  |                  |  |  |
| Time  |  | Position |                 | Applicant's Actions or Behavior   |  |                  |  |  |
| Cued by lead examiner   |  | ANY      |                 | Announce 2K-11 G-3 RCP bleedoff flow hi lo alarm.   |  |                  |  |  |
|   |  | ANY      |                 | Determine that 'D' RCP is the affected RCP and one seal is failed.  |  |                  |  |  |
|   |  | SRO      |                 | Enter and Implement AOP 2203.025, RCP Emergencies.  |  |                  |  |  |
|   |  | SRO      |                 | *1. Check the following criteria for EACH RCP satisfied:<br>D. Seal Stage $\Delta P$ greater than 50 psid.  |  |                  |  |  |
|   |  | SRO      |                 | D. GO TO Step 5.  |  |                  |  |  |
|   |  | ANY      |                 | *5. Check $\Delta P$ across EACH RCP Seal stage greater than 50 psid.   |  |                  |  |  |
|   |  | ANY      |                 | *5. Perform the following:<br><br>A. IF ONLY ONE stage failed, THEN perform the following:<br>1) Monitor RCP Controlled Bleedoff flow and temperature.<br>2) Notify Operations Management.<br><br><b>Examiner note: The other two RCP seals will fail after a 5 minute delay.</b> |  |                  |  |  |
| <b>Critical Task:</b><br>Securing 'D' RCP within 10 minutes of the reactor trip.  |  | ATC      |                 | C. IF THREE or more stages failed on ONE pump, THEN perform the following:<br>1) IF in Mode 1 OR 2, THEN trip Reactor.<br>2) Stop any affected RCP.   |  |                  |  |  |
|   |  | ATC      |                 | 3) IF only one RCP affected, AND desired to balance reactor coolant loop temperatures, THEN verify one RCP secured in each loop.  |  |                  |  |  |
|   |  | ATC      |                 | 4) IF RCP 2P32A OR 2P32B stopped, THEN verify associated PZR Spray valve in MANUAL and closed:<br><br>• 2CV-4651<br>• 2CV-4652  |  |                  |  |  |
|   |  | ALL      |                 | 5) IF Reactor was manually tripped, THEN GO TO 2202.001, Standard Post Trip Actions.  |  |                  |  |  |

| Op-Test No.: 2012-1   |   | Scenario No.: 3   | Event No.: 6 & 7 |          |                  |                 |   |              |   |                          |   |
|---|---|---|------------------|----------|------------------|-----------------|---|--------------|---|--------------------------|---|
| Event Description: 'D' RCP seals fail and a 180 gpm RCS leak starts, and Control Element Assembly's (CEA) 15 and 31 fail to fully insert during the reactor trip. |   |   |                  |          |                  |                 |   |              |   |                          |   |
| Time  | Position  | Applicant's Actions or Behavior   |                  |          |                  |                 |   |              |   |                          |   |
|   | SRO   | Enter and implement EOP 2202.001, Standard Post Trip Actions.   |                  |          |                  |                 |   |              |   |                          |   |
|   | SRO   | <ol style="list-style-type: none"> <li>1. Notify Control Board Operators to monitor safety functions using Exhibit 7, CBO Reactor Trip Checklist.</li> <li>2. Open Safety Function Tracking page.</li> </ol>  |                  |          |                  |                 |   |              |   |                          |   |
| Reactivity control safety function  | ATC   | <ol style="list-style-type: none"> <li>3. Check Reactivity Control established as follows: <ul style="list-style-type: none"> <li>_____ A. Reactor power lowering.</li> <li>_____ B. ALL CEAs fully inserted by observing ANY of the following: <ol style="list-style-type: none"> <li>1) CEA Rod bottom lights illuminated.</li> <li>2) CEAC 1 indicates ALL CEAs fully inserted.</li> <li>3) CEAC 2 indicates ALL CEAs fully inserted.</li> </ol> </li> </ul> </li> </ol> <p><b>(Not met due to Event #7, perform contingency)</b></p>  |                  |          |                  |                 |   |              |   |                          |   |
| Reactivity control safety function  | SRO   | Direct ATC to perform emergency boration in progress using Exhibit 1, Emergency Boration. <p>_____ B. Verify emergency boration in progress using Exhibit 1, Emergency Boration.</p> <p><b>Examiner note: The SRO may discuss Tech Spec 3.1.1.1 for Shutdown Margin.</b></p>  |                  |          |                  |                 |   |              |   |                          |   |
| Emergency Boration  | ATC   | <ol style="list-style-type: none"> <li>1. Select ONE of the following Emergency Boration flowpaths: <table border="0" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center; width: 40%;">FLOWPATH</th> <th style="text-align: center; width: 60%;">ACTIONS REQUIRED</th> </tr> </thead> <tbody> <tr> <td style="vertical-align: top;">A. Gravity Feed</td> <td style="vertical-align: top;"> A. Verify at least ONE BAM Tank Gravity Feed valve open: <ul style="list-style-type: none"> <li>• 2CV-4920-1</li> <li>• 2CV-4921-1</li> </ul> </td> </tr> <tr> <td style="vertical-align: top;">B. BAM pumps</td> <td style="vertical-align: top;"> B. <ol style="list-style-type: none"> <li>1) Start at least ONE BAM pump.</li> <li>2) Open Emergency Borate valve (2CV-4916-2).</li> <li>3) Verify Boric Acid Makeup Flow Control valve (2CV-4926) closed.</li> </ol> </td> </tr> <tr> <td style="vertical-align: top;">C. RWT to Charging pumps</td> <td style="vertical-align: top;"> C. Open Charging Pump Suction Source From RWT valve (2CV-4950-2).</td> </tr> </tbody> </table> </li> </ol> <p><b>Critical Task: Emergency Boration must be started prior to completion of SPTAs</b></p> |                  | FLOWPATH | ACTIONS REQUIRED | A. Gravity Feed | A. Verify at least ONE BAM Tank Gravity Feed valve open: <ul style="list-style-type: none"> <li>• 2CV-4920-1</li> <li>• 2CV-4921-1</li> </ul> | B. BAM pumps | B. <ol style="list-style-type: none"> <li>1) Start at least ONE BAM pump.</li> <li>2) Open Emergency Borate valve (2CV-4916-2).</li> <li>3) Verify Boric Acid Makeup Flow Control valve (2CV-4926) closed.</li> </ol> | C. RWT to Charging pumps | C. Open Charging Pump Suction Source From RWT valve (2CV-4950-2). |
| FLOWPATH  | ACTIONS REQUIRED  |   |                  |          |                  |                 |   |              |   |                          |   |
| A. Gravity Feed   | A. Verify at least ONE BAM Tank Gravity Feed valve open: <ul style="list-style-type: none"> <li>• 2CV-4920-1</li> <li>• 2CV-4921-1</li> </ul>   |   |                  |          |                  |                 |   |              |   |                          |   |
| B. BAM pumps  | B. <ol style="list-style-type: none"> <li>1) Start at least ONE BAM pump.</li> <li>2) Open Emergency Borate valve (2CV-4916-2).</li> <li>3) Verify Boric Acid Makeup Flow Control valve (2CV-4926) closed.</li> </ol> |   |                  |          |                  |                 |   |              |   |                          |   |
| C. RWT to Charging pumps  | C. Open Charging Pump Suction Source From RWT valve (2CV-4950-2).   |   |                  |          |                  |                 |   |              |   |                          |   |

