# North Anna Draft ADMIN

| 11  | : North Anna Power<br>nation Level RO        | Station Date of Examination: 6/10-14/2002 Operating Test Number: 1A                          |
|-----|--|--|
|     | dministrative<br>opic/Subject<br>Description | Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions |
| A.1 | Plant Parameters                             | JPM Determine the Quadrant Power Tilt Ratio by Hand  |
|     | Verification                                 | Calculation (1-PT-23)  |
|     | (Both)                                       | Bank - R709; 015-A1.04, 3.5/3.7  |
|     | Knowledge of                                 | JPM Respond to a loss of source-range nuclear instrumentation                                |
|     | fuel handling.                               | during refueling (1-AP-4.1)  |
|     | (Both)                                       | Bank - R714 (modified); G-2.2.30, 3.5/3.3  |
| A.2 | Tagging and                                  | JPM Expand the boundaries of a tagging order.  |
|     | Clearance                                    | New; G-2.2.13, 3.6/3.8   |
|     | Procedures                                   | ·  |
|     | (RO)   |  |
| A.3 | Radiation                                    | JPM Determine Dose Rates with Airborne Activity Present.                                     |
|     | Control                                      | New; G-2.3.1, 2.6/3.0  |
|     | (Both)                                       |  |
| A.4 | Emergency                                    | JPM Given a set of plant conditions, make proper notifications                               |
| :   | Communications                               | for an Emergency Condition.  |
|     | (RO)   | New; G-2.4.39, 3.3/3.1   |

|     | r: North Anna Power<br>nation Level: SRO     |  |
|-----|--|--|
| Т   | dministrative<br>opic/Subject<br>Description | Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions |
| A.1 | Plant parameters                             | JPM Determine the Quadrant Power Tilt Ratio by Hand  |
|     | verification                                 | Calculation (1-PT-23)  |
|     | (Both)                                       | Bank - R709; 015-A1.04, 3.5/3.7  |
|     | Knowledge of                                 | JPM Respond to a loss of source-range nuclear instrumentation                                |
| 1   | Fuel Handling.                               | during refueling (1-AP-4.1)  |
|     | (Both)                                       | Bank - R714 (modified); G-2.2.30, 3.5/3.3  |
| A.2 | Tagging and                                  | JPM Review the expanded boundaries of a tagging order  |
|     | Clearance                                    | New; G-2.2.13, 3.6/3.8   |
|     | Procedures                                   |  |
|     | (SRO)  |  |
| A.3 | Radiation                                    | JPM Determine Dose Rates with Airborne Activity Present.                                     |
|     | Control                                      | New; G-2.3.1, 2.6/3.0  |
|     | (Both)                                       |  |
| A.4 | Emergency                                    | JPM Given a set of plant conditions, determine applicable EPIP                               |
|     | Action Levels                                | classification, including any required PAR's   |
|     | and  | New; G-2.4.41, 2.3/4.1   |
|     | Classifications                              |  |
|     | (SRO)  |  |

# NORTH ANNA POWER STATION INITIAL LICENSE EXAMINATION ADMINISTRATIVE JOB PERFORMANCE MEASURE

Classify an emergency event (SRO)

| CANDIDATE |  |  |  |
|-----------|--|--|--|
|           |  |  |  |
| EXAMINER  |  |  |  |

# **NORTH ANNA POWER STATION INITIAL LICENSE EXAMINATION ADMINISTRATIVE** JOB PERFORMANCE MEASURE

| T | ask |  |
|---|-----|--|
| _ |     |  |

Classify an emergency event. (EPIP-1.01)

# References:

EPIP-1.01, "Emergency Manager Controlling Procedure," Rev. 35 EPIP-1.05, "Response to General Emergency," Rev. 16

EPIP-1.06, "Protective Action Recommendations," Rev. 4

| Validation Time: 13 min. | Time Critical: Yes                      |             | =======      |
|--------------------------|---|-------------|--------------|
| Candidate:               | NAME                                    | <del></del> |              |
| Performance Rating: SAT  | UNSAT                                   |             |              |
| Examiner: NAMI           | ======================================= | SIGNATURE   | /DATE        |
|                          | COMMENTS                                |             |              |
|                          |   |             | <del> </del> |
|                          |   |             |              |

# Tools/Equipment/Procedures Needed:

EPIP-1.01, "Emergency Manager Controlling Procedure," Rev. 35

EPIP-1.05, "Response to General Emergency," Rev. 16

EPIP-1.06, "Protective Action Recommendations," Rev. 4

# **READ TO OPERATOR**

### **DIRECTION TO TRAINEE:**

I will explain the initial conditions, and state the task to be performed. All steps shall be performed for this JPM, with the exception of any required communications, **which shall be simulated**. Under no circumstances are you to operate any plant equipment. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

# **INITIAL CONDITIONS:**

Security reports that armed intruders entered the unit-2 main steam valve house.

Explosions were heard in the unit-2 main steam valve house and steam is issuing from within the building.

Narrow-range level on all three steam generators began rapidly decreasing immediately after the explosions occurred.

Unit-2 tripped due to steam generator low level with steam flow-feed flow mismatch.

All three steam generators are depressurizing.

There is no steam reported in the Mechanical Equipment Room or the unit-2 Turbine Building.

Containment pressure and temperature are normal.

Security reports that the intruders have now been apprehended and the threat has been neutralized.

Operations shift "B" is designated for coverage.

# **INITIATING CUES:**

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You are requested to classify an emergency event in accordance with EPIP-1.01. Continue until you have determined if an emergency action level has been exceeded, including the determination of any applicable PAR. If a PAR is applicable, fill out a PAR form.

| The time is now | (After applicant understands the tas | k, examiner to provide current time) |
|-----------------|--------------------------------------|--------------------------------------|
|-----------------|--------------------------------------|--------------------------------------|

| STEP 1:<br>STANDARD: | Obtain a copy of the appropriate procedure.  Operator obtains a copy of EPIP-1.01.            | SAT   |
|----------------------|---|-------|
| <u>COMMENTS</u> :    |   | UNSAT |
| STEP 2:              | Determine the event category using the emergency action level table index. (Step 1.a)         | SAT   |
| STANDARD:            | Operator determines that it is a Fuel Failure or Fuel Handling Accident (Tab C)               |       |
| COMMENTS:            |   | UNSAT |
|                      |   |       |
| STEP 3:              | Review the emergency action level tab associated with the event category. (Step 1.b)          | SAT   |
| STANDARD:            | Operator reviews the emergency action level tab.  |       |
| COMMENTS:            |   | UNSAT |
|                      |   |       |
| STEP 4:              | Use available resources to obtain indications of emergency conditions. (step 1.c)             | SAT   |
| STANDARD:            | Operator analyzes the initial conditions and compares them to the emergency action level tab. |       |
| COMMENTS:            |   | UNSAT |

|                      |  | <del> </del>     |
|----------------------|--|------------------|
| STEP 5:<br>STANDARD: | Verify emergency action level exceeded. (step 1.d)  Operator classifies the event as a General Emergency in accordance with tab C-2. | CRITICAL<br>STEP |
| COMMENTS:            |  | UNSAT            |
| STEP 6:<br>STANDARD: | Record procedure initiation. (step 1.e)  Operator signs and dates the procedure.   | SAT              |
| COMMENTS:            |  | UNSAT            |
| STEP 7:<br>STANDARD: | Initiate a chronological log of events. (step 1.f)  Operator states that he/she would initiate a chronological log of events.        | SAT              |
| COMMENTS:            |  | UNSAT            |
| STEP 8:<br>STANDARD: | Declare position of SEM. (step 1.g)  Operator declares the position of SEM.  | SAT              |
| COMMENTS:            |  | UNSAT            |
| STEP 9:              | Check conditions allow for normal implementation of emergency response actions. (step 2)   | SAT              |
| STANDARD:  COMMENTS: | Operator states that he/she would initiate a chronological log of events.  | UNSAT            |
|                      |  |                  |

|                      |  | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, |
|----------------------|--|---|
| STEP 10:             | Check classification alert or higher. (step 3.a)   | SAT                                     |
| STANDARD:  COMMENTS: | Operator determines emergency classification is alert or higher.                               | UNSAT                                   |
|                      |  | UNSAT                                   |
| STEP 11:             | Check if emergency assembly and accountability previously conducted. (step 3.b)                | SAT                                     |
| STANDARD:            | Operator determines emergency assembly and accountability was not previously conducted.        | UNSAT                                   |
| EXAMINER'S           | CUE: Emergency assembly and accountability have NOT yet been performed.                        | 0N3A1                                   |
| COMMENTS:            |  |   |
|                      |  |   |
| STEP 12:             | Announce the emergency. (step 3.b RNO)   | SAT                                     |
| STANDARD:            | Operator simulates announcing the emergency.   | <u> </u>                                |
| COMMENTS:            |  | UNSAT                                   |
|                      |  |   |
|                      |  |   |
| <u>STEP 13</u> :     | Direct emergency communicators to initiate the applicable procedures. (step 4.a)               | SAT                                     |
| STANDARD:            | Operator simulates contacting the emergency communicators to initiate EPIP-2.01 and EPIP-2.02. | UNSAT                                   |
| EXAMINER'S           | CUE: The emergency communicators acknowledge your directions.                                  | ONOAT                                   |
| COMMENTS:            |  |   |
|                      |  |   |

| STEP 14:   | Direct Health Physics to initiate EPIP-4.01. (step 4.b)  | SAT     |
|------------|--|---------|
| STANDARD:  | Operator simulates contacting Health Physics to initiate EPIP-4.01.  | SAT     |
| EXAMINER'S | CUE: Health Physics acknowledges your direction.   | 1110.47 |
| COMMENTS:  |  | UNSAT   |
|            |  |         |
|            |  |         |
| STEP 15:   | Establish communications with the Security Shift Supervisor. (step 4.c)  | 0.7     |
| STANDARD:  | Operator simulates contacting the Security Shift Supervisor and providing current classification, coverage shift, and to initiate EPIP-5.09. | SAT     |
| EXAMINER'S | CUE: Security Shift Supervisor acknowledges your directions.   | UNSAT   |
| COMMENTS:  |  |         |
|            |  |         |
|            |  |         |
| STEP 16:   | Check TSC activated. (step 5)  | SAT     |
| STANDARD:  | Operator simulates contacting the TSC.   |         |
| EXAMINER'S | CUE: The TSC is activated.   | UNSAT   |
| COMMENTO   |  | 0N3A1   |
| COMMENTS:  |  |         |
|            |  |         |
| STEP 17:   | Implement EPIP for emergency classification in effect. (step 6)  |         |
| STANDARD:  | Operator obtains a copy of EPIP-1.05.  | SAT     |
| COMMENTS:  |  |         |
|            |  | UNSAT   |
|            |  |         |

|           |   | · · · · · · · · · · · · · · · · · · · |
|-----------|---|---------------------------------------|
| STEP 18:  | Record procedure initiation. (step 1)   | SAT                                   |
| STANDARD: | Operator signs and dates the procedure.   |                                       |
| COMMENTS: |   | UNSAT                                 |
|           | •   | 0No/(1                                |
|           |   |                                       |
| STEP 19:  | Note time general emergency EAL was met. (step 2)   | CRITICAL<br>STEP                      |
| STANDARD: | Operator records the time EAL was met in EPIP-1.05.   | SAT                                   |
|           | MINER: The time recorded in procedure step 2 must be ≤ 15 minutes stated in the initial conditions. | 0/1                                   |
| COMMENTS: |   | UNSAT                                 |
|           |   |                                       |
|           |   |                                       |
| STEP 20:  | Check if event announcement required. (step 3.a)  | SAT                                   |
| STANDARD: | Operator determines announcement was previously done.   | SAT                                   |
| COMMENTS: |   | UNSAT                                 |
|           |   |                                       |
|           |   |                                       |
| STEP 21:  | Initiate EPIP-1.06. (step 4)  | SAT                                   |
| STANDARD: | Operator obtains a copy of EPIP-1.06.   | 3/1                                   |
| COMMENTS: |   | UNSAT                                 |
|           |   | 0N0/1                                 |
|           |   |                                       |
| STEP 22:  | Record procedure initiation. (step 1)   | SAT                                   |
| STANDARD: | Operator signs and dates the procedure.   | OAT                                   |
| COMMENTS: |   | UNSAT                                 |
|           |   | UNSAI                                 |
|           |   |                                       |

| STEP 23:          | Use attachment 2 to determine initial PAR. (step 2)   | SAT              |
|-------------------|---|------------------|
| STANDARD:         | Operator refers to attachment 2.  | 5A1              |
| EXAMINER'S        | CUE: Offsite monitoring teams report that the projected dose at 5 miles is 2.5 Rem TEDE. The Radiological Assessment Coordinator has recommended an expanded PAR using EPIP-4.07 (examiner to provide data sheet to applicant.)   | UNSAT            |
| COMMENTS:         |   |                  |
|                   |   |                  |
| STEP 24:          | Determine windspeed and three downwind sectors. (step 3.a)  Operator determines downwind sectors are Romeo, Alpha and Bravo.  | SAT              |
| STANDARD:         | Operator determines downwind sectors are Nomeo, Alpha and Bravo.  |                  |
| COMMENTS:         |   | UNSAT            |
|                   |   |                  |
| STEP 25:          | Mark the appropriate PAR box in item 2. (step 3.b)  | CRITICAL<br>STEP |
| <u>STANDARD</u> : | <ul> <li>Operator performs the following:</li> <li>Marks the Expanded PAR box and the Evacuate sectors box</li> <li>Enters Romeo, Alpha and Bravo in the affected sector blanks</li> <li>Enters 0 to 5 miles in the distance blanks</li> <li>Marks the Shelter sectors box</li> </ul> | SAT              |
| OOMMENTO.         | Enters Romeo, Alpha and Bravo in the affected sector blanks   | UNSAT            |
| COMMENTS:         |   |                  |
| STEP 26:          | Sign and date form. (step 3.c)  | SAT              |
| STANDARD:         | Operator records signs and dates attachment 3.  |                  |
| COMMENTS:         |   | UNSAT            |

| STEP 27:   | Direct emergency communicators to notify offsite authorities of PAR. (step 4) | SAT   |
|------------|---|-------|
| STANDARD:  | Operator states that he/she has completed the task.                           | OA 1  |
| EXAMINER'S | CUE: Assume that another operator will complete the procedure.                | UNSAT |
| COMMENTS:  |   |       |
|            |   |       |
|            | END OF TASK   |       |

# APPLICANT CUE SHEET (TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

# **INITIAL CONDITIONS:**

Security reports that armed intruders have entered the unit-2 main steam valve house.

Explosions were heard in the unit-2 main steam valve house and steam is issuing from within the building.

Unit-2 tripped due to steam generator low level with steam flow-feed flow mismatch.

All three steam generators are depressurizing.

There is no steam reported in the Mechanical Equipment Room or the unit-2 Turbine Building.

Containment pressure and temperature are normal.

Narrow-range level on all three steam generators began rapidly decreasing immediately after the explosions occurred.

Operations shift "B" is designated for coverage.

# **INITIATING CUES:**

You are requested to classify an emergency event in accordance with EPIP-1.01. Continue until you have determined if an emergency action level has been exceeded, including the determination of any applicable PAR. If a PAR is applicable, fill out a PAR form.

| The time is now | (examiner to | provide | current time)   |
|-----------------|--------------|---------|-----------------|
| THE HITE IS HOW | CAMILING IV  | DIOVIGE | CultCitt title? |

# APPLICANT CUE SHEET (TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

The RAC recommends an **expanded PAR** as follows:

- Evacuate downwind sectors from 0 5 miles
- Shelter downwind sectors from 5 10 miles

The following meteorological

- Wind speed is 12 mph
- Wind direction is 180

Developed for the North Anna, June



conditions exist:

degrees

2002, Initial Examination

# U. S. Nuclear Regulatory Commission

Region II

A-3 Administrative Section

# Title:

Determine Dose Rates with Airborne Activity Present

# JPM TITLE: Determine Dose Rates with Airborne Activity Present

JPM NUMBER: NRC-ADMIN-JPM-03

JPM REV. DATE: 03/14/02

TIME VALIDATION: MINUTES

AN 'X' BELOW INDICATES THE APPLICABLE METHOD(S) OF TESTING WHICH MAY BE USED:

PERFORM: X SIMULATE: DISCUSS:

# INSTRUCTOR'S INFORMATION

Task: Determine Dose Rates with Airborne Activity Present

Applicability Est Completion Time Actual Time

SRO and RO 10 Minutes

# **NUREG-1122 Importance Ratings**

GEN 2.3.1 Knowledge of 10 CFR: 20 and related facility radiation control requirements. (RO 2.6/SRO 3.0).

GEN 2.3.4 Knowledge of facility ALARA program. (RO 2.5/SRO2.9)

# **Conditions**

Task is to be PERFORMED in an area that has adequate reference material.

# **Standards**

Dose is correctly calculated with a respirator and without a respirator.

# **READ TO THE TRAINEE**

I will explain the initial conditions, and state the task to be performed. All steps shall be performed/simulated for this JPM. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

### **INITIAL CONDITIONS:**

An NLO has been assigned the task of performing a valve lineup in the Auxiliary Building. The area where the valves are located has a dose rate of 24 mR/Hr. and also has some airborne activity. From experience the NLO knows that it will take 45 minutes to perform the valve lineup without a respirator, or 75 minutes to complete the job with a respirator. If the job is done without a respirator the NLO will receive 2 DAC-hours of internal exposure.

# **INITIATING CUES:**

You have been directed to: Determine the dose the NLO will receive if he doesn't wear a respirator while performing the valve lineup and the dose he will receive if he wears a respirator. Report to the Shift Supervisor which method will be the lowest dose and keep exposure ALARA.

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| • START TIME:   |
|---|
| *1. Calculates NLO dose without a respirator.   |
| Standards Calculates the dose to the NLO without a respirator.  |
| 0.75 hours X 24 mR/hour = 18.0 mRem<br>2 DAC hours X 2.5 mRem/DAC-hour = 5<br>Total = 18.0 + 5 mRem = 23 mRem   |
| Evaluator's Comments  |
| *2. Calculates NLO dose with a respirator.  |
| Standards   |
| Calculates the dose to the NLO with a respirator 1.25 hours X 24 mRem/hour = 30 mRem.   |
| Evaluator's Comments  |
| *3. Determines that the job should be performed without a respirator and reports findings to Shif<br>Supervisor.  |
| Standards Reports to Shift Supervisor that performance of work should be performed without a respirator to achieve a dose that is ALARA. Calculates the dose to the NLO without a respirator ALARA. |
| Evaluator's Comments  |
| *** TERMINATE JPM AT THIS POINT ***   |
| • STOP TIME:  |

# **INITIAL CONDITIONS:**

An NLO has been assigned the task of performing a valve lineup in the Auxiliary Building. The area where the valves are located has a dose rate of 24 mR/Hr., and also has some airborne activity. From experience the NLO knows that it will take 45 minutes to perform the valve lineup with out a respirator, or 75 minutes to complete the job with a respirator. If the job is done without a respirator the NLO will receive 2 DAC-hours of internal exposure.