| Op-Test No.: 2012-1   |  |          | Scenario No.: 3 |   |  | Event No.: 6 & 7 |  |  |
|---|--|----------|-----------------|---|--|------------------|--|--|
| Event Description: 'D' RCP seals fail and a 180 gpm RCS leak starts, and Control Element Assembly's (CEA) 15 and 31 fail to fully insert during the reactor trip. |  |          |                 |   |  |                  |  |  |
| Time  |  | Position |                 | Applicant's Actions or Behavior   |  |                  |  |  |
| Emergency Boration  |  | ATC      |                 | 2. Close VCT Outlet valve (2CV-4873-1).   |  |                  |  |  |
|   |  | ATC      |                 | 4. Verify Reactor Makeup Water Flow Control valve (2CV-4927) closed.<br>5. Verify at least ONE Charging pump running and charging header flow greater than 40 gpm.  |  |                  |  |  |
| Vital Auxiliaries safety function   |  | BOP      |                 | 4. Check Maintenance of Vital Auxiliaries satisfied:<br>A. Check Main Turbine tripped by BOTH of the following: <ul style="list-style-type: none"> <li>• ALL Main Stop Valves closed.</li> <li>• Generator megawatts indicate zero.</li> </ul> B. Generator Output breakers open. ( <b>Generator output breakers will be closed due to plant alignment, perform contingency to open them</b> )<br>C. Exciter Field breaker open.<br>D. Check the following valves closed: <ul style="list-style-type: none"> <li>• MSR 2E-12A Steam Supply From SG A (2CV-0400)</li> <li>• MSR 2E-12B Steam Supply From SG B (2CV-0460)</li> </ul> E. At least ONE 6900v AC bus energized<br>F. At least ONE 4160v Non-vital AC bus energized.<br>G. BOTH 4160v Vital AC buses energized.<br>H. BOTH DGs secured.<br>I. At least ONE 125v Vital DC bus energized:<br><br>2D01 - SPDS point E2D01<br>2D02 - SPDS point E2D02 |  |                  |  |  |

| Op-Test No.: 2012-1   |  |          | Scenario No.: 3 |  |  | Event No.: 6 & 7 |  |  |
|---|--|----------|-----------------|--|--|------------------|--|--|
| Event Description: 'D' RCP seals fail and a 180 gpm RCS leak starts, and Control Element Assembly's (CEA) 15 and 31 fail to fully insert during the reactor trip. |  |          |                 |  |  |                  |  |  |
| Time  |  | Position |                 | Applicant's Actions or Behavior  |  |                  |  |  |
| RCS Inventory Control Safety function   |  | ATC      |                 | 5. Check RCS Inventory Control established as follows: <ul style="list-style-type: none"> <li>A. PZR level:               <ul style="list-style-type: none"> <li>• 10 to 80%.</li> <li>• Trending to setpoint. (<b>Will not be met due to LOCA Event #6, perform contingency</b>)</li> </ul> </li> <li>B. RCS MTS 30°F or greater.</li> </ul>  |  |                  |  |  |
| RCS Inventory Control Safety function   |  | SRO      |                 | Direct the following as necessary: <ul style="list-style-type: none"> <li>A. Perform as necessary:               <ul style="list-style-type: none"> <li>1) <u>IF</u> SIAS actuated on PPS inserts, <u>THEN GO TO</u> Step 6.</li> <li>2) Verify PZR Level Control system restoring level to setpoint.</li> </ul> </li> </ul>   |  |                  |  |  |
| RCS Pressure Control Safety function  |  | BOP      |                 | 6. Check RCS Pressure Control: <ul style="list-style-type: none"> <li>— • 1800 to 2250 psia.</li> <li>— • Trending to setpoint. (<b>May not be met due to LOCA Event #6, perform contingency</b>)</li> <li>• Normal PZR Spray and heaters controlling pressure.</li> <li>• Valid CNTMT Spray NOT in progress.</li> </ul>   |  |                  |  |  |
| RCS Pressure Control Safety function  |  | SRO      |                 | Direct the following actions as necessary: <ul style="list-style-type: none"> <li>6. Perform as necessary:               <ul style="list-style-type: none"> <li>A. <u>IF</u> RCS pressure lowers to less than 1400 psia, <u>THEN</u> trip ONE RCP in EACH loop.</li> <li>D. <u>IF</u> RCP 2P32A or 2P32B stopped, <u>THEN</u> verify associated PZR Spray valve in MANUAL and closed.                   <ul style="list-style-type: none"> <li>• RCP A Spray Valve (2CV-4651)</li> <li>• RCP B Spray Valve (2CV-4652)</li> </ul> </li> <li>E. <u>IF</u> RCS pressure lowers to 1650 psia or less, <u>THEN</u> perform the following:                   <ul style="list-style-type: none"> <li>1) Verify SIAS actuated on PPS inserts.</li> <li>2) <b>GO TO</b> Step 7.</li> </ul> </li> <li>F. Verify PZR Pressure Control system restoring pressure to setpoint.</li> </ul> </li> </ul> |  |                  |  |  |