# **INITIATING CUES:**

You have been directed to: Determine the dose the NLO will receive if he doesn't wear a respirator while performing the valve lineup and the dose he will receive if he wears a respirator. Report to the Shift Supervisor which method will be the lowest dose and keep exposure ALARA

# NORTH ANNA POWER STATION INITIAL LICENSE EXAMINATION ADMINISTRATIVE JOB PERFORMANCE MEASURE

Prepare a follow-up report of emergency to the state and local governments (RO)

| CANDIDATE |      |  |  |  |
|-----------|------|--|--|--|
|           | <br> |  |  |  |
| EXAMINER  | <br> |  |  |  |

# NORTH ANNA POWER STATION INITIAL LICENSE EXAMINATION ADMINISTRATIVE JOB PERFORMANCE MEASURE

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|   | - |   | n | ı |

Prepare a follow-up report of emergency to the state and local governments. (EPIP-2.01)

| References:   |                     |
|---|---------------------|
| EPIP-2.01, "Notification of state and local go          | vernments," Rev. 24 |
| <u>Validation Time:</u> 8 min. Time Critical: <u>No</u> |                     |
| Candidate:  NAME  |                     |
| Performance Rating: SAT UNSAT                           | _                   |
| Examiner: NAME  | SIGNATURE DATE      |
| C   | OMMENTS             |
|   |                     |
|   |                     |
|   |                     |

# Tools/Equipment/Procedures Needed:

EPIP-2.01, "Notification of state and local governments," Rev. 24

### **READ TO OPERATOR**

### **DIRECTION TO TRAINEE:**

I will explain the initial conditions, and state the task to be performed. All steps shall be performed for this JPM. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

### **INITIAL CONDITIONS:**

A general emergency was declared 60 minutes ago.

A radioactive release is presently occurring.

The SEM describes the event as a "Loss of reactor coolant and loss of containment integrity."

Offsite assistance has NOT been requested.

Station monitoring teams have been dispatched offsite.

Station emergency personnel have been called in.

Onsite personnel have NOT been evacuated.

The prognosis of the situation is "worsening," according to the SEM.

All meteorological instrumentation is operable.

Main tower lower wind speed is 8 mph and average wind direction is 410°.

The recommended offsite protective actions are the expanded PAR, which is to evacuate 360° from 0 to 5 miles and shelter downwind sectors from 5 to 10 miles.

The initial report of emergency to the state and local governments was transmitted from the control room.

You have taken turnover as the emergency communicator in the LEOF.

### **INITIATING CUES:**

You are requested to prepare the  $\underline{\text{first}}$  follow-up report of emergency to the state and local governments in accordance with  $\overline{\text{EPIP}}$ -2.01, steps 5 - 18.

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| STEP 1:    | Record message number (top of att. 2)   | SAT              |
|------------|---|------------------|
| STANDARD:  | Operator records "2" in the message # blank.  |                  |
| COMMENTS:  |   | UNSAT            |
|            |   | 0110/11          |
|            |   |                  |
| STEP 2:    | Check off facility from which notification will be made (top of att. 2)   | SAT              |
| STANDARD:  | Operator checks LEOF blank.   |                  |
| COMMENTS:  |   | LINICAT          |
|            |   | UNSAT            |
|            |   |                  |
| STEP 3:    | Designate emergency classification. (item 1)  | CRITICAL<br>STEP |
| STANDARD:  | Operator checks the General Emergency box and enters today's date and the time given in the initial conditions in item 1. | SAT              |
| EXAMINER'S | CUE: Use the information provided in the Initial Conditions.  |                  |
| COMMENTS:  |   | UNSAT            |
|            |   |                  |
|            |   |                  |
|            |   |                  |
| STEP 4:    | Determine status of release of radioactive material. (item 2)   | CRITICAL<br>STEP |
| STANDARD:  | Operator checks the "Is presently occurring" box in item 2.   |                  |
| COMMENTS:  |   | SAT              |
|            |   |                  |
|            |   | UNSAT            |
|            |   |                  |
|            |   |                  |

| STEP 5:<br>STANDARD: | Record description of event. (item 3)  Operator enters "Loss of reactor coolant and loss of containment integrity" in   | SAT   |
|----------------------|---|-------|
| COMMENTS:            | item 3.   | UNSAT |
| OGNIMEIVIO.          |   |       |
| STEP 6:<br>STANDARD: | Determine assistance requested. (item 4)  Operator checks the "None" box in item 4.   | SAT   |
| COMMENTS:            |   | UNSAT |
| STEP 7:<br>STANDARD: | Determine emergency response actions underway. (item 5)  Operator checks the "Station monitoring teams dispatched offsite" box and "Station emergency personnel called in" box in item 5. | SAT   |
| COMMENTS:            |   | UNSAT |
| STEP 8:<br>STANDARD: | Determine if evacuation of onsite personnel is complete. (item 6)  Operator checks the "No" box in item 6.  | SAT   |
| COMMENTS:            |   | UNSAT |
| STEP 9:<br>STANDARD: | Determine prognosis of situation. (item 7)  Operator checks the Worsening box in item 7.  | SAT   |
| COMMENTS:            |   | UNSAT |
|                      |   |       |

| STEP 10:<br>STANDARD: | Determine status of meteorological instrumentation. (item 8)  Operator checks Based on onsite measurements box in item 8.                                   | SAT              |
|-----------------------|---|------------------|
| COMMENTS:             |   | UNSAT            |
| STEP 11:<br>STANDARD: | Record the meteorological data. (item 8)  Operator checks the Wind Direction box and enters NE or northeast, then   | SAT              |
| COMMENTS:             | checks the Wind Speed box and enters 8 in item 8.   | UNSAT            |
|                       |   |                  |
| STEP 12:              | Record your name. (item 9)  | SAT              |
| STANDARD:             | Operator enters his/her name in item 9.   |                  |
| COMMENTS:             |   | UNSAT            |
| STEP 13:              | Determine offsite protective actions recommended. (item 10)   | CRITICAL<br>STEP |
| STANDARD:             | Operator checks the Expanded box and the Evacuate 360 from 0 miles to 5 miles box in item 10.   | SAT              |
| COMMENTS:             |   |                  |
|                       |   | UNSAT            |
| STEP 14:              | Record downwind sectors. (item 10)  | CRITICAL         |
| STANDARD:             | Operator checks the Shelter sectors box and enters K, L, and M in the Shelter sectors blanks, and enters 5 and 10 in the Shelter sectors blanks of item 10. | STEPSAT          |
| COMMENTS:             |   | UNSAT            |
|                       |   |                  |

| STEP 15: STANDARD: COMMENTS:            | Indicate that a report of radiological conditions will be sent. (item 11)  Operator checks the We will provide the report of radiological conditions to the state representatives in the LEOF box in item 11. | SAT          |
|---|---|--------------|
| STEP 16: STANDARD: COMMENTS:            | Check emergency remains in effect. (step 4)  Operator initials step 4.  | SAT<br>UNSAT |
| STEP 17: STANDARD: EXAMINER'S COMMENTS: | Have SEM/RM approve and initial attachment. (step 5)  Operator states that he/she has completed the task.  CUE: Assume the SEM has initialed the attachment.  | SAT<br>UNSAT |
|   | END OF TASK   |              |

# CANDIDATE CUE SHEET (TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

# **INITIAL CONDITIONS:**

A general emergency was declared 60 minutes ago.

A radioactive release is presently occurring.

The SEM describes the event as a "Loss of reactor coolant and loss of containment integrity."

Offsite assistance has NOT been requested.

Station monitoring teams have been dispatched offsite.

Station emergency personnel have been called in.

Onsite personnel have NOT been evacuated.

The prognosis of the situation is "worsening," according to the SEM.

All meteorological instrumentation is operable.

Main tower lower wind speed is 8 mph and average wind direction is 410°.

The recommended offsite protective actions are the expanded PAR, which is to evacuate 360° from 0 to 5 miles and shelter downwind sectors from 5 to 10 miles.

The initial report of emergency to the state and local governments was transmitted from the control room.

You have taken turnover as the emergency communicator in the LEOF.

# **INITIATING CUES:**

You are requested to prepare the <u>first</u> follow-up report of emergency to the state and local governments in accordance with EPIP-2.01, steps 5 - 18.

ES-301

Administrative Topics Outline

Form ES-301-1 (R8, S1)

| Facility: North Anna Power Station Examination Level RO |              | Date of Examination: 6/10-14/2002 Operating Test Number: 1A     |
|---|--------------|---|
| Administrative<br>Topic/Subject<br>Description          | 1. ONE Admir | od of evaluation:<br>nistrative JPM, OR<br>nistrative Questions |

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Developed for the North Anna, June 2002, Initial Examination



# U. S. Nuclear Regulatory Commission

# Region II

A-3 Administrative Section

# Title:

Determine Dose Rates with Airborne Activity Present

# JPM TITLE: Determine Dose Rates with Airborne Activity Present

JPM NUMBER: NRC-ADMIN-JPM-03

JPM REV. DATE: 03/14/02

TIME VALIDATION: MINUTES

AN 'X' BELOW INDICATES THE APPLICABLE METHOD(S) OF TESTING WHICH MAY BE USED:

PERFORM: X SIMULATE: DISCUSS: \_\_\_\_

### INSTRUCTOR'S INFORMATION

Task: Determine Dose Rates with Airborne Activity Present

**Applicability** 

**Est Completion Time** 

**Actual Time** 

SRO and RO

10 Minutes

# **NUREG-1122 Importance Ratings**

GEN 2.3.1 Knowledge of 10 CFR: 20 and related facility radiation control requirements. (RO 2.6/SRO 3.0).

GEN 2.3.4 Knowledge of facility ALARA program. (RO 2.5/SRO2.9)

# **Conditions**

• Task is to be PERFORMED in an area that has adequate reference material.

# **Standards**

Dose is correctly calculated with a respirator and without a respirator.

# **READ TO THE TRAINEE**

I will explain the initial conditions, and state the task to be performed. All steps shall be performed/simulated for this JPM. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

# **INITIAL CONDITIONS:**

An NLO has been assigned the task of performing a valve lineup in the Auxiliary Building. The area where the valves are located has a dose rate of 24 mR/Hr. and also has some airborne activity. From experience the NLO knows that it will take 45 minutes to perform the valve lineup with out a respirator, or 75 minutes to complete the job with a respirator. If the job is done without a respirator the NLO will receive 2 DAC-hours of internal exposure.

# **INITIATING CUES:**

You have been directed to: Determine the dose the NLO will receive if he doesn't wear a respirator while performing the valve lineup and the dose he will receive if he wears a respirator. Report to the Shift Supervisor which method will be the lowest dose and keep exposure ALARA.

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| • START TIME:   |
|---|
| *1. Calculates NLO dose without a respirator.   |
| Standards Calculates the dose to the NLO without a respirator. 0.75 hours X 24 mR/hour = $18.0$ mRem + 2 DAC hours X 2.5 mRem/DAC-hour = $18.0$ + 5 mRem = $23$ mRem.                     |
| Evaluator's Comments  |
| *2. Calculates NLO dose with a respirator.  |
| Standards   |
| Calculates the dose to the NLO with a respirator 1.25 hours X 24 mRem/hour = 30 mRem.   |
| Evaluator's Comments  |
| *3. Determines that the job should be performed without a respirator and reports findings to Shift Supervisor.  |
| Standards Reports to Shift Supervisor that performance of work should be performed without a respirator achieve a dose that is Calculates the dose to the NLO without a respirator ALARA. |
| Evaluator's Comments  |
| *** TERMINATE JPM AT THIS POINT ***  • STOP TIME:   |
|   |

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### **INITIAL CONDITIONS:**

An NLO has been assigned the task of performing a valve lineup in the Auxiliary Building. The area where the valves are located has a dose rate of 24 mR/Hr., and also has some airborne activity. From experience the NLO knows that it will take 45 minutes to perform the valve lineup with out a respirator, or 75 minutes to complete the job with a respirator. If the job is done without a respirator the NLO will receive 2 DAC-hours of internal exposure.

# **INITIATING CUES:**

You have been directed to: Determine the dose the NLO will receive if he doesn't wear a respirator while performing the valve lineup and the dose he will receive if he wears a respirator. Report to the Shift Supervisor which method will be the lowest dose and keep exposure ALARA.

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# Dominion North Anna Power Station JOB PERFORMANCE MEASURE EVALUATION

# **OPERATOR PROGRAM**

# **INITIAL CONDITIONS**

Prodac-250 computer has malfunctioned

Unit is stable at 100% power

All ex-core power-range channels are operable

The instrument technicians have obtained upper and lower detector currents and recorded them on attachment 3 of 1-PT-23

# **INITIATING CUE**

You are requested to calculate the maximum QPTR and determine the quadrant of the maximum QPTR in accordance with 1-PT-23, attachment 3.

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# Dominion North Anna Power Station JOB PERFORMANCE MEASURE EVALUATION

# **OPERATOR PROGRAM**

# **R709**

| T. | A | S | K |
|----|---|---|---|
|----|---|---|---|

Determine the quadrant power tilt ratio by hand calculation (1-PT-23).

# TASK STANDARDS

Normalized currents and QPTR are calculated to four decimal places and the quadrant of the maximum QPTR is determined

# **K/A REFERENCE:**

015-A1.04 (3.5/3.7)

# **ALTERNATE PATH:**

N/A

# TASK COMPLETION TIMES

| Validation Time = | 8 minutes | Start Time = |
|-------------------|-----------|--------------|
| Actual Time =     | minutes   | Stop Time =  |

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# PERFORMANCE EVALUATION

|     | Rating                          | [ ] SATISFACTORY | [ ] UNSATISFACTORY |
|-----|---------------------------------|------------------|--------------------|
|     | Candidate (Print)               |                  |                    |
|     | Evaluator (Print)               |                  | ·                  |
|     | Evaluator's Signature /<br>Date |                  |                    |
| EVA | ALUATOR'S COMMENT               | S                |                    |
|     |                                 |                  |                    |
|     |                                 |                  |                    |

# Dominion North Anna Power Station

# JOB PERFORMANCE MEASURE (Evaluation)

#### OPERATOR PROGRAM

#### R709

# READ THE APPLICABLE INSTRUCTIONS TO THE CANDIDATE

#### Instructions for Simulator JPMs

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

#### Instructions for In-Plant JPMs

I will explain the initial conditions, and state the task to be performed. All steps, including any required communications, shall be simulated for this JPM. Under no circumstances are you to operate any plant equipment. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

# **INITIAL CONDITIONS**

Prodac-250 computer has malfunctioned

Unit is stable at > 75% power

All ex-core power-range channels are operable

The instrument technicians have obtained upper and lower detector currents and recorded them on attachment 3 of 1-PT-23

#### **INITIATING CUE**

You are requested to calculate the maximum QPTR and determine the quadrant of the maximum QPTR in accordance with 1-PT-23, attachment 3.

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| Cald   | culator                                 |   |   |
|--------|---|---|---|
| PERFOR | RMANCE STEPS                            |   |   |
| ST     | ART TIME                                |   |   |
| 1      | Record the expedience Reactor Data Book | cted 100% power current readings from the ok. | Procedure Step NA                       |
|        | STANDARDS                               | Operator obtains reactor data book and re-    | SAT [] UNSAT [] cords detector currents |

are calculated to four decimal places

| Calculate the no | ormalized detector currents.            | Procedure Step NA          |
|------------------|---|----------------------------|
| RITICAL STI      | <b>EP</b>                               | SAT[] UNSAT[]              |
| STANDARDS        | Normalized detector currents are places | calculated to four decimal |

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**TOOLS AND EQUIPMENT** 

Notes/Comments

| Calculate the qua           | adrant power tilt ratios.  | Procedure Step NA          |
|-----------------------------|--|----------------------------|
| CRITICAL STE                | P  | SAT[] UNSAT[]              |
|                             |  |                            |
| STANDARDS                   | Upper and lower quadrant power tilt rat decimals                                   | ios are calculated to four |
| Notes/Comments              |  |                            |
|                             |  |                            |
|                             |  |                            |
| Record the maximaximum QPTR | mum QPTR and the quadrant of the   | Procedure Step NA          |
| CRITICAL STE                | P  | SAT[] UNSAT[]              |
| STANDARDS                   | 1.0022 (± .0002) is recorded as the ma<br>lower is recorded as the quadrant of the |                            |
| <u> </u>                    | Tower to recorded do the quadrant of the   |                            |
|                             |  |                            |
| Notes/Comments              |  |                            |

# **Dominion**

North Anna Power Station

JOB PERFORMANCE MEASURE EVALUATION

**OPERATOR PROGRAM** 

# **INITIAL CONDITIONS**

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Fuel movement is in progress

NIS SR LOSS OF DET VOLTAGE annunciator (1A-A1) has just alarmed

# **INITIATING CUE**

You are requested to respond to a source-range nuclear instrumentation malfunction during refueling using 1-AP-4.1.

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# Dominion North Anna Power Station JOB PERFORMANCE MEASURE EVALUATION

# **OPERATOR PROGRAM**

# **R714**

| TASK |
|------|
|------|

Respond to a source-range nuclear instrumentation malfunction during refueling (1-AP-4.1).

# **TASK STANDARDS**

Core alterations were stopped and the amplifier select switch was selected to an operable channel

# **K/A REFERENCE:**

015-A2.02 (3.1/3.5)

# TASK COMPLETION TIMES

Validation Time = 4 minutes Start Time =

Actual Time = \_\_\_\_ minutes Stop Time =

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# PERFORMANCE EVALUATION

|     | Rating                          | [ ] SATISFACTORY | [ ] UNSATISFACTORY |             |
|-----|---------------------------------|------------------|--------------------|-------------|
|     | Candidate (Print)               |                  |                    | <del></del> |
|     | Evaluator (Print)               |                  |                    |             |
|     | Evaluator's Signature /<br>Date |                  |                    | _           |
| EVA | LUATOR'S COMMENTS               | <u>3</u>         |                    |             |
|     |                                 |                  |                    |             |
|     |                                 |                  |                    |             |

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# Dominion North Anna Power Station

# JOB PERFORMANCE MEASURE (Evaluation)

#### OPERATOR PROGRAM

**R714** 

# READ THE APPLICABLE INSTRUCTIONS TO THE CANDIDATE

#### Instructions for Simulator JPMs

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

#### Instructions for In-Plant JPMs

I will explain the initial conditions, and state the task to be performed. All steps, including any required communications, shall be simulated for this JPM. Under no circumstances are you to operate any plant equipment. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

# **INITIAL CONDITIONS**

Fuel movement is in progress

NIS SR LOSS OF DET VOLTAGE annunciator (1A-A1) has just alarmed

#### **INITIATING CUE**

You are requested to respond to a source-range nuclear instrumentation malfunction during refueling using 1-AP-4.1.

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| TOOLS A | ND EQUIPMENT          |   |                                      |
|---------|-----------------------|---|--------------------------------------|
| None    | <b>;</b>              |   |                                      |
| PERFORI | MANCE STEPS           |   |                                      |
| STA     | RT TIME               |   |                                      |
|         |                       |   |                                      |
| 1       | Stop power incre      | ase.  | Procedure Step 1                     |
|         |                       |   | SAT[] UNSAT[]                        |
|         | NOTE TO THE EVALUATOR | You may now provide the requ                      | ested procedure to the trainee       |
|         | STANDARDS             | Since step is NA and there is n to the next step. | o RNO the operator will proceed      |
|         | Notes/Comments        |   |                                      |
|         |                       |   |                                      |
|         |                       |   |                                      |
|         |                       |   |                                      |
|         |                       |   |                                      |
| 2       | Check if the unit     | is in mode 6.                                     | Procedure Step 2                     |
|         |                       |   | SAT[] UNSAT[]                        |
|         | STANDARDS             | Since unit is in mode 6 the ope                   | rator will proceed to the next step. |
|         | Notes/Comments        |   |                                      |
|         |                       |   |                                      |
|         |                       |   |                                      |

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| 3 | Stop core altera                                      | tions.   | Procedure Step 3                  |  |
|---|---|--|-----------------------------------|--|
|   | STANDARDS Notification is made for person alterations |  | SAT[] UNSAT[]                     |  |
|   |   |  | nel in containment to stop core   |  |
|   | Notes/Comment   | S  |                                   |  |
|   |   |  |                                   |  |
| _ |   |  |                                   |  |
|   |   |  |                                   |  |
|   |   |  |                                   |  |
|   | Stop all positive                                     | reactivity additions.                              | Procedure Step 4                  |  |
|   | Stop all positive                                     | reactivity additions.                              | Procedure Step 4  SAT [] UNSAT [] |  |
|   | Stop all positive                                     | Since step is NA and there is n                    |                                   |  |
|   | STANDARDS   | Since step is NA and there is no to the next step. | SAT[] UNSAT[]                     |  |
|   |   | Since step is NA and there is no to the next step. | SAT[] UNSAT[]                     |  |

| Verify that only o                | ne source-range instrument has failed.   | Procedure Step 5                |
|-----------------------------------|--|---------------------------------|
|                                   |  | SAT[] UNSAT[]                   |
| Dead simulator cue                | Only one source-range instrument (NI-31)   | has failed                      |
| STANDARDS                         | Since only source range instrument has fa proceed to the next step.                            | iled the operator will          |
| Notes/Comments                    |  |                                 |
|                                   |  |                                 |
|                                   |  |                                 |
|                                   |  |                                 |
|                                   |  |                                 |
| <br>Verify that audibl available. | le source-range indication in containment is   | Procedure Step 6                |
|                                   |  | Procedure Step 6  SAT[] UNSAT[] |
|                                   |  | SAT[] UNSAT[]                   |
| available.                        | le source-range indication in containment is  The source-range audible count rate speal silent | SAT[] UNSAT[]                   |

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|   | Select the opera  | able channel on the audible count rate dra   | Procedure Step 6<br>RNO  |
|---|-------------------|--|--------------------------|
|   |                   |  | SAT[] UNSAT[]            |
|   | STANDARDS         | The operator will select N32 on the aud  | dible count rate drawer. |
|   | Notes/Comment     | S  |                          |
|   |                   |  |                          |
|   |                   |  |                          |
| _ |                   |  |                          |
|   |                   |  |                          |
|   |                   |  |                          |
|   | Verify audible se | ource-range counts in containment.   | Procedure Step 6<br>RNO  |
|   | Verify audible so | ource-range counts in containment.   |                          |
|   | Verify audible s  | · · · · · · · · · · · · · · · · · · ·  | SAT[] UNSAT[]            |
|   | Verify audible so | ource-range counts in containment.  The source-range audible count rate specifications | SAT[] UNSAT[]            |
|   | EXAMINER          | The source-range audible count rate sp   | SAT[] UNSAT[]            |

| <del>)</del><br>—— | Place the amplif  | fier select switch in the A1 or A2 position.                                    | Procedure Step 6<br>RNO          |
|--------------------|-------------------|---|----------------------------------|
|                    | CRITICAL ST       | EP  | SAT[] UNSAT[]                    |
|                    | STANDARDS         | Operator places amplifier selector switch                                       | in other position                |
|                    | EXAMINER<br>CUES  | The source-range audible count rate speanow beeping                             | aker in containment is           |
|                    | Notes/Comment     | S   |                                  |
|                    |                   |   |                                  |
|                    |                   |   |                                  |
|                    |                   |   |                                  |
| 0                  | Enter action sta  | tement in accordance with tech specs.   | Procedure Step 7                 |
| 0                  | Enter action sta  | tement in accordance with tech specs.   | Procedure Step 7  [SAT[] UNSAT[] |
| 0                  | Enter action star | tement in accordance with tech specs.  Assume that another operator will comple | SAT[] UNSAT[]                    |
| 0                  | EXAMINER          | Assume that another operator will comple  | SAT[] UNSAT[]                    |
| 0                  | EXAMINER<br>CUES  | Assume that another operator will comple  | SAT[] UNSAT[]                    |
| 0                  | EXAMINER<br>CUES  | Assume that another operator will comple  | SAT[] UNSAT[]                    |

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# SIMULATOR, LABORATORY, IN--PLANT SETUP (If Required)

## SIMULATOR SETUP

# JOB PERFORMANCE MEASURE **R714**

# **TASK**

Respond to a source-range nuclear instrumentation malfunction during refueling (1-AP-4.1).

# **CHECKLIST**

| <br>Recall the IC for mode 5  |
|---|
| <br>Pressurizer level = approximately 15%                                     |
| <br>Enter malfunction MNI1001, time delay = 10, ramp = 0, stop = 0, TRGR = NA |
| <br>Alarm override V1AA1_W, 10 seconds, override = ON                         |
| <br>Switch override AUDIO_MULT_OFF, 10 seconds, override = ON                 |
| Place the simulator in EREE7E   |

# NORTH ANNA POWER STATION INITIAL LICENSE EXAMINATION ADMINISTRATIVE JOB PERFORMANCE MEASURE

Review and approve a tagging record (SRO)

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| CANDIDATE |  |  |
|-----------|--|--|
|           |  |  |
| EXAMINER  |  |  |

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# NORTH ANNA POWER STATION INITIAL LICENSE EXAMINATION ADMINISTRATIVE JOB PERFORMANCE MEASURE

| Task:                                  |                |           |         |
|--|----------------|-----------|---------|
| Review and approve a tagging record    | d. (OPAP-0010) |           |         |
| References:                            |                |           |         |
| OPAP-0010, "Tag-Outs," Rev. 15         |                |           |         |
| Validation Time: 6 min. Time Critica   | ıl: <u>No</u>  |           |         |
| ====================================== |                |           | ======= |
| Candidate: NAME                        |                | -         |         |
| IVAIVIL                                |                |           |         |
| Performance Rating: SAT UNSAT          |                |           |         |
| Examiner:                              |                |           | /       |
| NAME                                   |                | SIGNATURE | DATE    |
|  | COMMENTS       |           |         |
|  |                |           |         |
|  |                |           |         |
|  |                |           |         |

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### Tools/Equipment/Procedures Needed:

Tagging record package.

### **READ TO OPERATOR**

### **DIRECTION TO TRAINEE:**

I will explain the initial conditions, and state the task to be performed. All steps shall be performed for this JPM. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

# **INITIAL CONDITIONS:**

1-BD-6, "A" SG blowdown piping penetration LMC/drain valve, leaks by and is scheduled to be replaced.

1-BD-7, "A" SG blowdown header isolation valve is difficult to operate and is scheduled to be replaced.

# **INITIATING CUES:**

You are requested to review the tagging record package for 1-BD-6/7 for accuracy and completeness and inform the Shift Supervisor of the results of your review.

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| STEP 1:  STANDARD:  COMMENTS: | Verify the tag-out is adequate for the tasks and hazards involved. (6.3.3.a)  Operator reviews the tagging record and reference material.   | SAT              |
|-------------------------------|---|------------------|
|                               |   | 0110/11          |
| STEP 2:                       | Identify that an inadequate boundary exists. (6.3.3.a)  | CRITICAL<br>STEP |
| STANDARD:                     | Operator determines that 1-GN-109, N2 to "A" SG, was excluded as a boundary valve.  | SAT              |
| COMMENTS:                     |   | UNSAT            |
| STEP 3:                       | Identify that an inadequate vent/drain flow path exists. (6.3.3.a)  | CRITICAL<br>STEP |
| STANDARD:                     | Operator determines that 1-BD-7, "A" SG blowdown header isolation, should be tagged OPEN, and that the item should be a "maintenance" item instead of a yellow tag.   | STEP<br>SAT      |
| COMMENTS:                     | Determining the tagged position as OPEN vs. CLOSED satisfies the critical step.   | UNSAT            |
| STEP 4:                       | Identify that the order to hang tags is incorrect. (6.3.3.a)  | CRITICAL<br>STEP |
| STANDARD:                     | <ul> <li>Operator determines the following tagging order errors:</li> <li>Tag number 6 (1-BD-95) should be ordered "4"</li> <li>Tag number 8 (1-BD-7) should be ordered "5"</li> <li>Tag number 9 (1-BD-6) should be ordered "6"</li> </ul> | SAT              |
| COMMENTS:                     | <ul> <li>(new) tag number 10 (1-GN-109) should be ordered "4"</li> <li>Determining that tag number 9 (1-BD-6) should be ordered "6" satisfies the</li> </ul>  | UNSAT            |
|                               | critical step.  |                  |

| <u>STEP 5</u> : | If the review indicates a deficiency, notify the preparer and resolve the problem or return it to the preparer. (6.3.4)                             | SAT   |
|-----------------|---|-------|
| STANDARD:       | Operator states that he/she would notify the tagging office of the deficiency and resolve the problem or return the tagging record to the preparer. | UNSAT |
| EXAMINER'S      | 3.10/11   |       |
| COMMENTS:       | ·   |       |
|                 |   |       |
|                 |   |       |

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# CANDIDATE CUE SHEET (TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

# **INITIAL CONDITIONS:**

1-BD-6, "A" SG blowdown piping penetration LMC/drain valve, leaks by and is scheduled to be replaced.

1-BD-7, "A" SG blowdown header isolation valve is difficult to operate and is scheduled to be replaced.

# **INITIATING CUES:**

You are requested to review the tagging record package for 1-BD-6/7 for accuracy and completeness and inform the Shift Supervisor of the results of your review.

# NORTH ANNA POWER STATION INITIAL LICENSE EXAMINATION ADMINISTRATIVE JOB PERFORMANCE MEASURE

Determine expanded tagging boundaries (RO)

| CANDIDATE |      | <br> | <br> |  |
|-----------|------|------|------|--|
| EXAMINER  | <br> |      | <br> |  |

Rev. 0

# NORTH ANNA POWER STATION INITIAL LICENSE EXAMINATION ADMINISTRATIVE JOB PERFORMANCE MEASURE

| Task:                                      |           |           |
|--|-----------|-----------|
| Determine tagging boundaries (1-OPAP-0010) |           |           |
| References:                                |           |           |
| 1-OPAP-0010, Rev. 15                       |           |           |
| Validation Time: 30 min. Time Critical: No |           |           |
| =======================================    |           | =======   |
| Candidate: NAME                            |           |           |
| Performance Rating: SAT UNSAT              |           |           |
| Examiner:NAME                              | SIGNATURE | /<br>DATE |
| COMME                                      | NTS       |           |
|  |           |           |
|  |           |           |

# Tools/Equipment/Procedures Needed:

1-OPAP-0010, "Tagouts," Rev. 15 Mind computer or FM prints

# **READ TO OPERATOR**

# **DIRECTION TO TRAINEE:**

I will explain the initial conditions, and state the task to be performed. All steps shall be performed for this JPM. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

# **INITIAL CONDITIONS:**

Blowdown is in service on "B" and "C" steam generators.

1-BD-6, "A" SG blowdown piping penetration LMC/drain valve, leaks by.

Maintenance has scheduled 1-BD-6 to be replaced.

When the tagout was hung for 1-BD-6 replacement, it was discovered that 1-BD-7, "A" SG blowdown header isolation valve leaks by.

### **INITIATING CUES:**

You are requested to determine the necessary danger tags to expand the boundary to allow maintenance to work 1-BD-7 and to replace 1-BD-6. Use the space below to identify the item(s) to be tagged and the tagged position(s).

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| STEP 1: STANDARD: NOTE TO EXA             | Determine the expanded mechanical boundaries.  Operator determines the additional boundary valves that need to be tagged in accordance with the attached key.  MINER: JPM steps need NOT be performed in sequence.   | CRITICAL<br>STEP SATUNSAT |
|---|--|---------------------------|
|   | Determine the expanded vent/drain flow paths.  Operator determines the additional vent/drain valves that need to be tagged in accordance with the attached key.  CUE: If applicant asks whether the tag on 1-BD-7 has been cleared, state as been cleared. | CRITICAL<br>STEPSATUNSAT  |
| STEP 3:  STANDARD:  EXAMINER'S  COMMENTS: | Enter data into the computer tagging system.  Operator states that he/she has completed the task.  CUE: Another operator will enter the data into the tagging system.  | SAT<br>UNSAT              |
|   | END OF TASK  |                           |

# CANDIDATE CUE SHEET (TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

| INITIAL CONDITIONS:   |
|---|
| Błowdown is in service on "B" and "C" steam generators.   |
| 1-BD-6, "A" SG blowdown piping penetration LMC/drain valve, leaks by.   |
| Maintenance has scheduled 1-BD-6 to be replaced.  |
| When the tagout was hung for 1-BD-6 replacement, it was discovered that 1-BD-7, "A" SG blowdown header isolation valve leaks by.  |
| INITIATING CUES:  |
| You are requested to determine the necessary danger tags to expand the boundary to allow maintenance to work 1-BD-7 and to replace 1-BD-6. Use the space below to identify the item(s) to be tagged and the tagged position(s). |
|   |
|   |
| <del></del>   |
|   |
|   |
|   |
|   |
|   |
|   |

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|   |          |  |              | <br> |      |
|---|----------|--|--------------|------|------|
|   |          |  |              | <br> | -    |
|   |          |  |              |      |      |
|   |          | <br>······································ | <br>         | <br> | <br> |
| _ |          |  |              |      |      |
|   |          |  |              |      |      |
|   |          | <br>                                       | <del>4</del> | <br> |      |
|   |          |  |              |      |      |
|   | <u>.</u> | <br>                                       | <br>         | <br> | <br> |
|   | •        |  |              |      |      |
|   |          |  |              |      |      |
|   |          | <br>                                       | <br>         | <br> | <br> |

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# North Anna Draft JPMs

# Control Room Systems and Facility Walk-Through Test Outline

| Facility: North Anna   | Date of Examinat                  | tion: <u>6/10-14</u> | /2002              |
|--|-----------------------------------|----------------------|--------------------|
| Exam Level (circle one): RO / SRO(I) / SRO   | (U) Opera                         | ating Test No.:      |                    |
| B.1 Control Room Systems   |                                   |                      |                    |
| System / JPM Title   |                                   | Type<br>Code*        | Safety<br>Function |
| Perform the Immediate Operator Actions in continuous uncontrolled rod motion. (R475 001AA1.01  |                                   | M,S,A                | 1                  |
| b. Respond to a Shutdown LOCA in Mode 4. 002A2.01  | (R693).                           | D,A,S,L              | 2                  |
| c. Initiate RCS bleed and feed in response to secondary heat sink (1-FR-H.1) (R223). E0        |                                   | D,S,A                | 48                 |
| d. Start A Reactor Coolant Pump. (1-OP-5.2)<br>003A4.01  | (R164MOD).                        | M,S,A                | 4P                 |
| e. Reduce Containment Pressure to Subatmo<br>( 1-FR-Z.4) (R765) 022A4.04                       | espheric                          | D,S                  | 5                  |
| f. Establish Safety Injection flow during a loss recovery with safety Injection required. (R20 | of all AC power<br>08). 056AA1.06 | D,S                  | 6                  |
| g. Respond to a Leak in the Component Cool<br>System (1-AP-15) (R707). 008A2.02                | ing Water                         | D,S                  | 8                  |
| B.2 Facility Walk-Through  |                                   |                      |                    |
| a. Align a charging flow path locally. (N907) 0  | 04-A2.07                          | D,R                  | 2                  |
| b. Prepare the SBO Diesel Generator for Loa<br>an automatic start (N1671). 055EA2.03           | ding Following                    | D                    | 6                  |
| c. Transfer the Remote Monitoring ex-core ne<br>detector to its Dedicated Power Source (N      |                                   | D                    | 9                  |
| * Type Codes: (D)irect from bank, (M)odified room, (S)imulator, (L)ow-Power, (R)CA             | from bank, (N)ew, (               | A)lternate path      | ı, (C)ontrol       |

| Facility: North Anna Date of Examina Exam Level (circle one): RO / SRO(I) / SRO(U) Oper                                     | tion: 6/10-14<br>rating Test No. |                    |
|---|----------------------------------|--------------------|
| B.1 Control Room Systems  |                                  |                    |
| System / JPM Title  | Type<br>Code*                    | Safety<br>Function |
| a. Perform the Immediate Operator Actions in Response to a continuous uncontrolled rod motion. (R475MOD). 001AA1.01         | M,S,A                            | 1                  |
| b. Respond to a Shutdown LOCA in Mode 4. (R693).<br>002A2.01  | D,A,S,L                          | 2                  |
| c. Initiate RCS bleed and feed in response to a loss of secondary heat sink (1-FR-H.1) (R223). E05-EA1.1                    | D,S,A                            | 48                 |
| d. Start A Reactor Coolant Pump. (1-OP-5.2) (R164MOD).<br>003A4.01  | M,S,A                            | 4P                 |
| e. Reduce Containment Pressure to Subatmospheric<br>( 1-FR-Z.4) (R765) 022A4.04   | D,S                              | 5                  |
| f. Establish Safety Injection flow during a loss of all AC power recovery with safety Injection required. (R208). 056AA1.06 | D,S                              | 6                  |
| g. Respond to a Leak in the Component Cooling Water<br>System (1-AP-15) (R707). 008A2.02                                    | D,S                              | 8                  |
| B.2 Facility Walk-Through   |                                  |                    |
| a. Align a charging flow path locally. (N907) 04-A2.07  | D,R                              | 2                  |
| b. Prepare the SBO Diesel Generator for Loading<br>Following an automatic start (N1671). 055EA2.03                          | D                                | 6                  |
| c. Transfer the Remote Monitoring ex-core neutron flux detector to its Dedicated Power Source (N963). 067AA2.16             | D                                | 9                  |
| * Type Codes: (D)irect from bank, (M)odified from bank, (N)ew, room, (S)imulator, (L)ow-Power, (R)CA                        | (A)lternate path                 | n, (C)ontrol       |

# Dominion North Anna Power Station JOB PERFORMANCE MEASURE EVALUATION

# **OPERATOR PROGRAM**

# **INITIAL CONDITIONS**

Station blackout conditions exist

The SBO EDG started ten minutes ago and is running at 900 RPM

There are no entries in the equipment status system that preclude performance of this task

# **INITIATING CUE**

You are requested to align the SBO diesel generator to supply the "F" transfer bus following an automatic start in accordance with 0-OP-6.4.