| Time                               | Position | Applicant's Actions or Behavior   |
|------------------------------------|----------|---|
| Core Heat Removal safety function. | ATC      | <p>7. Check Core Heat Removal by forced circulation:</p> <ul style="list-style-type: none"> <li>A. At least ONE RCP running.</li> <li>B. CCW flow aligned to RCPs.</li> <li>C. Loop delta T less than 10°F.</li> <li>D. RCS MTS 30°F or greater.</li> <li>E. Check SW aligned to CCW.</li> <li>F. IF SIAS or MSIS actuated, THEN maintain SW header pressure greater than 85 psig.</li> </ul>   |
| RCS Heat Removal Safety Function   | BOP/ATC  | <p>8. Check RCS Heat Removal:</p> <ul style="list-style-type: none"> <li>A. Check SG available by BOTH of the following: <ul style="list-style-type: none"> <li>• At least ONE SG level 10 to 90%.</li> <li>• FW maintaining SG level</li> </ul> </li> <li>B. Check MFW in RTO (<b>MFW may not be in Reactor Trip Override (RTO) due to steam generator levels being at setpoint, and the contingencies are satisfied if steam generator levels are controlling near the setpoint</b>)</li> <li>C. Check Feedwater line intact by the following: <ul style="list-style-type: none"> <li>• SG level stable or rising.</li> <li>• NO unexplained step changes or erratic FW flow.</li> <li>• NO unexplained step changes or erratic Condensate flow.</li> </ul> </li> <li>D. Check SG pressure 950 to 1050 psia.</li> <li>E. IF desired, THEN perform the following for SDBCS Master Controller using 2105.008 Exhibit 3: <ul style="list-style-type: none"> <li>1) Place controller in Auto/Local.</li> <li>2) Set setpoint at 960 psia.</li> </ul> </li> <li>F. Check RCS TC 540 to 555°F.</li> </ul> |

| Time                              | Position  | Applicant's Actions or Behavior   |
|-----------------------------------|---|---|
| Containment<br>Safety<br>Function | Op-Test No.: 2012-1   | Scenario No.: 3   |
|                                   | Event Description: 'D' RCP seals fail and a 180 gpm RCS leak starts, and Control Element Assembly's (CEA) 15 and 31 fail to fully insert during the reactor trip. | Event No.: 6 & 7  |
|                                   | ANY   | <p>9. Check CNTMT parameters:</p> <p>A. Temperature and Pressure:</p> <ul style="list-style-type: none"> <li>• Temperature less than 140°F.</li> <li>• Pressure less than 16 psia.</li> </ul> <p>B. Check CNTMT Spray pumps secured.</p> <p>C. NO CNTMT radiation alarms or unexplained rise in activity:</p> <ol style="list-style-type: none"> <li>1) CAMS alarms: <ul style="list-style-type: none"> <li>• "CNTMT PART/GAS RAD HI/LO" annunciator (2K10-B6) clear.</li> </ul> </li> <li>2) RCS leakage alarms: <ul style="list-style-type: none"> <li>• "AREA RADIATION HI/LO" annunciator (2K11-B10) clear. (<b>Not met due to LOCA Event #6</b>)</li> <li>• "PROC LIQUID RADIATION HI/LO" annunciator (2K11-C10) clear.</li> </ul> </li> <li>3) Check the following radiation monitors trend stable: (<b>Not met due to LOCA Event #6</b>) <ul style="list-style-type: none"> <li>• CNTMT Area</li> <li>• CAMS</li> <li>• Process Liquid</li> </ul> </li> </ol> <p>D. NO secondary system radiation alarms or unexplained rise in activity:</p> <ol style="list-style-type: none"> <li>1) "SEC SYS RADIATION HI" annunciator (2K11-A10) clear.</li> <li>2) Secondary Systems Radiation monitors trend stable: <ul style="list-style-type: none"> <li>• Main Steam lines</li> <li>• SG Sample</li> <li>• Condenser Off Gas</li> </ul> </li> </ol> |

| Time  | Position | Applicant's Actions or Behavior   |
|---|----------|---|
| Op-Test No.: 2012-1   |          |   |
| Scenario No.: 3   |          |   |
| Event No.: 6 & 7  |          |   |
| Event Description: 'D' RCP seals fail and a 180 gpm RCS leak starts, and Control Element Assembly's (CEA) 15 and 31 fail to fully insert during the reactor trip.   |          |   |
|   | SRO      | <p>10. Notify STA to report to control room.</p> <p>11. Direct NLOs to perform 2202.010 Attachment 47, Field Operator Post Trip Actions.</p> <p>12. Verify Reactor trip announced on Plant page.</p> <p>13. Notify SM to refer to Technical Specifications and 1903.010, Emergency Action Level Classification.</p>   |
| <p><b>Cue: If contacted as the STA to report to the control room, acknowledge the request.</b></p> <p><b>Cue: If contacted as a NLO to perform Attachment 47 Field Operator Post Trip Actions, acknowledge request.</b></p> |          |   |
|   | SRO      | 14. Direct control board operators to acknowledge ALL annunciators and announce ALL critical alarms.  |
|   | SRO      | <p>15. Check ALL safety function acceptance criteria satisfied. <b>(All safety functions are not satisfied, perform contingency)</b></p> <p>15. <u>IF</u> ANY safety function acceptance criteria <u>NOT</u> satisfied, <u>THEN</u> perform the following:</p> <p>A. Notify control room staff of safety functions <u>NOT</u> satisfied.</p> <p>B. GO TO Exhibit 8, Diagnostic Actions.</p> |
|   | SRO      | Diagnose Loss of Coolant Accident EOP 2202.003 or Excess RCS leakage AOP 2203.016 depending SIAS is actuated.   |
|   | SRO      | If Excess RCS leakage is diagnosed, Enter and perform floating step # 9   |
|   | SRO      | ■ 9. IF RCS leakage greater than 44 gpm AND in Mode 3, 4, OR 5, THEN perform the following:   |
|   | ATC/BOP  | B. Actuate SIAS.  |
|   |          | C. Actuate CCAS.  |
|   | SRO      | D. GO TO 2202.010 Exhibit 8, Diagnostic Actions.  |
| <b>Examiner note: The SRO may discuss Tech Spec 3.4.6.2 for RCS leakage.</b>  |          |   |
|   | SRO      | Enter and implement Loss of Coolant Accident EOP 2202.003   |