Page: 1 of 17

# Dominion North Anna Power Station JOB PERFORMANCE MEASURE EVALUATION

# **OPERATOR PROGRAM**

# N1671

| IAON |
|------|
|      |

Prepare the station blackout diesel generator for loading following an automatic start (0-OP-6.4).

# **TASK STANDARDS**

The SBO diesel is aligned to supply the "F" transfer bus

# **K/A REFERENCE:**

055-EA2.03 (3.9/4.7)

# **ALTERNATE PATH:**

N/A

# **TASK COMPLETION TIMES**

| Validation Time = | 10 minutes | Start Time = |
|-------------------|------------|--------------|
| Actual Time =     | minutes    | Stop Time =  |

Page: 2 of 17

# PERFORMANCE EVALUATION

| Rating                      | []SATISFACTOR | RY []UNSAT | TISFACTORY |
|-----------------------------|---------------|------------|------------|
| Candidate (Print)           |               |            |            |
| Evaluator (Print)           |               |            |            |
| Evaluator's Signatu<br>Date | re /          |            |            |
| EVALUATOR'S COMME           | <u>NTS</u>    |            |            |
|                             |               |            |            |
|                             |               |            |            |
|                             |               |            |            |

# Dominion North Anna Power Station

# JOB PERFORMANCE MEASURE (Evaluation)

# **OPERATOR PROGRAM**

N1671

#### **READ THE APPLICABLE INSTRUCTIONS TO THE CANDIDATE**

#### Instructions for In-Plant JPMs

I will explain the initial conditions, and state the task to be performed. All steps, including any required communications, shall be simulated for this JPM. Under no circumstances are you to operate any plant equipment. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

## **INITIAL CONDITIONS**

Station blackout conditions exist

The SBO EDG started ten minutes ago and is running at 900 RPM

There are no entries in the equipment status system that preclude performance of this task

# **INITIATING CUE**

You are requested to align the SBO diesel generator to supply the "F" transfer bus following an automatic start in accordance with 0-OP-6.4.

11/30/01

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# TOOLS AND EQUIPMENT

SBO Sync key

| P | ΕI | R | F | 0 | R | ٨ | ٨, | A | ١ | I | C | Ε | S | T | Ε | Р | S |
|---|----|---|---|---|---|---|----|---|---|---|---|---|---|---|---|---|---|
|   |    |   |   |   |   |   |    |   |   |   |   |   |   |   |   |   |   |

| 1 | Verify initial cond | itions are satisfied.                      | Procedure Step 5 |
|---|---------------------|--|------------------|
|   | STANDARDS           | Initial conditions are verified satisfied. |                  |
|   |                     |  | SAT[] UNSAT      |
|   | Notes/Comments      |  |                  |
|   |                     |  |                  |
|   |                     |  |                  |
|   |                     |  |                  |
| 2 | Review precaution   | ons and limitations.                       | Procedure Step 5 |
|   | STANDARDS           | Precautions and limitations are reviewed.  | · , ,            |
|   |                     |  | SAT[] UNSAT      |
|   | Notes/Comments      | ······································     | -                |

| 3 | Determine the SB0  | O diesel status.   | Procedure Step 5.1.3                    |
|---|--------------------|--|---|
|   |                    |  |   |
|   | <u>STANDARDS</u>   | EDG speed is verified approximately 900 rpm.   |   |
|   |                    |  |   |
|   |                    |  | SAT[] UNSAT[]                           |
|   |                    |  |   |
|   | Examiner's cue     | Review the JPM initial conditions.   |   |
|   |                    |  |   |
|   |                    | f candidate requests status of EDG speed, read   | the above cue.                          |
|   | Candidate proceeds | s to step 5.1.5 (step 5.1.4 is N/A)  |   |
|   |                    | •  |   |
|   |                    |  |   |
|   |                    |  |   |
|   |                    |  |   |
|   |                    |  |   |
|   |                    |  |   |
|   |                    |  |   |
| 4 | Place the SBO die  | sel fuel oil transfer pump HAND/OFF/AUTO   | Procedure Step 5.1.5                    |
| • | switch in the AUTC |  | 110000000000000000000000000000000000000 |
|   |                    |  |   |
|   | CRITICAL STE       | P  | SAT[] UNSAT[]                           |
|   |                    | The state of the s |   |
|   | STANDARDS          | Station blackout diesel generator fuel oil transfe   | er pump is placed in                    |
|   |                    | AUTO   |   |
|   |                    |  |   |
|   | Notes/Comments     |  |   |
|   |                    |  |   |
|   |                    |  |   |
|   |                    |  |   |
| , |                    |  |   |

| 5 | Verify breaker 05M            | Ti is closed.                                      | Procedure Step<br>5.1.6.a, 1 <sup>st</sup> bullet                  |
|---|-------------------------------|--|--|
|   |                               |  |  |
|   | STANDARDS                     | Breaker 05M1 is verified closed.                   | <del></del>  |
|   |                               |  | SAT[] UNSAT[]  |
|   | VERBAL-VISUAL<br>CUES         | Breaker 05M1 red light is lit and green li         | ight is NOT lit.   |
|   | Notes/Comments                |  |  |
|   |                               |  |  |
|   |                               |  |  |
|   |                               |  |  |
|   |                               |  |  |
| 6 | Verify breaker 05M            | l5 is closed.                                      | Procedure Step<br>5.1.6.a, 2 <sup>nd</sup> bullet                  |
| 6 |                               |  | Procedure Step<br>5.1.6.a, 2 <sup>nd</sup> bullet                  |
| 6 | Verify breaker 05M            | 5 is closed.<br>  Breaker 05M5 is verified closed. | 5.1.6.a, 2 <sup>nd</sup> bullet                                    |
| 6 |                               |  | Procedure Step<br>5.1.6.a, 2 <sup>nd</sup> bullet<br>SAT[] UNSAT[] |
| 6 |                               |  | 5.1.6.a, 2 <sup>nd</sup> bullet                                    |
| 6 | STANDARDS  VERBAL-VISUAL CUES | Breaker 05M5 is verified closed.                   | 5.1.6.a, 2 <sup>nd</sup> bullet                                    |
| 6 | STANDARDS  VERBAL-VISUAL      | Breaker 05M5 is verified closed.                   | 5.1.6.a, 2 <sup>nd</sup> bullet                                    |
| 6 | STANDARDS  VERBAL-VISUAL CUES | Breaker 05M5 is verified closed.                   | 5.1.6.a, 2 <sup>nd</sup> bullet                                    |

| <u> </u>             | 11-11-11-11-11-11-11-11-11-11-11-11-11-     | 5.1.6.a, 3 <sup>rd</sup> bullet                   |
|----------------------|---|---|
| STANDARDS            | Breaker 04M1-1 is verified open.            |   |
|                      |   | SAT[] UNSAT[]                                     |
| VERBAL-VISUAL CUES   | Breaker 04M1-1 green light is lit and red l | ight is NOT lit.                                  |
| Notes/Comments       |   |   |
|                      |   |   |
|                      |   |   |
|                      |   | ···   |
| 8 Verify breaker 04N | //1-2 is closed.                            | Procedure Step<br>5.1.6.a, 4 <sup>th</sup> bullet |
| STANDARDS            | Breaker 04M1-2 is verified closed.          |   |
|                      |   |   |
|                      |   | SAT[] UNSAT[]                                     |
| VERBAL-VISUAL CUES   | Breaker 04M1-2 red light is lit and green I |   |
| CUES                 | Breaker 04M1-2 red light is lit and green I |   |
|                      | Breaker 04M1-2 red light is lit and green I |   |

| 9  | Match the breaker control switch flags for those breakers that are in   |                      |
|----|---|----------------------|
|    | the correct positions.  | 5.1.6.b              |
|    |   | •                    |
|    | STANDARDS Control switch flags are matched with the indica  | tions.               |
|    | ,   |                      |
|    |   | SAT[] UNSAT[]        |
|    |   |                      |
|    | Notes/Comments: Candidate proceeds to step 5.1.8 (step 5.1.7 is N/  | A)                   |
|    | F   | • •                  |
|    |   |                      |
|    |   |                      |
|    |   |                      |
|    |   |                      |
|    |   |                      |
|    | •   |                      |
| 10 | Have the SRO determine which transfer bus will be supplied by the   | Procedure Step 5.1.8 |
|    | SBO EDG.  |                      |
|    | n de la companya de | <u> </u>             |
|    | STANDARDS F transfer bus is recorded in the procedure blan  | k.                   |
|    | ( <u> </u>  | •                    |
|    |   | [SAT[] UNSAT[]       |
|    |   |                      |
|    | Examiner's cue Review the JPM initial conditions.   |                      |
|    |   |                      |
|    | Notes/Comments: If candidate requests SRO guidance, read the abo  | We clie              |
|    | , ,   | , ve 646.            |
|    | Candidate proceeds to step 5.1.11 (steps 5.1.9 and 5.1.10 are N/A)  |                      |
|    |   |                      |
|    |   |                      |
|    |   |                      |
|    |   |                      |

| 11 | Ensure breaker 05             | oco is open.                                | Procedure Step                                |
|----|-------------------------------|---|---|
|    |                               |   | 5.1.11.a                                      |
|    | STANDARDS                     | Breaker 05L3 is verified open.              | · · · · · · · · · · · · · · · · · · ·         |
|    |                               |   |   |
|    |                               |   | SAT[] UNSAT[]                                 |
|    |                               |   |   |
|    | VERBAL-VISUAL                 | Breaker 05L3 green light is lit and red l   | light is NOT lit                              |
|    | CUES                          |   |   |
|    |                               |   |   |
|    | Notes/Comments                | ·   |   |
|    |                               |   |   |
|    |                               |   |   |
|    | ········                      |   |   |
|    |                               |   |   |
|    |                               |   |   |
| 12 | Ensure breaker 05             | L2 is open.                                 | Procedure Step                                |
| 12 | Ensure breaker 05             | L2 is open.                                 | Procedure Step<br>5.1.11.b                    |
| 12 | Ensure breaker 05             |   | Procedure Step<br>5.1.11.b                    |
| 12 |                               | L2 is open.  Breaker 05L2 is verified open. | Procedure Step<br>5.1.11.b                    |
| 12 |                               |   | Procedure Step<br>5.1.11.b<br>SAT [] UNSAT [] |
| 12 | STANDARDS                     | Breaker 05L2 is verified open.              | 5.1.11.b<br> SAT[] UNSAT[]                    |
| 12 |                               |   | 5.1.11.b<br> SAT[] UNSAT[]                    |
| 12 | STANDARDS  VERBAL-VISUAL      | Breaker 05L2 is verified open.              | 5.1.11.b<br> SAT[] UNSAT[]                    |
| 12 | STANDARDS  VERBAL-VISUAL CUES | Breaker 05L2 is verified open.              | 5.1.11.b<br> SAT[] UNSAT[]                    |
| 12 | STANDARDS  VERBAL-VISUAL      | Breaker 05L2 is verified open.              | 5.1.11.b<br> SAT[] UNSAT[]                    |
| 12 | STANDARDS  VERBAL-VISUAL CUES | Breaker 05L2 is verified open.              | 5.1.11.b<br> SAT[] UNSAT[]                    |
| 12 | STANDARDS  VERBAL-VISUAL CUES | Breaker 05L2 is verified open.              | 5.1.11.b<br> SAT[] UNSAT[]                    |

| 13 | Ensure breaker 05             | M3 is open.                                  | Procedure Step 5.1.11.c    |
|----|-------------------------------|--|----------------------------|
|    | STANDARDS                     | Breaker 05M3 is verified open.               |                            |
| •  |                               |  | SAT[] UNSAT[]              |
|    | VERBAL-VISUAL<br>CUES         | Breaker 05M3 green light is lit and red ligh | nt is NOT lit              |
|    | Notes/Comments                | · · · · · · · · · · · · · · · · · · ·        |                            |
|    |                               |  |                            |
|    |                               |  |                            |
|    |                               |  |                            |
| 14 | Ensure breaker 05             | L1 is open.                                  | Procedure Step<br>5.1.11.d |
| 14 | Ensure breaker 05             | L1 is open.  Breaker 05L1 is verified open.  |                            |
| 14 |                               | ·  |                            |
| 14 |                               | ·  | 5.1.11.d<br> SAT[] UNSAT[] |
| 14 | STANDARDS  VERBAL-VISUAL      | Breaker 05L1 is verified open.               | 5.1.11.d<br> SAT[] UNSAT[] |
| 14 | STANDARDS  VERBAL-VISUAL CUES | Breaker 05L1 is verified open.               | 5.1.11.d<br> SAT[] UNSAT[] |

|     | STANDARDS                      | Breaker 05M2 control switch is placed in CLC      | SAT[] UNSAT[                                |
|-----|--------------------------------|---|---|
|     | VERBAL-VISUAL<br>CUES          | Breaker 05M2 red light is now lit and green light | ght is NOT lit                              |
| •   | Notes/Comments                 |   |   |
|     |                                |   |   |
|     |                                |   |   |
|     |                                |   | ,   |
| 16  | Insert synch key in switch ON. | breaker 15F5 synch switch and turn synch          | Procedure Step<br>5.1.11.f                  |
| 16  |                                | ·   |   |
| 16  | switch ON.                     | ·   | 5.1.11.f<br>  SAT[] UNSAT[                  |
| 116 | switch ON.  CRITICAL STE       | Synch key is inserted in breaker 15F5 synch       | 5.1.11.f  SAT[] UNSAT switch, which is then |

| 17 | Have the unit-1 OF                  | ATC ensure breaker 15F1 is open.   | 5.1.11.g.1                     |
|----|-------------------------------------|--|--------------------------------|
|    | STANDARDS                           | Unit-1 OATC is requested to verify breaker 15                            | F1 is open                     |
|    | <u>OTT WITH THE</u>                 | Office Country Broader To  |                                |
|    |                                     |  | SAT[] UNSAT[]                  |
|    | VERBAL-VISUAL<br>CUES               | Unit-1 OATC confirms breaker 15F1 is open.                               |                                |
|    | Notes/Comments                      |  |                                |
|    |                                     |  |                                |
|    |                                     |  |                                |
|    |                                     |  |                                |
| 18 | Have the backboar and 25J11 are ope | ds operator ensure breakers 15F3, 15F4, 15H1<br>n.                       | 1 Procedure Step<br>5.1.11.g.2 |
|    | CTANDADDC                           | Packhaarda aparatar ia requested to varify br                            | okoro 1552 1554                |
|    | STANDARDS                           | Backboards operator is requested to verify bre 15H11 and 25J11 are open. | eakers 15F3, 15F4,             |
|    |                                     |  | SAT[] UNSAT[]                  |
|    | VERBAL-VISUAL<br>CUES               | Backboards operator confirms breakers 15F3, are all open.                | 15F4, 15H11 and 25J11          |
|    | (A)                                 |  |                                |
|    | Notes/Comments                      | •  |                                |
|    |                                     |  |                                |
|    |                                     |  |                                |

|    | Close breaker 15F        | ·   | 5.1.11.h                                 |
|----|--------------------------|---|--|
|    | CRITICAL STE             | P. C.           | SAT[] UNSAT[]                            |
|    | STANDARDS                | Breaker 15F5 control switch is placed in CLC        | OSE                                      |
| -  | VERBAL-VISUAL<br>CUES    | Breaker 15F5 red light is now lit and green li      | ght is NOT lit                           |
|    | Notes/Comments           |   | · · · · · · · · · · · · · · · · · · ·    |
|    |                          |   |  |
| •  |                          |   |  |
|    |                          |   |  |
| 20 | Place synch key in       | OFF.  | Procedure Step<br>5.1.11.i               |
| 20 | Place synch key in       | OFF.  Synch switch for breaker 15F5 is rotated to t | 5.1.11.i                                 |
| 20 |                          |   | 5.1.11.i                                 |
| 20 |                          |   | 5.1.11.i he OFF position  [SAT[] UNSAT[] |
| 20 | STANDARDS  VERBAL-VISUAL | Synch switch for breaker 15F5 is rotated to t       | 5.1.11.i he OFF position  [SAT[] UNSAT[] |

|   | 21          | Record the time th | e station blackout diesel generator started.  | Procedure Step 5.1.12 |
|---|-------------|--------------------|---|-----------------------|
|   |             | STANDARDS          | Start time is recorded in the procedure       |                       |
|   |             |                    |   |                       |
|   |             | •                  |   | SAT[] UNSAT[]         |
|   |             |                    | In the second second                          |                       |
|   |             | Examiner's cue     | Review the JPM initial conditions.            | <u>`</u>              |
|   |             | Netes/Comments     | f candidate requests EDG start time, read the | abovo ouo             |
|   |             | Notes/Comments:    | r candidate requests EDG start time, read the | above cue.            |
|   |             |                    |   |                       |
|   |             |                    |   |                       |
|   |             |                    |   |                       |
| - |             |                    |   |                       |
|   |             |                    |   |                       |
|   |             |                    |   |                       |
|   |             |                    |   |                       |
|   | 22          | Adjust the generat | or voltage.                                   | Procedure Step 5.1.13 |
|   |             | TOTANDA DDC        | 10towardhara is verified between 1250 s       | and 4250 yello        |
|   |             | STANDARDS          | Generator voltage is verified between 4250 a  | and 4350 volts        |
|   |             |                    |   | SAT[] UNSAT[]         |
|   |             |                    |   |                       |
|   |             | VERBAL-VISUAL CUES | Generator voltage is 4300 volts               |                       |
|   |             |                    |   |                       |
|   |             | Notes/Comments     |   |                       |
|   |             |                    |   |                       |
|   |             |                    |   |                       |
|   | <del></del> |                    |   |                       |
|   |             |                    |   |                       |

| 23 | Adjust the general | tor frequency.                          | Procedure Step 5.1.14 |
|----|--------------------|---|-----------------------|
| -  | OTANDADDO          |   |                       |
|    | STANDARDS          | Generator frequency is verified between | n 59.5 and 60.5 volts |
|    |                    |   | <u> </u>              |
|    |                    |   | SAT[] UNSAT[]         |
|    |                    |   |                       |
|    | VERBAL-VISUAL      | Generator frequency is 60 Hz            |                       |
|    | CUES               | <u> </u>                                |                       |
| •  | -                  | •                                       |                       |
|    | Notes/Comments     |   |                       |
|    |                    |   |                       |
|    |                    |   |                       |
|    |                    |   |                       |
| •  |                    | <u> </u>                                |                       |
|    |                    | ›<br>>                                  |                       |
|    |                    |   |                       |
|    |                    | SSSS END OF EVALUATION 4444             |                       |
|    |                    | >>>> END OF EVALUATION <                |                       |
|    |                    |   |                       |

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STOP TIME

# SIMULATOR, LABORATORY, IN--PLANT SETUP (If Required)

0-OP-6.4 - Initial conditions, precautions and limitations, and section 5.1.