| Time  | Position | Applicant's Actions or Behavior  |
|---|----------|--|
| Op-Test No.: 2012-1   |          |  |
| Scenario No.: 3   |          |  |
| Event No.: 6 & 7  |          |  |
| Event Description: 'D' RCP seals fail and a 180 gpm RCS leak starts, and Control Element Assembly's (CEA) 15 and 31 fail to fully insert during the reactor trip. |          |  |
|   | SRO      | <p>* 1. Confirm diagnosis of LOCA as follows:</p> <p>A. Check SFSC acceptance criteria satisfied every 15 minutes. <b>(Normally performed by the STA)</b></p> <p>B. IF CCW in service to provide SG Sample Cooler cooling, THEN perform the following:</p> <p>1) Verify SG Sample valves open.</p> <ul style="list-style-type: none"> <li>• 2CV-5852-2</li> <li>• 2CV-5859-2</li> <li>• 2CV-5850</li> <li>• 2CV-5858</li> </ul> <p>2) Notify Chemistry to sample SGs for activity.</p> <p>C. IF SGs indicate primary to secondary leakage within TS limits, THEN continue with this procedure using SG with lowest leak rate for cooldown.</p> |
| <b>Cue: When contacted as Chemistry, then report you will sample both S/G for activity.</b>   |          |  |
|   | SRO      | * 2. Notify SM to refer to Technical Specifications and 1903.010, Emergency Action Level Classification.   |
|   | SRO      | 3. Open Placekeeping Page.   |
|   | SRO      | 4. Record present time: <ul style="list-style-type: none"> <li>• Time _____</li> </ul>   |
|   | ANY      | 5. Verify SIAS and CCAS actuated on PPS inserts.   |
|   | SRO      | 6. Notify Control Board Operators to perform the following: <p>A. Monitor floating steps.</p> <p>B. Verify actuated ESFAS components using 2202.010, Exhibit 9, ESFAS Actuation.</p>   |
|   | ANY      | *7. Check CCW aligned to RCPs.   |
|   | ANY      | ■8. Check RCS pressure greater than 1400 psia. <b>(May not be met, if not met perform contingency if required)</b>   |





| Time  | Position | Applicant's Actions or Behavior   |
|---|----------|---|
| Op-Test No.: 2012-1   |          |   |
| Scenario No.: 3   |          |   |
| Event No.: 6 & 7  |          |   |
| Event Description: 'D' RCP seals fail and a 180 gpm RCS leak starts, and Control Element Assembly's (CEA) 15 and 31 fail to fully insert during the reactor trip. |          |   |
|   | BOP      | <p>18. Verify ALL available miscellaneous CNTMT ventilation operating:</p> <p>A. CNTMT Building Recirculation fans:</p> <ul style="list-style-type: none"> <li>• 2VSF-31A</li> <li>• 2VSF-31B</li> <li>• 2VSF-31C</li> <li>• 2VSF-31D</li> </ul> <p>B. Reactor Cavity Cooling fans:</p> <ul style="list-style-type: none"> <li>• 2VSF-34A</li> <li>• 2VSF-34B</li> </ul> <p>C. Maximum of 3 CEDM Shroud Cooling units:</p> <ul style="list-style-type: none"> <li>• 2VSF-35A</li> <li>• 2VSF-35B</li> <li>• 2VSF-35C</li> <li>• 2VSF-35D</li> </ul> |
|   | ANY      | ■19. Check ALL AC and Vital DC buses energized.   |
|   | ANY      | ■20. Check IA pressure greater than 65 psig.  |
|   | ANY      | <p>21. Check for isolated LOCA:</p> <ul style="list-style-type: none"> <li>• RCS pressure controlled.</li> <li>• RCS leakage less than available Charging pump capacity.</li> </ul> <p><b>Examiner note: LOCA is not considered isolated.</b></p>   |
|   | SRO      | 21. IF LOCA NOT isolated, THEN GO TO Section 3, Unisolated LOCA.  |
|   | SRO      | ■1. Perform controlled cooldown to 275°F TC as follows:   |
|   | ANY      | A. Check RCS TC greater than 275°F.   |

| Op-Test No.: 2012-1   |          | Scenario No.: 3   | Event No.: 6 & 7 |
|---|----------|---|------------------|
| Event Description: 'D' RCP seals fail and a 180 gpm RCS leak starts, and Control Element Assembly's (CEA) 15 and 31 fail to fully insert during the reactor trip. |          |   |                  |
| Time  | Position | Applicant's Actions or Behavior   |                  |
|   | ATC      | <p>B. Reset Low PZR Pressure and Low SG Pressure setpoints during cooldown and depressurization.</p> <p>C. Verify maximum of ONE RCP running in EACH loop.</p> <p>D. IF RCP 2P32A or 2P32B stopped, THEN verify associated PZR Spray valve in MANUAL and closed.</p> <p>E. Monitor cooldown rate as follows:</p> <ul style="list-style-type: none"> <li>• Record RCS TC and PZR temperature using 2202.010 Attachment 8, RCS Cooldown Table.</li> <li>• Plot RCS pressure versus RCS TC using 2202.010 Attachment 1, P-T Limits every 15 minutes.</li> </ul> <p>F. Initiate RCS cooldown using SDBCS bypass valves or ADVs.</p> |                  |
|   | BOP      | <p>G. Control S/G levels with EFW or AFW using 2202.010 Attachment 46, Establishing EFW Flow.</p> <p>H. Secure running MFW pump.</p> <p>I. Close ALL MFW Block valves.</p> <p>J. Verify maximum of one condensate pump in service.</p> <p>K. Maintain condensate header pressure less than 700 psig using condensate pump recircs and MFW pump recircs.</p>   |                  |
| <b>Termination criteria: When the need for a cooldown has been determined or at the discretion of the lead examiner.</b>  |          |   |                  |