# Dominion North Anna Power Station JOB PERFORMANCE MEASURE EVALUATION

### **OPERATOR PROGRAM**

N907

### **INITIAL CONDITIONS**

There is a fire in unit one emergency switchgear

Unit one's normal charging has been lost

Normal charging valves 1-CH-MOV-1289A and 1289B are closed

1-CH-FCV-1122 is not available

## **INITIATING CUE**

You are requested to manually align a charging flow path and establish 25 gpm charging flow in accordance with attachment 11 of 1-FCA-2.

Page: 17 of 17

## **OPERATOR PROGRAM**

# N907

| TASK |
|------|
|------|

Establish normal charging flow locally (1-FCA-2).

# TASK STANDARDS

Charging MOVs 1289A and 1289B are opened, 1-CH-289 is throttled open, 1-CH-287 is closed.

# **K/A REFERENCE:**

004-A2.07 (3.4/3.7)

### **ALTERNATE PATH:**

N/A

### TASK COMPLETION TIMES

| Validation Time = | 10 minutes | Start Time = |  |
|-------------------|------------|--------------|--|
| Actual Time =     | minutes    | Stop Time =  |  |

11/30/01

Page: 18 of 17

# **PERFORMANCE EVALUATION**

| ſ           | Rating                          | []SATISFACTORY | [ ] UNSATISFACTORY |
|-------------|---------------------------------|----------------|--------------------|
| (           | Candidate (Print)               |                |                    |
| E           | Evaluator (Print)               | ·              |                    |
|             | Evaluator's Signature /<br>Date |                |                    |
| <u>EVAL</u> | JATOR'S COMMENTS                |                |                    |
|             |                                 |                |                    |
| •           |                                 |                | •                  |
|             |                                 |                |                    |

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# North Anna Power Station

# JOB PERFORMANCE MEASURE (Evaluation)

#### **OPERATOR PROGRAM**

N907

#### READ THE APPLICABLE INSTRUCTIONS TO THE CANDIDATE

#### Instructions for In-Plant JPMs

I will explain the initial conditions, and state the task to be performed. All steps, including any required communications, shall be simulated for this JPM. Under no circumstances are you to operate any plant equipment. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

#### **INITIAL CONDITIONS**

There is a fire in unit one emergency switchgear

Unit one's normal charging has been lost

Normal charging valves 1-CH-MOV-1289A and 1289B are closed

1-CH-FCV-1122 is not available

#### **INITIATING CUE**

You are requested to manually align a charging flow path and establish 25 gpm charging flow in accordance with attachment 11 of 1-FCA-2.

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|          |       |                    |   | •                    |
|----------|-------|--------------------|---|----------------------|
|          | Apper | dix-R lantern      |   |                      |
|          | Apper | idix-R radio       |   |                      |
|          | Emerg | ency dosimeter     |   |                      |
|          |       |                    |   |                      |
| PER      | RFORM | ANCE STEPS         |   |                      |
|          | STAI  | RT TIME            |   |                      |
|          |       |                    |   | · ·                  |
|          |       |                    |   | ·.                   |
|          |       |                    |   |                      |
|          | 1     | Obtain a radio and | d emergency lantern from the Appendix-R locker. | Procedure Step 1     |
|          |       |                    |   | ;                    |
|          |       | STANDARDS          | Radio and lantern are obtained from Appendix-   | R locker.            |
|          |       |                    |   | SAT[] UNSAT[]        |
|          |       |                    |   |                      |
|          |       | Notes/Comments     | •   | •                    |
|          |       |                    |   |                      |
|          |       |                    |   |                      |
|          |       |                    |   |                      |
|          |       | 1                  |   |                      |
|          | 2     | Obtain Emergency   | y Dosimeter from HP                             | Procedure Step 2     |
|          |       | STANDARDS          | Dosimeter is obtained from the DAD check-out    | area.                |
|          |       |                    |   |                      |
|          |       |                    |   | SAT[] UNSAT[]        |
|          |       | N                  |   | 4-1-1- H 11D -66     |
|          |       | Notes/Comments:    | Emergency dosimeters are located on the wall ou | tside the HP office. |
|          |       |                    |   |                      |
| <b>.</b> |       |                    |   |                      |

**TOOLS AND EQUIPMENT** 

|   |                       | mai charging isolations are open.  | Procedure Step 4        |
|---|-----------------------|--|-------------------------|
|   |                       |  |                         |
|   | CRITICAL STE          |  | SAT[] UNSAT[            |
|   |                       |  |                         |
|   | <u>STANDARDS</u>      | 1-CH-MOV-1289A is declutched and handwhe direction until the valve is fully open. 1-CH-MOV-1289B is declutched and handwhe |                         |
|   |                       | direction until the valve is fully open.   |                         |
|   | VERBAL-VISUAL<br>CUES | 1-CH-MOV-1289A and 1289B stem indicators   | are at the top red line |
|   |                       |  |                         |
|   | Notes/Comments        |  |                         |
|   |                       |  |                         |
|   |                       | •  |                         |
|   |                       |  |                         |
|   |                       |  |                         |
|   |                       |  |                         |
|   |                       |  |                         |
|   | 1                     |  | <u> </u>                |
| 4 | Establish communi     | ications with the control room.  | Procedure Step 5a       |
|   |                       | ······································   | <del></del>             |
|   |                       |  |                         |
|   | CRITICAL STE          | P  | SAT[] UNSAT[            |
|   | CRITICAL STE          |  | SAT[] UNSAT[            |
|   | CRITICAL STE          | P OATC is contacted.   | SAT[] UNSAT[            |
|   |                       |  | SAT[] UNSAT[            |
|   | STANDARDS             |  | SAT[] UNSAT[            |
|   |                       |  | SAT[] UNSAT[            |
|   | STANDARDS             |  | SAT[] UNSAT[            |
|   | STANDARDS             |  | SAT[] UNSAT[            |

| 5 | Throttle open the the required flow. | charging flow control bypass valve to establish              | Procedure Step 5c        |
|---|--------------------------------------|--|--------------------------|
|   | CRITICAL STE                         |  | SAT[] UNSAT[]            |
|   | <u>STANDARDS</u>                     | 1-CH-289 handwheel is turned in the CCW dire throttled open. | ction until the valve is |
|   | VERBAL-VISUAL<br>CUES                | The OATC reports that charging flow is now 25                | gpm.                     |
|   | Notes/Comments                       |  |                          |
|   |                                      |  |                          |
|   |                                      |  |                          |
| 6 | Close inlet isolatio                 | on for FCV-1122.   | Procedure Step 5c        |
|   | CRITICAL STE                         | <b>:P</b>  | SAT[] UNSAT[]            |
|   | STANDARDS                            | 1-CH-287 handwheel is turned in the CW direct closed.        | ion until the valve is f |
|   | Notes/Comments                       |  |                          |
|   |                                      | W - W - W - W - W - W - W - W - W - W -                      |                          |
| , |                                      |  |                          |
| 7 | Control charging fl                  | low as directed by OATC.                                     | Procedure Step 5d        |
|   |                                      |  | SAT[] UNSAT[]            |
|   | VERBAL-VISUAL<br>CUES                | Assume another operator will continue this task              |                          |
|   | Notes/Comments                       |  |                          |
|   |                                      |  |                          |
|   |                                      |  |                          |

# SIMULATOR, LABORATORY, IN--PLANT SETUP (If Required)

Attachment 11 of 1-FCA-2.

# Dominion North Anna Power Station JOB PERFORMANCE MEASURE EVALUATION

### **OPERATOR PROGRAM**

### **INITIAL CONDITIONS**

Fire in the control room has been reported

## **INITIATING CUE**

You are requested to transfer both the unit-1 and the unit-2 channel I ex-core flux detectors to their backup power source in accordance with 0-FCA-1, attachment 11.

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#### **OPERATOR PROGRAM**

# N963

| T | 7 | ١ | S | K |
|---|---|---|---|---|
|   |   |   |   |   |

Transfer the remote monitoring ex-core neutron flux detector to its dedicated power source (<u>0-FCA-1</u>, 1-FCA-3, 1-FCA-5).

## **TASK STANDARDS**

The unit 1 and unit 2 channel I ex-core flux detectors are on their backup power sources

## **K/A REFERENCE:**

067-AA2.16 (3.3/4.0)

### **ALTERNATE PATH:**

N/A

## **TASK COMPLETION TIMES**

| Validation Time = | 15 minutes | Start Time = |  |
|-------------------|------------|--------------|--|
| Actual Time =     | minutes    | Stop Time =  |  |

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11/30/01

# PERFORMANCE EVALUATION

| Ratin         | g                  | []SATISFACTORY | [] UNSATISFACTORY |      |
|---------------|--------------------|----------------|-------------------|------|
| Cand          | idate (Print)      |                |                   |      |
| Evalu         | ator (Print)       |                | • · · · · ·       | <br> |
| Evalu<br>Date | ator's Signature / |                |                   |      |
| EVALUATO      | DR'S COMMENTS      |                |                   |      |
|               |                    |                |                   | ٠    |
|               |                    |                |                   |      |
|               |                    |                |                   |      |

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# Dominion North Anna Power Station

# JOB PERFORMANCE MEASURE (Evaluation)

#### **OPERATOR PROGRAM**

N963

#### READ THE APPLICABLE INSTRUCTIONS TO THE CANDIDATE

#### Instructions for In-Plant JPMs

I will explain the initial conditions, and state the task to be performed. All steps, including any required communications, shall be simulated for this JPM. Under no circumstances are you to operate any plant equipment. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

### **INITIAL CONDITIONS-**

Fire in the control room has been reported

#### **INITIATING CUE**

You are requested to transfer both the unit-1 and the unit-2 channel I ex-core flux detectors to their backup power source in accordance with 0-FCA-1, attachment 11.

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# **TOOLS AND EQUIPMENT**

Administrative lock key Unit-1 remote flux monitor power source transfer switch key Unit-2 remote flux monitor power source transfer switch key

## **PERFORMANCE STEPS**

| STA | RT TIME                | ·   |                         |
|-----|------------------------|---|-------------------------|
|     |                        |   |                         |
| 1   | Obtain keys from App   | endix R key locker or admin key locker.                 | Procedure Step 1        |
|     |                        | dmin key, unit-1 and unit-2 remote flux monito otained. | r power source keys are |
|     |                        |   | [SAT[] UNSAT[]          |
|     | Notes/Comments         |   |                         |
|     |                        |   |                         |
|     |                        |   |                         |
| 2   | Place disconnect swite | ch on 2-EP-CB-001 to OFF.                               | Procedure Step 2a       |
|     | CRITICAL STEP          |   | SAT[] UNSAT[]           |
|     | STANDARDS 2-           | EP-CB-001 disconnect switch is placed in OF             | F                       |
|     | Notes/Comments         |   | · .                     |
|     |                        |   |                         |
|     |                        |   |                         |

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| 3    | Verily inverter 2-1 A | C output breaker is closed.                       | Procedure Step 2b |
|------|-----------------------|---|-------------------|
|      |                       |   |                   |
|      | STANDARDS             | Inverter 2-I AC output breaker is verified closed |                   |
|      |                       |   | ·                 |
|      |                       |   | SAT[] UNSAT[]     |
|      |                       |   |                   |
|      | VERBAL-VISUAL         | 2-I inverter output breaker handle is up.         |                   |
|      | CUES                  |   |                   |
|      | •                     |   | ·                 |
|      | Notes/Comments        |   |                   |
|      |                       |   |                   |
|      |                       | •   |                   |
| <br> |                       |   |                   |
|      |                       |   |                   |
|      |                       |   | •                 |
|      |                       |   |                   |
|      |                       |   | •                 |
| 4    |                       | ux monitor power supply transfer switch 1-XFR-    | Procedure Step 2c |
|      | SW-202 to the BAC     | KUP position.                                     |                   |
|      |                       |   |                   |
|      | CRITICAL STEP         | 7일 사람들은 경기 등을 하는 것 같아.                            | SAT[] UNSAT[]     |
|      |                       |   |                   |
| <br> | STANDARDS             | Transfer switch 1-XFR-SW-202 in placed in BA      | CKUP              |
|      |                       |   |                   |
|      | Notes/Comments        |   |                   |
|      |                       |   |                   |
|      |                       |   |                   |
| <br> |                       |   |                   |
|      |                       |   |                   |
|      |                       |   |                   |
|      |                       |   |                   |
|      |                       | ·   |                   |
| 5    | Place disconnect sv   | witch on 1-EP-CB-001 to OFF.                      | Procedure Step 3a |
|      |                       |   |                   |
|      | CRITICAL STEP         |   | SAT[] UNSAT[]     |
|      |                       |   |                   |
|      | STANDARDS             | 1-EP-CB-001 disconnect switch is placed in OF     | F                 |
|      |                       | <u> </u>  |                   |
|      | Notes/Comments        |   |                   |
|      | 10too, commonto       |   |                   |
|      |                       |   |                   |
|      |                       |   |                   |
|      |                       |   |                   |

| 6   Verify inverter 1-I                                      | AC output breaker is closed.  | Procedure Step 3b         |
|--|---|---------------------------|
| STANDARDS  | Inverter 1-I AC output breaker is verified closed   | <u></u>                   |
| OTANDANDO  | THIT STOR TO THE OUTPUT BIOCHOR TO VOTINGE GIOSON   | <b>ν</b>                  |
|  |   | SAT[] UNSAT[]             |
| VERBAL-VISUAL CUES   | 1-I inverter AC output breaker handle is up.  |                           |
| Notes/Comments   |   |                           |
| Notes/Comments   |   |                           |
|  | ·   | •                         |
|  |   | . 1.                      |
|  |   |                           |
|  |   |                           |
| 7 Place the ex-core<br>SW-202 to the BA                      | flux monitor power supply transfer switch 2-XFR-<br>CKUP position.  | Procedure Step 3c         |
| CRITICAL STE   | <b>EP</b>   | SAT[] UNSAT[]             |
|  |   | 014115                    |
|  | - LTransfer switch 2-XFR-SW-202 in placed in BA   | ACKUP                     |
| STANDARDS  | Transfer switch 2-XFR-SW-202 in placed in BA  |                           |
| STANDARDS  Notes/Comments                                    | Transier switch 2 At N GW 202 in placed in 57   |                           |
|  | Transier switch 2 At IX OV 202 in placed in 57  |                           |
|  | Transier switch 2 At IX OV 202 in placed in 57  |                           |
|  | Transier switch 2 At 14 GVV 202 in placed in 57   |                           |
|  | Transier switch 2 At 14 GV 202 in placed in 57  |                           |
|  | Transier switch 2 At 14 GV 202 in placed in 57  |                           |
| Notes/Comments   | key for Fuel Building, Remote Monitor and Aux   | Procedure Step 4          |
| Notes/Comments  Obtain vital area k                          |   | Procedure Step 4          |
| Notes/Comments  8 Obtain vital area k Monitor.               | key for Fuel Building, Remote Monitor and Aux  Assume another operator will complete this att   | Procedure Step 4 achment. |
| Notes/Comments  8 Obtain vital area k Monitor.               | xey for Fuel Building, Remote Monitor and Aux   | Procedure Step 4 achment. |
| Notes/Comments  Obtain vital area k Monitor.  Examiner's cue | Rey for Fuel Building, Remote Monitor and Aux  Assume another operator will complete this att  Show me where the source-range amplifier sel | Procedure Step 4 achment. |
| Notes/Comments  8 Obtain vital area k Monitor.               | Rey for Fuel Building, Remote Monitor and Aux  Assume another operator will complete this att  Show me where the source-range amplifier sel | Procedure Step 4 achment. |
| Notes/Comments  Obtain vital area k Monitor.  Examiner's cue | Rey for Fuel Building, Remote Monitor and Aux  Assume another operator will complete this att  Show me where the source-range amplifier sel | Procedure Step 4 achment. |
| Notes/Comments  Obtain vital area k Monitor.  Examiner's cue | Rey for Fuel Building, Remote Monitor and Aux  Assume another operator will complete this att  Show me where the source-range amplifier sel | Procedure Step 4 achment. |
| Notes/Comments  Obtain vital area k Monitor.  Examiner's cue | Assume another operator will complete this att Show me where the source-range amplifier sel (Admin-A.1 JPM R714). NOTE: Applicant is all    | Procedure Step 4 achment. |
| Notes/Comments  Obtain vital area k Monitor.  Examiner's cue | Rey for Fuel Building, Remote Monitor and Aux  Assume another operator will complete this att  Show me where the source-range amplifier sel | Procedure Step 4 achment. |
| Notes/Comments  Obtain vital area k Monitor.  Examiner's cue | Assume another operator will complete this att Show me where the source-range amplifier sel (Admin-A.1 JPM R714). NOTE: Applicant is all    | Procedure Step 4 achment. |

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## **OPERATOR PROGRAM**

# **INITIAL CONDITIONS**

Fire in the control room has been reported

## **INITIATING CUE**

You are requested to transfer both the unit-1 and the unit-2 channel I ex-core flux detectors to their backup power source in accordance with 0-FCA-1, attachment 11.

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## **OPERATOR PROGRAM**

# N963

Transfer the remote monitoring ex-core neutron flux detector to its dedicated power source (<u>0-FCA-1</u>, 1-FCA-2, 1-FCA-3, 1-FCA-5).

### TASK STANDARDS

The unit 1 and unit 2 channel I ex-core flux detectors are on their backup power sources

## **K/A REFERENCE:**

067-AA2.16 (3.3/4.0)

### **ALTERNATE PATH:**

N/A

### TASK COMPLETION TIMES

| Validation Time = | 15 minutes | Start Time = |  |
|-------------------|------------|--------------|--|
| Actual Time =     | minutes    | Stop Time =  |  |

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# **PERFORMANCE EVALUATION**

| R     | ating                         | []SATISFACTORY | [ ]UNSATISFACTORY |   |
|-------|-------------------------------|----------------|-------------------|---|
| С     | andidate (Print)              | ·.             |                   |   |
| E     | valuator (Print)              |                |                   |   |
|       | valuator's Signature /<br>ate |                |                   |   |
| EVALU | ATOR'S COMMENTS               |                |                   |   |
|       |                               |                |                   |   |
|       | • •                           | _              |                   |   |
|       |                               |                |                   | · |

# Dominion North Anna Power Station

# JOB PERFORMANCE MEASURE (Evaluation)

#### OPERATOR PROGRAM

N963

#### READ THE APPLICABLE INSTRUCTIONS TO THE CANDIDATE

#### **Instructions for In-Plant JPMs**

I will explain the initial conditions, and state the task to be performed. All steps, including any required communications, shall be simulated for this JPM. Under no circumstances are you to operate any plant equipment. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

### **INITIAL CONDITIONS-**

Fire in the control room has been reported

### **INITIATING CUE**

You are requested to transfer both the unit-1 and the unit-2 channel I ex-core flux detectors to their backup power source in accordance with 0-FCA-1, attachment 11.

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# TOOLS AND EQUIPMENT

Administrative lock key Unit-1 remote flux monitor power source transfer switch key Unit-2 remote flux monitor power source transfer switch key

# **PERFORMANCE STEPS**

| STA      | ART TIME         |   |                          |
|----------|------------------|---|--------------------------|
| 1        | Obtain keys from | Appendix R key locker or admin key locker.                    | Procedure Step 1         |
|          | <u>STANDARDS</u> | Admin key, unit-1 and unit-2 remote flux monitoring obtained. | or power source keys are |
| ·        |                  |   | SAT[] UNSAT[]            |
|          | Notes/Comments   |   |                          |
| <u> </u> |                  |   |                          |
|          |                  |   |                          |
| 2        | Place disconnect | switch on 2-EP-CB-001 to OFF.                                 | Procedure Step 2a        |
|          | CRITICAL ST      | <b>EP</b>   | SAT[] UNSAT[]            |
|          | STANDARDS        | 2-EP-CB-001 disconnect switch is placed in O                  | FF                       |
|          | Notes/Comments   |   |                          |
|          |                  |   |                          |

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| 3 | Verify inverter 2-1 AC output breaker is closed.                   | Procedure Step 2b |
|---|--|-------------------|
|   |  |                   |
|   | STANDARDS Inverter 2-I AC output breaker is verified close         | d                 |
|   |  | SAT[] UNSAT[]     |
|   |  | SATE UNSATE       |
|   | VERBAL-VISUAL 2-I inverter output breaker handle is up.            |                   |
|   | CUES 2 THYONG SURPLE STORIES TO SEPTEMBER 1                        |                   |
|   |  |                   |
|   | Notes/Comments   |                   |
|   |  |                   |
|   |  |                   |
|   |  |                   |
|   |  |                   |
|   |  |                   |
|   |  | •                 |
| 4 | Place the ex-core flux monitor power supply transfer switch 1-XFR- | Procedure Step 2c |
|   | SW-202 to the BACKUP position.                                     | <u>'</u>          |
|   |  |                   |
|   | CRITICAL STEP  | SAT[] UNSAT[]     |
|   |  |                   |
|   | STANDARDS Transfer switch 1-XFR-SW-202 in placed in BA             | ACKUP             |
|   | ·  |                   |
|   | Notes/Comments   |                   |
|   |  |                   |
|   |  |                   |
|   |  |                   |
|   |  |                   |
|   |  | •                 |
|   |  |                   |
| 5 | Place disconnect switch on 1-EP-CB-001 to OFF.                     | Procedure Step 3a |
|   |  |                   |
|   | CRITICAL STEP  | SAT[] UNSAT[]     |
|   |  |                   |
|   | STANDARDS 1-EP-CB-001 disconnect switch is placed in O             | <u> </u>          |
|   |  |                   |
|   | Notes/Comments   |                   |
|   | Notes Comments   |                   |
|   | Thomas Commence  |                   |
|   | Thotas Comments  |                   |

| 6   | Verity inverter 1-1 A                  | AC output breaker is closed.  | Procedure Step 3b                     |
|-----|--|---|---------------------------------------|
|     | CTANDADDO                              | Invertor 1 LAC output breeker is verified alocaed   |                                       |
|     | STANDARDS                              | Inverter 1-I AC output breaker is verified closed   | <u>•</u>                              |
|     |  |   | SAT[] UNSAT[]                         |
|     | VERBAL-VISUAL<br>CUES                  | 1-I inverter AC output breaker handle is up.  |                                       |
|     | Notes/Comments                         |   |                                       |
|     | , total significant                    |   |                                       |
|     |  |   |                                       |
|     |  |   |                                       |
| 7   | Place the ex-core to SW-202 to the BAG | flux monitor power supply transfer switch 2-XFR-CKUP position.                              | Procedure Step 3c                     |
|     | CRITICAL STE                           | P   | SAT[] UNSAT[]                         |
| •   | STANDARDS                              | Transfer switch 2-XFR-SW-202 in placed in BA  | CKUP                                  |
|     | Notes/Comments                         |   |                                       |
|     |  |   |                                       |
|     |  |   |                                       |
| 8   | Obtain vital area ko<br>Monitor.       | ey for Fuel Building, Remote Monitor and Aux  | Procedure Step 4                      |
|     | Examiner's cue                         | Assume another operator will complete this atta   | achment.                              |
|     |  |   |                                       |
|     |  | Show me where the source-range amplifier sele (Admin-A.1 JPM R714). NOTE: Applicant is allo |                                       |
|     | Notes/Comments                         |   | <u> </u>                              |
|     |  |   |                                       |
|     |  |   |                                       |
|     |  | >>>> END OF EVALUATION <<<<   | · · · · · · · · · · · · · · · · · · · |
| STO | P TIME                                 |   |                                       |

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#### **OPERATOR PROGRAM**

#### **INITIAL CONDITIONS**

Unit startup from mode 5 to mode 4 is in progress

Reactor coolant pumps "A" and "C" are in operation

Hot-leg and cold-leg loop "B" stop valves are open

Conditions have been established for starting the "B" reactor coolant pump

Reactor Coolant System pressure is 350 psig

Reactor Coolant System temperature is 190°F

"B" station service bus is not being supplied from reserve station service

Pressurizer bubble is being used for Reactor Coolant System pressure control

Reactor coolant filters and a mixed-bed ion exchanger are in service

1-OP-5.2 has been completed through verifying RCP #1 seal delta-P is in spec

## **INITIATING CUE**

You are requested to start the "B" reactor coolant pump in accordance with 1-OP-5.2.

# **OPERATOR PROGRAM**

# R164 (MOD)

| TASK        |   |
|-------------|---|
| S           | Start a reactor coolant pump (1-OP-5.2).  |
| <u>TASK</u> | STANDARDS   |
| "[          | B" RCP was started, then tripped when vibrations exceeded the limit                             |
| K/A R       | EFERENCE:   |
| 0           | 003-A4.01 (3.3/3.2)   |
| ALTE        | RNATE PATH:   |
| F           | Following RCP start, vibrations increase above the value requiring the operator to trip the RCP |
| TASK        | COMPLETION TIMES  |
|             | Validation Time = 10 minutes Start Time = Actual Time = minutes Stop Time =                     |

# PERFORMANCE EVALUATION

| Rating                          | []SATISFACTORY | [ ] UNSATISF | ACTORY |   |
|---------------------------------|----------------|--------------|--------|---|
| Candidate (Print)               |                |              |        |   |
| Evaluator (Print)               |                |              |        |   |
| Evaluator's Signature /<br>Date |                |              |        |   |
| EVALUATOR'S COMMENTS            |                |              | ·      | _ |
|                                 |                |              |        |   |
|                                 |                |              |        |   |
|                                 |                |              |        |   |

# Dominion North Anna Power Station

# JOB PERFORMANCE MEASURE (Evaluation)

#### OPERATOR PROGRAM

#### R164

### **READ THE APPLICABLE INSTRUCTIONS TO THE CANDIDATE**

#### Instructions for Simulator JPMs

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

#### **INITIAL CONDITIONS**

Unit startup from mode 5 to mode 4 is in progress

Reactor coolant pumps "A" and "C" are in operation

Hot-leg and cold-leg loop "B" stop valves are open

Conditions have been established for starting the "B" reactor coolant pump

Reactor Coolant System pressure is 350 psig

Reactor Coolant System temperature is 190°F

"B" station service bus is not being supplied from reserve station service

Pressurizer bubble is being used for Reactor Coolant System pressure control

Reactor coolant filters and a mixed-bed ion exchanger are in service

1-OP-5.2 has been completed through verifying RCP #1 seal delta-P is in spec

#### **INITIATING CUE**

You are requested to start the "B" reactor coolant pump in accordance with 1-OP-5.2.

# **TOOLS AND EQUIPMENT**

None

| PER | FO | RMA | NCE | STE | PS |
|-----|----|-----|-----|-----|----|
|-----|----|-----|-----|-----|----|

| STA  | RT TIME               |   |                       |
|------|-----------------------|---|-----------------------|
|      |                       |   |                       |
| 1    | Start the "B" reacto  | or coolant pump bearing lift pump 1-RC-P-1B1.               | Procedure Step 5.2.10 |
| ٠    | CRITICAL STE          | P   | SAT[] UNSAT[]         |
|      | STANDARDS             | Control switch for 1-RC-P-1B1 is placed in STA              | RT                    |
|      | Dead simulator cue    | "B" RCP bearing lift pump red light is lit and gre          | en light is NOT lit.  |
|      | Notes/Comments        |   |                       |
| <br> |                       |   |                       |
|      |                       |   |                       |
|      |                       |   |                       |
| 2    | Verify that the "B" i | reactor coolant pump oil pressure start<br>ng light is lit. | Procedure Step 5.2.11 |
|      | <u>STANDARDS</u>      | Oil pressure start permissive white indicating lig          | ht is verified lit.   |
|      | •                     |   | SAT[] UNSAT[]         |
|      | Dead simulator cue    | Oil pressure start permissive indicating light is I         | it                    |
|      | Notes/Comments        |   | <u> </u>              |
|      |                       |   |                       |
| <br> |                       |   |                       |

| STANDARDS   RCP annunciators are verified NOT lit.   | 3        | Verify that the "B" | reactor coolant pump annunciators are not lit. | Procedure Step 5.2.12 |
|--|----------|---------------------|--|-----------------------|
| Dead simulator cue   Annunciators C-C2, C-E2, C-F2, C-G2, and C-H2 are NOT lit cue   |          | STANDARDS           | RCP annunciators are verified NOT lit.         |                       |
| Notes/Comments: The next procedure step is N/A.  Ensure that the Chemical and Volume Control System parameters are within specifications.  STANDARDS   CVCS parameters are verified within specifications.  SAT [] UNSAT []  Dead simulator   Seal injection flow rate for "B" RCP is 8 gpm VCT temperature is 100°F VCT pressure is 38 psig |          |                     |  | SAT[] UNSAT[]         |
| Ensure that the Chemical and Volume Control System parameters are within specifications.    STANDARDS   CVCS parameters are verified within specifications.    SAT [] UNSAT []   |          |                     | Annunciators C-C2, C-E2, C-F2, C-G2, and C-    | H2 are NOT lit        |
| are within specifications.  STANDARDS  CVCS parameters are verified within specifications.  SAT [] UNSAT []  Dead simulator cue  VCT temperature is 100°F  VCT pressure is 38 psig   |          | Notes/Comments:     | The next procedure step is N/A.                |                       |
| STANDARDS   CVCS parameters are verified within specifications.  | <u> </u> |                     |  |                       |
| STANDARDS   CVCS parameters are verified within specifications.  |          |                     |  |                       |
| STANDARDS   CVCS parameters are verified within specifications.    SAT [] UNSAT []   | 4        |                     |  | Procedure Step 5.2.14 |
| Dead simulator  Cue  Seal injection flow rate for "B" RCP is 8 gpm  VCT temperature is 100°F  VCT pressure is 38 psig  | L        | are within specific | ations.  |                       |
| Dead simulator   Seal injection flow rate for "B" RCP is 8 gpm   VCT temperature is 100°F   VCT pressure is 38 psig  |          | STANDARDS           | CVCS parameters are verified within specificat | ions.                 |
| Cue VCT temperature is 100°F VCT pressure is 38 psig   |          |                     |  | SAT[] UNSAT[]         |
| Notes/Comments   |          | 1.7                 |  |                       |
| Notes/Comments   |          | cue                 |  |                       |
|  |          |                     |  |                       |
|  |          |                     |  |                       |

| 5 | within specification | omponent Cooling Water System parameters are     | Procedure Step 5.2.15 |
|---|----------------------|--|-----------------------|
| • |                      |  |                       |
| • | STANDARDS            | CCW parameters are verified within specification | ns.                   |
|   | •                    |  | SAT[] UNSAT[]         |
|   |                      |  | extiti etteriti       |
|   | Dead simulator       | Upper oil cooler flow is 160 gpm                 |                       |
|   | <u>cue</u>           | Stator cooler flow is 120 gpm                    |                       |
|   |                      | Lower oil cooler flow is 7 gpm                   |                       |
|   |                      | Thermal barrier flow is 50 gpm                   |                       |
|   |                      | CCHX outlet temperature is 100°F                 | race at               |
|   | Notes/Comments       |  |                       |
|   | Notes/Comments       |  |                       |
|   |                      |  |                       |
|   |                      |  |                       |
|   |                      |  |                       |
|   |                      |  |                       |
|   |                      | •  |                       |
| 6 | Ensure that RCS t    | pressure is above the required value.            | Procedure Step 5.2.16 |
|   |                      |  |                       |
|   | STANDARDS            | RCS pressure is verified above 280 psig.         |                       |
|   | -                    |  |                       |
|   |                      |  | SAT[] UNSAT[]         |
|   | Destablished         | IDOS io 250 maio                                 |                       |
|   | Dead simulator       | RCS pressure is 350 psig.                        |                       |
|   | cue                  |  |                       |
|   | Notes/Comments       |  |                       |
|   | Notes/Comments       |  | 4                     |
|   |                      | •  | •                     |
|   |                      |  |                       |
|   |                      |  |                       |

| 7    | Verify that the bea             | aring lift pump has operated for at least two        | Procedure Step 5.2.17 |
|------|---------------------------------|--|-----------------------|
|      | STANDARDS                       | RCP "B" bearing lift pump is verified running at     | least two minutes.    |
|      | ,                               |  | SAT[] UNSAT[]         |
|      | Examiner's cue                  | Assume two minutes have passed since the be started. | earing lift pump was  |
|      | Notes/Comments:                 | The next procedure step is N/A.                      |                       |
|      |                                 |  |                       |
|      |                                 |  |                       |
| 8    | Ensure that all per be started. | rsonnel are clear of the reactor coolant pump to     | Procedure Step 5.2.19 |
|      | STANDARDS                       | RCP start is announced on the plant paging sy        | stem.                 |
|      |                                 |  | SAT[] UNSAT[]         |
|      | Notes/Comments                  |  |                       |
|      |                                 |  |                       |
| <br> |                                 |  |                       |

| 9  | Start the "B" react | or coolant pump 1-RC-P-1B.   | Procedure Step 5.2.20         |
|----|---------------------|--|-------------------------------|
|    | CRITICAL STE        | P  | SAT[] UNSAT[]                 |
|    | STANDARDS           | Control switch for 1-RC-P-1B is place At least two minutes have elapsed si |                               |
|    |                     | RCP was started.   |                               |
|    | Dead simulator cue  | "B" RCP motor ammeter pegged high  | n, then decreased to 920.     |
|    | Notes/Comments      |  |                               |
|    |                     |  |                               |
| •  |                     |  |                               |
|    |                     |  |                               |
| 10 | Verify that reactor | coolant flow is increasing.  | Procedure Step 5.2.2          |
|    | STANDARDS           | Flow in "B" reactor coolant loop is ver                                    | rified increasing.            |
|    |                     |  | SAT[] UNSAT[]                 |
|    | Dead simulator cue  | Flow is increasing on all "B" loop read                                    | ctor coolant flow indicators  |
|    |                     | 20 seconds after RCP is started, annun<br>ALERT/DANGER, will illuminate.   | ciator A-E6, RCP 1B VIBRATION |
|    |                     |  |                               |

| 11 | Verify that annund<br>ALERT/DANGER | ciator 1A-E6, RCP 1B VIBRATION<br>, is not lit. | Procedure Step 5.2.22 |
|----|------------------------------------|---|-----------------------|
|    | <u>STANDARDS</u>                   | Annunciator is observed lit.                    |                       |
|    |                                    |   | SAT[] UNSAT[]         |
|    | Dead simulator cue                 | Annunciator A-E6 is illuminated.                |                       |
|    | Notes/Comments:                    | Transitions to annunciator response for A-E6    |                       |
|    |                                    |   |                       |
| 2  | Check seismic vi                   | bration less than 5 mils.                       | AR procedure step 2.1 |
|    | STANDARDS                          | Seismic vibration indication for "B" is observ  | red.                  |
|    |                                    |   | SAT[] UNSAT[]         |
|    | Dead simulator cue                 | "B" RCP seismic vibration is 3 mils.            |                       |
|    | Notes/Comments                     |   | ·                     |
|    |                                    |   | · ·                   |
|    |                                    |   |                       |
| 3  | Check proximity                    | vibration less than 20 mils.                    | AR procedure step 2.2 |
|    | STANDARDS                          | Proximity vibration indication for "B" is obser | rved.                 |
|    |                                    |   | SAT[] UNSAT[]         |
|    | Dead simulator cue                 | "B" RCP proximity vibration is 25 mils.         |                       |
|    | Notes/Comments                     |   |                       |
|    |                                    |   |                       |

| Stop "B" RCP.      | •   | AR procedure step 2 (RNO) |
|--------------------|---|---------------------------|
| CRITICAL STI       | <b>EP</b>   | SAT[] UNSAT[]             |
| STANDARDS          | Control switch for 1-RC-P-1B is placed in S         | ЭТОР                      |
| Dead simulator cue | "B" RCP motor ammeter has decreased to              | zero.                     |
| Examiner cue       | Assume another operator will continue with actions. | the annunciator response  |

### >>>> END OF EVALUATION <

| STOP TIME |  |
|-----------|--|
| SIUPINIE  |  |

# SIMULATOR, LABORATORY, IN--PLANT SETUP (If Required)

#### SIMULATOR SETUP

## JOB PERFORMANCE MEASURE R164

#### **TASK**

Start a reactor coolant pump (1-OP-5.2).