| Op-Test No.: 2012-1   |          | Scenario No.: 3   | Event No.: 8 |
|---|----------|---|--------------|
| Event Description: 2P-89A High Pressure Safety Injection (HPSI) pump has degraded performance.  |          |   |              |
| Time  | Position | Applicant's Actions or Behavior   |              |
|   | ANY      | Report that 2P-89A High pressure safety injection pump has degraded discharge pressure.   |              |
|   | ANY      | Dispatch NLO investigate 2P-89A locally   |              |
| <b>Cue: If contacted as the WCO, then report after 2 min that 2P-89A vibrations are high, casing is extremely hot and it is making an abnormal noise.</b> |          |   |              |
|   | SRO      | Direct BOP to secure 2P-89A and start 2P-89C<br>Or<br>Review HPSI termination criteria and if it is met the crew may elected to just secure 2P-89A. |              |
|   | BOP      | Place 2P-89A in Pull to Lock and remove 2P-89C from Pull to Lock or start 2P-89C  |              |
| <b>Examiner Note: The SRO may discuss Tech Spec 3.5.2 if RCS pressure is greater than 1700 psia for 2P-89A.</b>   |          |   |              |
| <b>Termination criteria: When 2P-89A has been started or at examiner's discretion.</b>  |          |   |              |

| Facility: Arkansas Nuclear One   |   |               | Date of Exam: 8-27-12 |             |               | Operating Test No.: 2012-1 |             |               |             |             |                                 |             |                       |  |    |   |   |   |
|--|---|---------------|-----------------------|-------------|---------------|----------------------------|-------------|---------------|-------------|-------------|---------------------------------|-------------|-----------------------|--|----|---|---|---|
| A<br>P<br>P<br>L<br>I<br>C<br>A<br>N<br>T  | E<br>V<br>E<br>N<br>T<br><br>T<br>Y<br>P<br>E | Scenarios     |                       |             |               |                            |             |               |             |             |                                 |             | T<br>O<br>T<br>A<br>L | M<br>I<br>N<br>I<br>M<br>U<br>M<br>(*) |    |   |   |   |
|  |   | 1             |                       |             | 2             |                            |             | 3             |             |             | 4 (currently selected as spare) |             |                       |  |    |   |   |   |
|  |   | CREW POSITION |                       |             | CREW POSITION |                            |             | CREW POSITION |             |             | CREW POSITION                   |             |                       |  |    |   |   |   |
|  |   | S<br>R<br>O   | A<br>T<br>C           | B<br>O<br>P | S<br>R<br>O   | A<br>T<br>C                | B<br>O<br>P | S<br>R<br>O   | A<br>T<br>C | B<br>O<br>P | S<br>R<br>O                     | A<br>T<br>C |                       | B<br>O<br>P                            | R  | I | U |   |
| RO <input type="checkbox"/><br>SRO-I <input checked="" type="checkbox"/><br>SRO-U <input type="checkbox"/>   | RX  |               |                       |             | 4             |                            |             |               |             |             |                                 |             |                       |  | 1  | 1 | 1 | 0 |
|  | NOR   | 1             |                       |             |               |                            |             | 1             |             |             | 1                               |             |                       |  | 2  | 1 | 1 | 1 |
|  | I/C   | 2,3,4,5,8     |                       |             | 6,9           |                            |             | 2,3,4,6,7     |             |             | 3,4,5,8                         |             |                       |  | 12 | 4 | 4 | 2 |
|  | MAJ   | 6,7           |                       |             | 5,7           |                            |             | 5             |             |             | 6,7                             |             |                       |  | 5  | 2 | 2 | 1 |
|  | TS  | 2,5           |                       |             |               |                            |             | 2,4           |             |             | 2,5                             |             |                       |  | 4  | 0 | 2 | 2 |
| RO <input type="checkbox"/><br>SRO-I <input checked="" type="checkbox"/><br>SRO-U <input type="checkbox"/>   | RX  |               | 3                     |             |               |                            |             |               |             |             |                                 |             |                       | 1                                      | 1  | 1 | 0 |   |
|  | NOR   |               |                       |             | 1             |                            |             |               |             | 1           |                                 |             | 1                     | 2                                      | 1  | 1 | 1 |   |
|  | I/C   |               | 4,5                   |             | 2,3,4,6,8,9   |                            |             |               |             | 2,4,7       |                                 |             | 4,8                   | 11                                     | 4  | 4 | 2 |   |
|  | MAJ   |               | 6,7                   |             | 5,7           |                            |             |               |             | 5           |                                 |             | 6,7                   | 5                                      | 2  | 2 | 1 |   |
|  | TS  |               |                       |             | 2,4           |                            |             |               |             |             |                                 |             |                       | 2                                      | 0  | 2 | 2 |   |
| RO <input checked="" type="checkbox"/><br>SRO-I <input type="checkbox"/><br>SRO-U <input type="checkbox"/>   | RX  |               |                       |             |               |                            |             |               | 1           |             |                                 |             | 1                     | 1                                      | 1  | 1 | 0 |   |
|  | NOR   |               |                       | 1           |               | 1                          |             |               |             |             |                                 |             |                       | 2                                      | 1  | 1 | 1 |   |
|  | I/C   |               |                       | 2,3,8       |               | 2,3,8                      |             | 3,6           |             |             |                                 |             | 3,5                   | 8                                      | 4  | 4 | 2 |   |
|  | MAJ   |               |                       | 6,7         |               | 5,7                        |             | 5             |             |             |                                 |             | 6,7                   | 5                                      | 2  | 2 | 1 |   |
|  | TS  |               |                       |             |               |                            |             |               |             |             |                                 |             |                       | 0                                      | 0  | 2 | 2 |   |
| RO <input type="checkbox"/><br>SRO-I <input type="checkbox"/><br>SRO-U <input type="checkbox"/>  | RX  |               |                       |             |               |                            |             |               |             |             |                                 |             |                       |  | 1  | 1 | 0 |   |
|  | NOR   |               |                       |             |               |                            |             |               |             |             |                                 |             |                       |  | 1  | 1 | 1 |   |
|  | I/C   |               |                       |             |               |                            |             |               |             |             |                                 |             |                       |  | 4  | 4 | 2 |   |
|  | MAJ   |               |                       |             |               |                            |             |               |             |             |                                 |             |                       |  | 2  | 2 | 1 |   |
|  | TS  |               |                       |             |               |                            |             |               |             |             |                                 |             |                       |  | 0  | 2 | 2 |   |
| Instructions:<br>1. Check the applicant level and enter the operating test number and Form ES-D-1 event numbers for each event type; TS are not applicable for RO applicants. ROs must serve in both the "at-the-controls (ATC)" and "balance-of-plant (BOP)" positions; Instant SROs must serve in both the SRO and the ATC positions, including at least two instrument or component (I/C) malfunctions and one major transient, in the ATC position. If an Instant SRO <i>additionally</i> serves in the BOP position, one I/C malfunction can be credited toward the two I/C malfunctions required for the ATC position.<br>2. Reactivity manipulations may be conducted under normal or <i>controlled</i> abnormal conditions (refer to Section D.5.d) but must be significant per Section C.2.a of Appendix D. (*) Reactivity and normal evolutions may be replaced with additional instrument or component malfunctions on a 1-for-1 basis.<br>3. Whenever practical, both instrument and component malfunctions should be included; only those that require verifiable actions that provide insight to the applicant's competence count toward the minimum requirements specified for the applicant's license level in the right-hand columns. |   |               |                       |             |               |                            |             |               |             |             |                                 |             |                       |  |    |   |   |   |