#### **CHECKLIST**

|   | Recall the IC for mode 5, 350 psig, 180°F, bubble in the pressurizer                                     |
|---|--|
|   | Enter the following initial conditions   |
| • | "A" and "C" reactor coolant pumps are in operation   |
| • | "B" Reactor Coolant System loop stop valves are open   |
| • | Conditions have been established to start "B" reactor coolant pump                                       |
| • | "B" station service is not being supplied from the reserve station service transformer                   |
| • | Place RCPs on digital trend  |
|   | Enter malfunction RC3902, delay time = 5, severity value = 75, trigger = 1.                              |
|   | Sign-off a copy of 1-OP-5.2, section 5.2 for starting "B" RCP through verifying #1 seal delta-P in spec. |
|   | Implement the malfunction 20 seconds after the "B" RCP is started.                                       |
|   |  |

# Dominion North Anna Power Station JOB PERFORMANCE MEASURE EVALUATION

#### **OPERATOR PROGRAM**

#### **INITIAL CONDITIONS**

1-ECA-0.0 has directed a transition to 1-ECA-0.2

Power to the "H" emergency bus has been restored

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11/30/01

Seal injection and seal cooling have been isolated in accordance with 1-ECA-0.0

#### **INITIATING CUE**

You are requested to establish safety injection flow in accordance with 1-ECA-0.2, "Loss of All AC Power Recovery With SI Required." Continue to the point of checking intact steam generator levels.

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# Dominion North Anna Power Station JOB PERFORMANCE MEASURE EVALUATION

#### **OPERATOR PROGRAM**

### **R208**

| IASN |
|------|
|------|

| Establish safety injection flow during a loss of all AC pov | wer recovery with safety inject | ion required (1- |
|---|---------------------------------|------------------|
| ECA-0.2).   |                                 |                  |

#### **TASK STANDARDS**

Safety Injection flow has been established via cold leg injection flowpath

#### **K/A REFERENCE:**

006-A4.08 (4.2/4.3)

#### **ALTERNATE PATH:**

N/A

#### TASK COMPLETION TIMES

| Validation Time ≕ | 8 minutes | Start Time = |
|-------------------|-----------|--------------|
| Actual Time =     | minutes   | Stop Time =  |

## PERFORMANCE EVALUATION

|     | Rating                          | []SATISFACTORY | [ ] UNSATISFACTORY |
|-----|---------------------------------|----------------|--------------------|
|     | Candidate (Print)               |                |                    |
|     | Evaluator (Print)               |                |                    |
|     | Evaluator's Signature /<br>Date |                |                    |
| EVA | LUATOR'S COMMENTS               |                |                    |
|     |                                 |                |                    |
|     |                                 |                |                    |

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## Dominion North Anna Power Station

## JOB PERFORMANCE MEASURE (Evaluation)

#### **OPERATOR PROGRAM**

R208

#### READ THE APPLICABLE INSTRUCTIONS TO THE CANDIDATE

#### Instructions for Simulator JPMs

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

#### **INITIAL CONDITIONS**

1-ECA-0.0 has directed a transition to 1-ECA-0.2

Power to the "H" emergency bus has been restored

Seal injection and seal cooling have been isolated in accordance with 1-ECA-0.0

#### **INITIATING CUE**

You are requested to establish safety injection flow in accordance with 1-ECA-0.2, "Loss of All AC Power Recovery With SI Required." Continue to the point of checking intact steam generator levels.

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## TOOLS AND EQUIPMENT

None

| <b>PERFORMANCE</b> | <b>STEPS</b> |
|--------------------|--------------|
|--------------------|--------------|

| STA | RT TIME              |   |                  |
|-----|----------------------|---|------------------|
|     |                      |   |                  |
| 1   | Verify that both tra | ains of safety injection are reset.               | Procedure Step 1 |
|     | STANDARDS            | Permissive status light P-H1 is verified NOT lit. |                  |
|     |                      |   | SAT[] UNSAT[     |
|     | Dead simulator cue   | Permissive status light P-H1 is NOT lit.          |                  |
|     | Notes/Comments       |   |                  |
|     |                      |   |                  |
|     |                      |   |                  |
|     |                      |   |                  |
| 2   | Check RWST leve      | el greater than 23%.                              | Procedure Step 2 |
|     | <u>STANDARDS</u>     | RWST level is verified >23%.                      |                  |
|     |                      |   | SAT[] UNSAT[     |
|     | Dead simulator cue   | RWST level is 97%.                                |                  |
|     | No. 10               |   |                  |
|     | Notes/Comments       |   |                  |
|     |                      |   |                  |

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| 3 | Open charging pu   | ump suction from the RWST.              | Procedure Step 3a         |
|---|--------------------|---|---------------------------|
|   | CRITICAL ST        | ΞP                                      | SAT[] UNSAT[]             |
|   | STANDARDS          | 1-CH-MOV-1115D control switch is place  | ed in the OPEN position.  |
|   | Dead simulator cue | 1-CH-MOV-1115D red light is lit and gre | en light is NOT lit.      |
|   | Notes/Comments     | · · · · · · · · · · · · · · · · · · ·   |                           |
|   |                    |   |                           |
| 4 | Close charging p   | ump suction from the VCT.               | Procedure Step 3b         |
|   | CRITICAL ST        | ΞP                                      | SAT[] UNSAT[]             |
|   | STANDARDS          | 1-CH-MOV-1115C control switch is plac   | ed in the CLOSE position. |
|   | Dead simulator cue | 1-CH-MOV-1115C green light is lit and r | ed light is NOT lit.      |
|   | Notes/Comments     |   |                           |
|   |                    |   |                           |
| 5 | Close normal cha   | arging isolation valve.                 | Procedure Step 3c         |
|   | CRITICAL ST        | <b>EP</b>                               | SAT[] UNSAT[]             |
|   | STANDARDS          | 1-CH-MOV-1289A control switch is plac   | ed in the CLOSE position. |
|   | Dead simulator cue | 1-CH-MOV-1289A green light is lit and r | ed light is NOT lit.      |
|   | Notes/Comments     |   |                           |
|   |                    |   |                           |

| CRITICAL STEP  | р | Close the Bit reci                      | rc valves.  | Frocedure Step 3d           |
|--|---|---|---|-----------------------------|
| Dead simulator cue   1-Si-TV-1884A, 1884B, and 1884C green lights are all lit and red light are NOT lit.   |   | CRITICAL STE                            | P   | SAT[] UNSAT[]               |
| Are NOT lit.   |   | STANDARDS                               |   | ushbuttons are              |
| 7 Open BIT outlet valve. Procedure Step 3e  CRITICAL STEP SAT [] UNSAT []  STANDARDS OPEN pushbutton for 1-SI-MOV-1867C is depressed.  Dead simulator cue 1-SI-MOV-1867C red light is lit and green light is NOT lit.  Notes/Comments: Procedure Step 3f  CRITICAL STEP SAT [] UNSAT []  STANDARDS OPEN pushbutton for 1-SI-MOV-1867A is depressed.  Dead simulator cue 1-SI-MOV-1867A red light is lit and green light is NOT lit.  |   |   |   | ts are all lit and red ligh |
| SAT [] UNSAT []  |   | Notes/Comments:                         | Closing either TV-1884A or 1884C is sufficient to | o satisfy the critical step |
| SAT [] UNSAT []  |   |   |   |                             |
| STANDARDS   OPEN pushbutton for 1-SI-MOV-1867C is depressed.   Dead simulator cue   1-SI-MOV-1867C red light is lit and green light is NOT lit.  |   |   |   |                             |
| SAT [] UNSAT []  |   |   |   |                             |
| STANDARDS   OPEN pushbutton for 1-SI-MOV-1867C is depressed.   Dead simulator cue   1-SI-MOV-1867C red light is lit and green light is NOT lit.  | 7 | Open BIT outlet v                       | alve.   |                             |
| Dead simulator cue   1-SI-MOV-1867C red light is lit and green light is NOT lit.   |   | CRITICAL ST                             | <b>P</b>  | SAT[] UNSAT[]               |
| Notes/Comments:    Procedure Step 3f   |   | STANDARDS                               | OPEN pushbutton for 1-SI-MOV-1867C is dep         | ressed.                     |
| Open BIT inlet valve.   Procedure Step 3f  |   | , — — — — — — — — — — — — — — — — — — — | 1-SI-MOV-1867C red light is lit and green light   | t is NOT lit.               |
| CRITICAL STEP   SAT [] UNSAT []  |   | Notes/Comments:                         | · .   |                             |
| SAT [] UNSAT []   STANDARDS   OPEN pushbutton for 1-SI-MOV-1867A is depressed.    Dead simulator   Cue   1-SI-MOV-1867A red light is lit and green light is NOT lit.   |   |   |   | ·                           |
| SAT [] UNSAT []   STANDARDS   OPEN pushbutton for 1-SI-MOV-1867A is depressed.    Dead simulator   1-SI-MOV-1867A red light is lit and green light is NOT lit.   cue   1-SI-MOV-1867A red light is lit and green light is NOT lit.   |   |   |   |                             |
| SAT [] UNSAT []   STANDARDS   OPEN pushbutton for 1-SI-MOV-1867A is depressed.    Dead simulator   1-SI-MOV-1867A red light is lit and green light is NOT lit.   cue   1-SI-MOV-1867A red light is lit and green light is NOT lit.   |   |   |   |                             |
| STANDARDS   OPEN pushbutton for 1-SI-MOV-1867A is depressed.    Dead simulator   1-SI-MOV-1867A red light is lit and green light is NOT lit.   cue   cue | 8 | Open BIT inlet va                       | ve.   | Procedure Step 3f           |
| Dead simulator cue 1-SI-MOV-1867A red light is lit and green light is NOT lit.   |   | CRITICAL ST                             | P   | SAT[] UNSAT[]               |
| cue  |   | STANDARDS                               | OPEN pushbutton for 1-SI-MOV-1867A is dep         | ressed.                     |
| Notes/Comments:  |   | I                                       | 1-SI-MOV-1867A red light is lit and green light   | t is NOT lit.               |
|  |   | Notes/Comments:                         | ·   |                             |
|  |   |   |   |                             |

| 9  | Open Lnoi pump                | suction valve from RWST.                          | Procedure Step 4a                   |
|----|-------------------------------|---|-------------------------------------|
|    | STANDARDS                     | 1-SI-MOV-1862A is verified open.                  |                                     |
|    | OTANDANDO                     | THO THOU TOOLS TO TORNOG OPOST                    |                                     |
|    |                               |   | SAT[] UNSAT[]                       |
|    |                               |   |                                     |
|    | Dead simulator cue            | 1-SI-MOV-1862A red light is lit and gree          | n light is NOT lit.                 |
|    | <u> </u>                      |   |                                     |
|    | Notes/Comments:               |   |                                     |
|    |                               | . '   |                                     |
|    |                               |   |                                     |
|    |                               |   |                                     |
|    |                               |   |                                     |
|    |                               |   |                                     |
|    |                               | · · · · · · · · · · · · · · · · · · ·             |                                     |
|    |                               | •   |                                     |
| 10 | Open I HSI pump               | discharge valve.                                  | Procedure Step 4b1                  |
| 10 | Open LHSI pump                | discharge valve.                                  | Procedure Step 4b1                  |
| 10 | Open LHSI pump                | discharge valve.  1-SI-MOV-1864A is verified open | Procedure Step 4b1                  |
| 10 |                               |   |                                     |
| 10 |                               |   | Procedure Step 4b1  SAT [] UNSAT [] |
| 10 | STANDARDS                     | 1-SI-MOV-1864A is verified open                   | SAT[] UNSAT[]                       |
| 10 | STANDARDS  Dead simulator     |   | SAT[] UNSAT[]                       |
| 10 | STANDARDS                     | 1-SI-MOV-1864A is verified open                   | SAT[] UNSAT[]                       |
| 10 | STANDARDS  Dead simulator cue | 1-SI-MOV-1864A is verified open                   | SAT[] UNSAT[]                       |
| 10 | STANDARDS  Dead simulator     | 1-SI-MOV-1864A is verified open                   | SAT[] UNSAT[]                       |
| 10 | STANDARDS  Dead simulator cue | 1-SI-MOV-1864A is verified open                   | SAT[] UNSAT[]                       |
| 10 | STANDARDS  Dead simulator cue | 1-SI-MOV-1864A is verified open                   | SAT[] UNSAT[]                       |
| 10 | STANDARDS  Dead simulator cue | 1-SI-MOV-1864A is verified open                   | SAT[] UNSAT[]                       |

| 11   | Open LHSI pump o                      | cold-leg injection valve.  | Procedure Step 4b2                    |
|------|---------------------------------------|--|---------------------------------------|
|      |                                       |  | ·                                     |
|      | <u>STANDARDS</u>                      | 1-SI-MOV-1890C is verified open  |                                       |
|      |                                       |  |                                       |
|      |                                       |  | SAT[] UNSAT[]                         |
|      |                                       |  | -                                     |
|      | Dead simulator                        | 1-SI-MOV-1890C red light is lit and green ligh   | it is NOT lit.                        |
|      | cue                                   |  | ·                                     |
|      |                                       |  |                                       |
|      | Notes/Comments                        |  |                                       |
|      | 1101007001111101110                   |  |                                       |
|      |                                       |  |                                       |
|      |                                       |  |                                       |
|      |                                       |  |                                       |
|      |                                       |  | · · · · · · · · · · · · · · · · · · · |
|      |                                       |  |                                       |
|      |                                       | ·  |                                       |
|      |                                       | •  |                                       |
| 140  | 1v - 3r - 0vv                         | Para de la companya della companya della companya della companya de la companya della companya d |                                       |
| 12   | Verify SW spray va                    | ives open.   | Procedure Step 5a                     |
|      |                                       |  |                                       |
|      | <u>STANDARDS</u>                      | Pressure is verified on in-service SW spray he   | eaders.                               |
|      |                                       |  |                                       |
|      |                                       |  | SAT[] UNSAT[]                         |
|      |                                       |  |                                       |
|      | Dead simulator                        | Pressure is indicated on the in-service SW sp  | ray headers.                          |
|      | <u>cue</u>                            |  |                                       |
|      |                                       |  |                                       |
|      | Notes/Comments:                       | <del></del>  |                                       |
|      |                                       |  |                                       |
|      |                                       |  |                                       |
|      |                                       | · · · · · · · · · · · · · · · · · · ·  |                                       |
|      |                                       |  |                                       |
| <br> |                                       | <del></del>  |                                       |
|      |                                       |  |                                       |
|      |                                       |  |                                       |
| 42   | Varify CMI apray by                   | race velves closed   | Dragodura Ston Eh                     |
| 13   | verify Svv spray by                   | pass valves closed.  | Procedure Step 5b                     |
|      | OTANDADDO                             | 1000   |                                       |
|      | <u>STANDARDS</u>                      | SW spray bypass pressure is verified zero.   |                                       |
|      |                                       |  |                                       |
|      |                                       |  | SAT[] UNSAT[]                         |
|      | · · · · · · · · · · · · · · · · · · · |  |                                       |
|      | Dead simulator                        | SW spray bypass pressure is zero.  |                                       |
|      | cue                                   |  |                                       |
|      |                                       |  |                                       |
|      | Notes/Comments:                       |  |                                       |
|      |                                       |  | j                                     |
|      |                                       |  |                                       |
|      |                                       | <u></u>  |                                       |
|      |                                       |  |                                       |

|           | CRITICAL STE              | P  | SAT[] UNSAT[]              |
|-----------|---------------------------|--|----------------------------|
|           | STANDARDS                 | Control switch for 1-SI-P-1A is placed in AU   | ro                         |
| ·         | Dead simulator cue        | "A" LHSI pump motor ammeter pegged high,   | then decreased to 28.      |
| . [       | Notes/Comments            |  |                            |
|           | L                         |  | ·.                         |
|           |                           |  |                            |
|           |                           | •  |                            |
| 15        | Verify RCP seal in        | ejection and seal cooling has been isolated.   | Procedure Step 6b1         |
| 15        | Verify RCP seal in        | jection and seal cooling has been isolated.    RCP seal injection and seal cooling is verifie  | Procedure Step 6b1         |
| 15        |                           | The state of the s | •                          |
| 15        |                           | The state of the s | d isolated.                |
|           | STANDARDS  Examiner's cue | RCP seal injection and seal cooling is verified.  Review the JPM initial conditions.   | d isolated.  SAT[] UNSAT[] |
| <br> <br> | STANDARDS  Examiner's cue | RCP seal injection and seal cooling is verified  | d isolated.  SAT[] UNSAT[] |

| STANDARDS          | 1-CH-P-1A or 1-CH-P-1C control switch is place | d in AUTO.        |
|--------------------|--|-------------------|
| Dead simulator cue | Charging pump motor ammeter pegged high, the   | en decreased to 9 |
| Notes/Comments     | ·  |                   |
|                    |  |                   |
|                    |  |                   |
|                    |  |                   |

## SIMULATOR, LABORATORY, IN--PLANT SETUP (If Required)

EL0301, 0302 Trip both EDGs on overspeed

Perform ECA-0.0 through step 10 and attachment 3, then reenergize 1H bus and continue with step 27 – 31

Close the following per attachment 3

1-CH-318

1-CH-314

1-CH-310

1-CC-757

1-CH-MOV-1381

Align "C" charging pump to "H" bus

# Dominion North Anna Power Station JOB PERFORMANCE MEASURE EVALUATION

#### **OPERATOR PROGRAM**

#### **INITIAL CONDITIONS**

1-ECA-0.0 has directed a transition to 1-ECA-0.2

Power to the "H" emergency bus has been restored

Seal injection and seal cooling have been isolated in accordance with 1-ECA-0.0

#### **INITIATING CUE**

You are requested to establish safety injection flow in accordance with 1-ECA-0.2, "Loss of All AC Power Recovery With SI Required." Continue to the point of checking intact steam generator levels.