| Facility: Arkansas Nuclear One   |   |               | Date of Exam: 8-27-12 |             |               | Operating Test No.: 2012-1 |             |                              |             |             |                                 |             |             |                       |                                    |   |   |
|--|---|---------------|-----------------------|-------------|---------------|----------------------------|-------------|------------------------------|-------------|-------------|---------------------------------|-------------|-------------|-----------------------|------------------------------------|---|---|
| A<br>P<br>P<br>L<br>I<br>C<br>A<br>N<br>T  | E<br>V<br>E<br>N<br>T<br><br>T<br>Y<br>P<br>E | Scenarios     |                       |             |               |                            |             |                              |             |             |                                 |             |             | T<br>O<br>T<br>A<br>L | M<br>I<br>N<br>I<br>M<br>U<br>M(*) |   |   |
|  |   | 1             |                       |             | 2             |                            |             | 3(Only used for SROI & 1 RO) |             |             | 4 (currently selected as spare) |             |             |                       |                                    |   |   |
|  |   | CREW POSITION |                       |             | CREW POSITION |                            |             | CREW POSITION                |             |             | CREW POSITION                   |             |             |                       |                                    |   |   |
|  |   | S<br>R<br>O   | A<br>T<br>C           | B<br>O<br>P | S<br>R<br>O   | A<br>T<br>C                | B<br>O<br>P | S<br>R<br>O                  | A<br>T<br>C | B<br>O<br>P | S<br>R<br>O                     | A<br>T<br>C | B<br>O<br>P |                       | R                                  | I | U |
| RO<br>X<br>SRO-I<br><input type="checkbox"/><br>SRO-U<br><input type="checkbox"/>  | RX  |               | 3                     |             |               |                            |             |                              |             |             | 1                               |             | 1           | 1                     | 1                                  | 0 |   |
|  | NOR   |               |                       |             |               | 1                          |             |                              |             | 1           |                                 |             | 1           | 1                     | 1                                  | 1 |   |
|  | I/C   |               | 4,5                   |             |               | 2,3,8                      |             |                              |             | 2,4,7       |                                 | 3,5         | 5           | 4                     | 4                                  | 2 |   |
|  | MAJ   |               | 6,7                   |             |               | 5,7                        |             |                              |             | 5           |                                 | 6,7         | 4           | 2                     | 2                                  | 1 |   |
|  | TS  |               |                       |             |               |                            |             |                              |             |             |                                 |             | 0           | 0                     | 2                                  | 2 |   |
| RO<br>X<br>SRO-I<br><input type="checkbox"/><br>SRO-U<br><input type="checkbox"/>  | RX  |               |                       |             | 4             |                            |             | 1                            |             |             |                                 |             | 1           | 1                     | 1                                  | 0 |   |
|  | NOR   |               |                       | 1           |               |                            |             |                              |             |             |                                 | 1           | 1           | 1                     | 1                                  | 1 |   |
|  | I/C   |               |                       | 2,3,8       |               | 6,9                        |             |                              | 3,6         |             |                                 | 4,8         | 5           | 4                     | 4                                  | 2 |   |
|  | MAJ   |               |                       | 6,7         |               | 5,7                        |             |                              | 5           |             |                                 | 6,7         | 4           | 2                     | 2                                  | 1 |   |
|  | TS  |               |                       |             |               |                            |             |                              |             |             |                                 |             | 0           | 0                     | 2                                  | 2 |   |
| RO<br><input type="checkbox"/><br>SRO-I<br><input type="checkbox"/><br>SRO-U<br>X  | RX  |               |                       |             |               |                            |             |                              |             |             |                                 |             | 0           | 1                     | 1                                  | 0 |   |
|  | NOR   | 1             |                       |             | 1             |                            |             |                              |             |             | 1                               |             | 2           | 1                     | 1                                  | 1 |   |
|  | I/C   | 2,3,4,5,8     |                       |             | 2,3,4,6,8,9   |                            |             | 2,3,4,6,7                    |             |             | 3,4,5,8                         |             | 11          | 4                     | 4                                  | 2 |   |
|  | MAJ   | 6,7           |                       |             | 5,7           |                            |             | 5                            |             |             | 6,7                             |             | 4           | 2                     | 2                                  | 1 |   |
|  | TS  | 2,5           |                       |             | 2,4           |                            |             | 2,4                          |             |             | 2,5                             |             | 4           | 0                     | 2                                  | 2 |   |
| RO<br><input type="checkbox"/><br>SRO-I<br><input type="checkbox"/><br>SRO-U<br><input type="checkbox"/>   | RX  |               |                       |             |               |                            |             |                              |             |             |                                 |             | 0           | 1                     | 1                                  | 0 |   |
|  | NOR   |               |                       |             |               |                            |             |                              |             |             |                                 |             | 0           | 1                     | 1                                  | 1 |   |
|  | I/C   |               |                       |             |               |                            |             |                              |             |             |                                 |             | 0           | 4                     | 4                                  | 2 |   |
|  | MAJ   |               |                       |             |               |                            |             |                              |             |             |                                 |             | 0           | 2                     | 2                                  | 1 |   |
|  | TS  |               |                       |             |               |                            |             |                              |             |             |                                 |             | 0           | 0                     | 2                                  | 2 |   |
| Instructions:  |   |               |                       |             |               |                            |             |                              |             |             |                                 |             |             |                       |                                    |   |   |
| <ol style="list-style-type: none"> <li>Check the applicant level and enter the operating test number and Form ES-D-1 event numbers for each event type; TS are not applicable for RO applicants. ROs must serve in both the "at-the-controls (ATC)" and "balance-of-plant (BOP)" positions; Instant SROs must serve in both the SRO and the ATC positions, including at least two instrument or component (I/C) malfunctions and one major transient, in the ATC position. If an Instant SRO <i>additionally</i> serves in the BOP position, one I/C malfunction can be credited toward the two I/C malfunctions required for the ATC position.</li> <li>Reactivity manipulations may be conducted under normal or <i>controlled</i> abnormal conditions (refer to Section D.5.d) but must be significant per Section C.2.a of Appendix D. (*) Reactivity and normal evolutions may be replaced with additional instrument or component malfunctions on a 1-for-1 basis.</li> <li>Whenever practical, both instrument and component malfunctions should be included; only those that require verifiable actions that provide insight to the applicant's competence count toward the minimum requirements specified for the applicant's license level in the right-hand columns.</li> </ol> |   |               |                       |             |               |                            |             |                              |             |             |                                 |             |             |                       |                                    |   |   |

|  |   |                    |             |             |   |                  |                |                  |   |                       |                  |                    |   |   |   |   |
|--|---|--------------------|-------------|-------------|---|------------------|----------------|------------------|---|-----------------------|------------------|--------------------|---|---|---|---|
| Facility: Arkansas Nuclear One      Date of Examination: 8/27/12      Operating Test No.:2012-1                                    |   |                    |             |             |   |                  |                |                  |   |                       |                  |                    |   |   |   |   |
| Competencies   | APPLICANTS  |                    |             |             |   |                  |                |                  |   |                       |                  |                    |   |   |   |   |
|  | RO      X<br>SRO-I <input type="checkbox"/><br>SRO-U <input type="checkbox"/> |                    |             |             | RO      X<br>SRO-I <input type="checkbox"/><br>SRO-U <input type="checkbox"/> |                  |                |                  | RO <input type="checkbox"/><br>SRO-I <input type="checkbox"/><br>SRO-U    X |                       |                  |                    | RO <input type="checkbox"/><br>SRO-I <input type="checkbox"/><br>SRO-U <input type="checkbox"/> |   |   |   |
|  | SCENARIO  |                    |             |             | SCENARIO  |                  |                |                  | SCENARIO  |                       |                  |                    | SCENARIO  |   |   |   |
|  | 1   | 2                  | 3           | 4           | 1   | 2                | 3              | 4                | 1   | 2                     | 3                | 4                  | 1   | 2 | 3 | 4 |
| BOP  | ATC   | BOP                | ATC         | ATC         | BOP   | ATC              | BOP            |                  |   |                       |                  |                    |   |   |   |   |
| Interpret/Diagnose Events and Conditions   | 2,3, 6,7, 8   | 2,4, 5,6, 7,8, 9   | 2,4, 5,7    | 3,5, 6,7    | 2,3, 4,5, 6,7   | 3,4, 5,7, 8      | 2,3, 4,5, 6, 8 | 2,3, 4,5, 6,7, 8 | 2,3, 4,5, 6,7, 8,9  | 2,3, 4,5, 6,7         | 2,3, 4,5, 6,7, 8 |                    |   |   |   |   |
| Comply With and Use Procedures (1)   | 1,2, 6,7  | 4,5, 6,7, 9        | 1,2, 5      | 1,5, 6,7    | 3,4, 5,6, 7   | 1,2, 5,7         | 1,3, 4,5, 6    | 2,4, 6,7         | 2,3, 4,5, 6,7, 8  | 2,3, 4,5, 6,7, 8      | 1,2, 3,4, 5,6    | 1,2, 3,4, 5,6, 7,8 |   |   |   |   |
| Operate Control Boards (2)   | 1,2, 3,6, 7,8   | 4,5, 6,7, 9        | 1,2, 4,5, 7 | 1,3, 5,6, 7 | 3,4, 5,6, 7   | 1,2, 3,5, 7,8    | 1,3, 4,5, 6    | 1,4, 6,7, 8      | N/A   | N/A                   | N/A              | N/A                |   |   |   |   |
| Communicate and Interact   | 1,2, 3,5, 6,7, 8  | 2,3, 4,5, 6,7, 8,9 | 1,2, 4,5, 7 | 1,3, 5,6, 7 | 2,3, 4,5, 6,7, 8  | 1,2, 3,4, 5,7, 8 | 1,2, 3,4, 5,6  | 1,2, 5,6, 7,8    | 1,2, 3,4, 5,6, 7,8  | 1,2, 3,4, 5,6, 7,8, 9 | 1,2, 3,4, 5,6, 7 | 1,2, 3,4, 5,6, 7,8 |   |   |   |   |
| Demonstrate Supervisory Ability (3)  | N/A   | N/A                | N/A         | N/A         | N/A   | N/A              | N/A            | N/A              | 1,2, 3,4, 5,6, 7,8  | 1,2, 3,4, 5,6, 7,8, 9 | 1,2, 3,4, 5,6, 7 | 1,2, 3,4, 5,6, 7,8 |   |   |   |   |
| Comply With and Use Tech. Specs. (3)   | N/A   | N/A                | N/A         | N/A         | N/A   | N/A              | N/A            | N/A              | 2,5   | 2,4                   | 2,4              | 2,5                |   |   |   |   |
| Notes:<br>(1) Includes Technical Specification compliance for an RO.<br>(2) Optional for an SRO-U.<br>(3) Only applicable to SROs. |   |                    |             |             |   |                  |                |                  |   |                       |                  |                    |   |   |   |   |

*Instructions:*

*Check the applicants' license type and enter one or more event numbers that will allow the examiners to evaluate every applicable competency for every applicant.*

|  |   |                  |               |             |   |                    |                    |                  |   |             |                |     |   |   |   |   |
|--|---|------------------|---------------|-------------|---|--------------------|--------------------|------------------|---|-------------|----------------|-----|---|---|---|---|
| Facility: Arkansas Nuclear One      Date of Examination: 8/27/12      Operating Test No.:2012-1                                    |   |                  |               |             |   |                    |                    |                  |   |             |                |     |   |   |   |   |
| Competencies   | APPLICANTS  |                  |               |             |   |                    |                    |                  |   |             |                |     |   |   |   |   |
|  | RO      X<br>SRO-I <input type="checkbox"/><br>SRO-U <input type="checkbox"/> |                  |               |             | RO <input type="checkbox"/><br>SRO-I    X<br>SRO-U <input type="checkbox"/> |                    |                    |                  | RO <input type="checkbox"/><br>SRO-I    X<br>SRO-U <input type="checkbox"/> |             |                |     | RO <input type="checkbox"/><br>SRO-I <input type="checkbox"/><br>SRO-U <input type="checkbox"/> |   |   |   |
|  | SCENARIO  |                  |               |             | SCENARIO  |                    |                    |                  | SCENARIO  |             |                |     | SCENARIO  |   |   |   |
|  | 1   | 2                | 3             | 4           | 1   | 2                  | 3                  | 4                | 1   | 2           | 3              | 4   | 1   | 2 | 3 | 4 |
| BOP  | BOP   | ATC              | ATC           | SRO         | ATC   | SRO                | SRO                | ATC              | SRO   | BOP         | BOP            |     |   |   |   |   |
| Interpret/Diagnose Events and Conditions   | 2,3, 6,7, 8   | 3,4, 5,7, 8      | 2,3, 4,5, 6   | 3,5, 6,7    | 2,3, 4,5, 6,7, 8  | 2,4, 5,6, 7,8, 9   | 2,3, 4,5, 6,7, 8   | 2,3, 4,5, 6,7    | 2,3, 4,5, 6,7, 8,9  | 2,4, 5,7    | 2,4, 6,7, 8    |     |   |   |   |   |
| Comply With and Use Procedures (1)   | 1,2, 6,7  | 1,2, 5,7         | 1,3, 4,5, 6   | 1,5, 6,7    | 2,3, 4,5, 6,7, 8  | 4,5, 6,7, 9        | 1,2, 3,4, 5,6, 7,8 | 3,4, 5,6, 7      | 2,3, 4,5, 6,7, 8  | 1,2, 5      | 2,4, 6,7       |     |   |   |   |   |
| Operate Control Boards (2)   | 1,2, 3,6, 7,8   | 1,2, 3,5, 7,8    | 1,3, 4,5, 6   | 1,3, 5,6, 7 | N/A   | 4,5, 6,7, 9        | N/A                | N/A              | 3,4, 5,6, 7   | N/A         | 1,2, 4,5, 7, 8 |     |   |   |   |   |
| Communicate and Interact   | 1,2, 3,5, 6,7, 8  | 1,2, 3,4, 5,7, 8 | 1,2, 3,4, 5,6 | 1,3, 5,6, 7 | 1,2, 3,4, 5,6, 7,8  | 2,3, 4,5, 6,7, 8,9 | 1,2, 3,4, 5,6, 7,8 | 2,3, 4,5, 6,7, 8 | 1,2, 3,4, 5,6, 7,8, 9   | 1,2, 4,5, 7 | 1,2, 5,6, 7,8  |     |   |   |   |   |
| Demonstrate Supervisory Ability (3)  | N/A   | N/A              | N/A           | N/A         | 1,2, 3,4, 5,6, 7,8  | N/A                | 1,2, 3,4, 5,6, 7,8 | N/A              | 1,2, 3,4, 5,6, 7,8, 9   | N/A         | N/A            |     |   |   |   |   |
| Comply With and Use Tech. Specs. (3)   | N/A   | N/A              | N/A           | N/A         | 2,5   | N/A                | 2,4                | 2,5              | N/A   | 2,4         | N/A            | N/A |   |   |   |   |
| Notes:<br>(1) Includes Technical Specification compliance for an RO.<br>(2) Optional for an SRO-U.<br>(3) Only applicable to SROs. |   |                  |               |             |   |                    |                    |                  |   |             |                |     |   |   |   |   |

*Instructions:*

*Check the applicants' license type and enter one or more event numbers that will allow the examiners to evaluate every applicable competency for every applicant.*