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# Dominion North Anna Power Station JOB PERFORMANCE MEASURE EVALUATION

#### **OPERATOR PROGRAM**

#### **R208**

| т | Α | S | K |
|---|---|---|---|
|   |   |   |   |

Establish safety injection flow during a loss of all AC power recovery with safety injection required (1-ECA-0.2).

#### **TASK STANDARDS**

Safety Injection flow has been established via cold leg injection flowpath

#### **K/A REFERENCE:**

006-A4.08 (4.2/4.3)

#### **ALTERNATE PATH:**

N/A

#### **TASK COMPLETION TIMES**

| Validation Time = | 8 minutes | Start Time = |  |
|-------------------|-----------|--------------|--|
| Actual Time =     | minutes   | Stop Time =  |  |

### **PERFORMANCE EVALUATION**

| Rating                  | []SATISFACTORY | [ ] UNSATISFACTORY |  |
|-------------------------|----------------|--------------------|--|
| Candidate (Print)       |                |                    |  |
| Evaluator (Print)       |                |                    |  |
| Evaluator's Signature / |                |                    |  |
| EVALUATOR'S COMMENTS    |                |                    |  |
|                         |                |                    |  |
|                         |                |                    |  |

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## Dominion North Anna Power Station

## JOB PERFORMANCE MEASURE (Evaluation)

#### **OPERATOR PROGRAM**

R208

#### READ THE APPLICABLE INSTRUCTIONS TO THE CANDIDATE

#### Instructions for Simulator JPMs

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

#### **INITIAL CONDITIONS**

1-ECA-0.0 has directed a transition to 1-ECA-0.2

Power to the "H" emergency bus has been restored

Seal injection and seal cooling have been isolated in accordance with 1-ECA-0.0

#### **INITIATING CUE**

You are requested to establish safety injection flow in accordance with 1-ECA-0.2, "Loss of All AC Power Recovery With SI Required." Continue to the point of checking intact steam generator levels.

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### **TOOLS AND EQUIPMENT**

None

|  | Р | ER | (F | OI | RN | ۱A | N | CE | 3 S | T | EF | งร |
|--|---|----|----|----|----|----|---|----|-----|---|----|----|
|--|---|----|----|----|----|----|---|----|-----|---|----|----|

| 1 | Verify that both tr | ains of safety injection are reset.               | Procedure Step 1 |
|---|---------------------|---|------------------|
|   | STANDARDS           | Permissive status light P-H1 is verified NOT lit. |                  |
|   |                     |   | SAT[] UNSAT[     |
|   | Dead simulator cue  | Permissive status light P-H1 is NOT lit.          |                  |
|   |                     | ·   |                  |
|   |                     |   |                  |
|   | Check RWST lev      | el greater than 23%.                              | Procedure Step 2 |
| 2 |                     | :   |                  |
| 2 | STANDARDS           | RWST level is verified >23%.                      |                  |
| 2 |                     | RWST level is verified >23%.                      | [SAT[] UNSAT[    |
| 2 |                     | RWST level is verified >23%.  RWST level is 97%.  | [SAT[] UNSAT[    |

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11/30/01

| 3               | Open charging pun  | np suction from the RVVS1.   | Procedure Step 3a                         |
|-----------------|--------------------|--|---|
|                 | CRITICAL STE       |  | SAT[] UNSAT[]                             |
|                 | OKITIOAL OIL       |  | J. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. |
|                 | STANDARDS          | 1-CH-MOV-1115D control switch is placed in t   | he OPEN position.                         |
|                 | Dead simulator cue | 1-CH-MOV-1115D red light is lit and green ligh   | it is NOT lit.                            |
|                 | Notes/Comments     |  |   |
|                 | Notes/Comments     |  |   |
| <br><del></del> |                    |  |   |
|                 |                    |  |   |
| 4               | Close charging pur | np suction from the VCT.   | Procedure Step 3b                         |
|                 | CRITICAL STE       |  | SAT[] UNSAT[]                             |
|                 |                    | <u> 1904 - N. O. State (1808), Statement (1808), statement (1808), statement (1808), statement (1809), statement</u> |   |
|                 | STANDARDS          | 1-CH-MQV-1115C control switch is placed in t   | ne CLOSE position.                        |
|                 | Dead simulator cue | 1-CH-MOV-1115C green light is lit and red ligh   | t is NOT lit.                             |
|                 | Notes/Comments     |  |   |
|                 | Notes/Comments     |  | •   |
|                 |                    |  |   |
|                 |                    |  |   |
|                 |                    |  |   |
| 5               | Close normal charg | jing isolation valve.  | Procedure Step 3c                         |
|                 | CRITICAL STE       |  | SAT[] UNSAT[]                             |
|                 | CKITICAL 3 IE      |  | Orti [] Ortorti []                        |
|                 | STANDARDS          | 1-CH-MOV-1289A control switch is placed in the   | ne CLOSE position.                        |
|                 | Dead simulator     | 1-CH-MOV-1289A green light is lit and red ligh   | t is NOT lit.                             |
|                 | cue                |  |   |
|                 | Notes/Comments     |  |   |
| •               |                    |  |   |
|                 |                    |  |   |

| 6 | Close the BiT reci   | rc valves.  | Procedure Step 3d             |
|---|--|---|-------------------------------|
|   | CRITICAL STE   | P   | SAT[] UNSAT[]                 |
|   | STANDARDS  | 1-SI-TV-1884A, 1884B, and 1884C CLOSE pudepressed.          | ushbuttons are                |
|   | Dead simulator cue   | 1-SI-TV-1884A, 1884B, and 1884C green light<br>are NOT lit. | ts are all lit and red lights |
|   | Notes/Comments:  | Closing either TV-1884A or 1884C is sufficient to           | o satisfy the critical step.  |
|   |  |   |                               |
| 7 | Open BIT outlet v  | alve.   | Procedure Step 3e             |
|   | CRITICAL STE   | <b>.</b>  | SAT[] UNSAT[]                 |
|   | STANDARDS  | OPEN pushbutton for 1-SI-MOV-1867C is dep                   | ressed.                       |
|   | Dead simulator cue   | 1-SI-MOV-1867C red light is lit and green light             | is NOT lit.                   |
|   | Notes/Comments:  |   |                               |
|   |  |   |                               |
|   | I O DIT in late of   |   | Procedure Step 3f             |
| 3 | Open BIT inlet val   |   | SAT[] UNSAT[]                 |
|   | STANDARDS OPEN pushbutton for 1-SI-MOV-1867A is depressed. |   |                               |
|   | Dead simulator cue   | 1-SI-MOV-1867A red light is lit and green light             | is NOT lit.                   |
|   | Notes/Comments:  |   |                               |
|   |  |   |                               |

| Step 4a  |
|----------|
|          |
| ISAT[]   |
|          |
|          |
|          |
|          |
|          |
| Step 4b  |
| Step 4b* |
| Step 4b* |
|          |
| Step 4b1 |
|          |

| 11 | Open LHSI pump o   | cold-leg injection valve.                     | Procedure Step 4b2 |
|----|--------------------|---|--------------------|
|    | STANDARDS          | 1-SI-MOV-1890C is verified open               |                    |
|    |                    |   | SAT[] UNSAT[]      |
|    | Dead simulator cue | 1-SI-MOV-1890C red light is lit and green lig | ht is NOT lit.     |
|    | Notes/Comments     | •   |                    |
|    |                    |   |                    |
|    |                    |   |                    |
| 12 | Verify SW spray va | alves open.                                   | Procedure Step 5a  |
|    | STANDARDS          | Pressure is verified on in-service SW spray   | headers.           |
|    | <del></del>        |   | SAT[] UNSAT[]      |
|    | Dead simulator cue | Pressure is indicated on the in-service SW s  | pray headers.      |
|    | Notes/Comments:    |   |                    |
|    |                    |   |                    |
|    |                    |   |                    |
| 13 | Verify SW spray by | ypass valves closed.                          | Procedure Step 5b  |
| ٠  | STANDARDS          | SW spray bypass pressure is verified zero.    |                    |
|    |                    |   | [SAT[] UNSAT[]     |
|    | Dead simulator cue | SW spray bypass pressure is zero.             |                    |
|    | Notes/Comments:    | ·.  |                    |
|    |                    |   | :                  |

| 14 | Manually start the | low-head safety injection pump.   | Procedure Step 6a     |
|----|--------------------|---|-----------------------|
|    | CRITICAL STE       | P   | SAT[] UNSAT[]         |
| •  | STANDARDS          | Control switch for 1-SI-P-1A is placed in AUT   | ГО                    |
|    | Dead simulator cue | "A" LHSI pump motor ammeter pegged high,  | then decreased to 28. |
|    | Notes/Comments     |   |                       |
|    |                    |   |                       |
|    |                    |   |                       |
|    |                    |   |                       |
| 15 | Verify RCP seal in | ejection and seal cooling has been isolated.  | Procedure Step 6b     |
| 15 | Verify RCP seal in | jection and seal cooling has been isolated.    RCP seal injection and seal cooling is verifie |                       |
| 15 |                    |   | d isolated.           |
| 15 |                    |   |                       |

| SAT []   STANDARDS   1-CH-P-1A or 1-CH-P-1C control switch is placed in AUT     Dead simulator   Charging pump motor ammeter pegged high, then decreases     Notes/Comments |         |
|---|---------|
| Dead simulator Charging pump motor ammeter pegged high, then decrea   | UNSAT[] |
| Dead simulator Charging pump motor ammeter pegged high, then decrea   | 0.      |
| Notes/Comments  |         |
|   |         |
|   |         |
|   |         |
|   |         |
| >>>> END OF EVALUATION <  |         |

# SIMULATOR, LABORATORY, IN--PLANT SETUP (If Required)

EL0301, 0302 Trip both EDGs on overspeed

Perform ECA-0.0 through step 10 and attachment 3, then reenergize 1H bus and continue with step 27 – 31

Close the following per attachment 3

1-CH-318

1-CH-314

1-CH-310

1-CC-757

1-CH-MOV-1381

Align "C" charging pump to "H" bus

# Dominion North Anna Power Station JOB PERFORMANCE MEASURE EVALUATION

#### OPERATOR PROGRAM R223

#### **INITIAL CONDITIONS**

Loss of all main feedwater due to a piping rupture resulted in the unit's tripping from 100% power

All steam generator wide-range levels are less than 12%

All auxiliary feedwater pumps are unavailable

1-FR-H.1 has been completed through checking if a wide-range level in any two steam generators is less than 12%

#### **INITIATING CUE**

You are requested to initiate Reactor Coolant System bleed and feed in accordance with 1-FR-H.1.

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# Dominion North Anna Power Station JOB PERFORMANCE MEASURE EVALUATION

## OPERATOR PROGRAM R223

| T | Α | S | K |
|---|---|---|---|
|   |   |   |   |

| Initiate RCS bi | eed and teed in | response to a $\ell$ | oss of secondar | v neat sink |
|-----------------|-----------------|----------------------|-----------------|-------------|

#### **TASK STANDARDS**

RCPs are stopped, SI is actuated, PCV-1455C is opened and reactor/PRZR vents are opened

#### **K/A REFERENCE:**

E05-EA1.1 (4.1/4.0)

#### **ALTERNATE PATH:**

One PRZR PORV fails to open, requiring reactor head vents and PRZR vents to be opened

#### **TASK COMPLETION TIMES**

| Validation Time = | 6 minutes | Start Time = |  |
|-------------------|-----------|--------------|--|
| Actual Time =     | minutes   | Stop Time =  |  |

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## PERFORMANCE EVALUATION

| Rating                          | [ ] SATISFACTORY | [ ] UNSATISI | FACTORY |
|---------------------------------|------------------|--------------|---------|
| Candidate (Print)               |                  | ·<br>        |         |
| Evaluator (Print)               |                  |              | ·       |
| Evaluator's Signature /<br>Date |                  |              |         |
| EVALUATOR'S COMMENTS            |                  |              |         |
| EVALUATOR O COMMENTO            |                  |              |         |
|                                 |                  |              |         |
|                                 |                  |              |         |

## Dominion North Anna Power Station

## JOB PERFORMANCE MEASURE (Evaluation)

## OPERATOR PROGRAM R223

#### READ THE APPLICABLE INSTRUCTIONS TO THE CANDIDATE

#### Instructions for Simulator JPMs

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

#### **INITIAL CONDITIONS**

Loss of all main feedwater due to a piping rupture resulted in the unit's tripping from 100% power

All steam generator wide-range levels are less than 12%

All auxiliary feedwater pumps are unavailable

1-FR-H.1 has been completed through checking if a wide-range level in any two steam generators is less than 12%

#### **INITIATING CUE**

You are requested to initiate Reactor Coolant System bleed and feed in accordance with 1-FR-H.1.

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### **TOOLS AND EQUIPMENT**

Copy of 1-FR-H.1 signed off through checking if a wide-range level in any two steam generators is less than 12%

| <u>FOR</u> | MANCE STEPS           |  |                        |
|------------|-----------------------|--|------------------------|
| STA        | ART TIME              |  |                        |
|            |                       |  | ·                      |
| 1          | Verify all reactor of | coolant pumps have been placed in STOP.      | Procedure Step 1       |
|            | CRITICAL ST           | <b>:</b> P                                   | SAT[] UNSAT[           |
|            | STANDARDS             | Control switches for all reactor coolant pur | nps are placed in STOP |
|            | Dead simulator cue    | RCP motor ammeters all indicate zero.        |                        |
|            | Notes/Comments        |  |                        |
|            | ·                     |  |                        |
|            | ,                     |  |                        |
|            |                       |  |                        |
| 2          | Place all pressuriz   | zer heaters in PULL-TO-LOCK.                 | Procedure Step 16      |
|            | CRITICAL STE          |  | SAT[] UNSAT[           |
|            | STANDARDS             | All pressurizer heater control switches are  | placed in PULL-TO-LOC  |
|            | Dead simulator cue    | Red and green lights for all PRZR heaters    | are NOT lit.           |
|            | Notes/Comments        |  |                        |
|            |                       |  |                        |

| 3    | Determine if safet                                       | y injection has been actuated.              | Procedure Step 17      |
|------|--|---|------------------------|
|      | (100 m m m m m m m m m m m m m m m m m m                 |   |                        |
|      | <u>STANDARDS</u>   | Permissive status lights P-H1 and P-H2 are  | verified NOT lit.      |
|      |  |   | CATLL LINCATLL         |
| •    |  |   | SAT[] UNSAT[]          |
|      | Dead simulator   | Permissive status lights P-H1 and P-H2 are  | NOT lit                |
|      | Dead simulator   | Permissive status lights P-H I and P-H2 are | NOTIL                  |
|      | cue  |   |                        |
|      | NI-t10   |   |                        |
|      | Notes/Comments   |   |                        |
|      |  |   |                        |
|      |  | ·   |                        |
|      |  |   |                        |
|      |  |   |                        |
|      |  |   |                        |
|      |  |   |                        |
| 4    | Manually actuate   | both trains of safety injection.            | Procedure Step 17b     |
|      |  | •     | RNO .                  |
|      |  |   |                        |
|      | CRITICAL STE   | <b>P</b>                                    | SAT[] UNSAT[]          |
|      | S. T. Marchaella, M. |   |                        |
|      | STANDARDS  | Either SAFETY INJECTION INITIATE contr      | ol switch is placed in |
|      |  | INITIATE                                    | ·                      |
|      |  |   |                        |
|      | Notes/Comments   |   |                        |
|      |  |   |                        |
|      |  |   |                        |
|      |  |   |                        |
|      |  |   |                        |
|      |  |   | •                      |
|      |  | •   |                        |
| r i= |  |   | Dunned une Chen 190    |
| 5    | Verify that at least                                     | t one charging pump is running.             | Procedure Step 18a     |
|      | CTANDADDC  | A and B charging pumps are verified runnin  | <u> </u>               |
|      | STANDARDS  | A and B charging pumps are verified runnin  | 9.                     |
|      |  |   | SAT[] UNSAT[]          |
|      | •  |   | G/(1 [] G/(G/(1 []     |
|      | Dead simulator   | A and B charging pump motor ammeters in     | dicate 92 amps         |
|      | cue  | A drie b charging pump motor difficulties   | aloate of allipo       |
|      | 000  |   |                        |
|      | Notes/Comments   |   |                        |
|      | Notes/Comments   | ·   |                        |
|      |  | •   |                        |
|      |  |   | <u></u>                |
|      |  |   |                        |

| 6 | Verify charging pu | ımp suction valves from RWST are open.         | Procedure Step 18b.1            |  |
|---|--------------------|--|---------------------------------|--|
|   | STANDARDS          | 1-CH-MOV-1115B and 1115D are verified          | open.                           |  |
|   |                    |  | SAT[] UNSAT[]                   |  |
|   | Dead simulator cue | 1-CH-MOV-1115B and 1115D red lights ar NOT lit | e both lit and green lights are |  |
|   | Notes/Comments     |  |                                 |  |
|   |                    |  |                                 |  |
|   |                    |  |                                 |  |
| 7 | Verify charging pu | ump suction valves from VCT are closed.        | Procedure Step 18b.2            |  |
|   | STANDARDS          | 1-CH-MOV-1115C and 1115E are verified          | closed.                         |  |
|   |                    |  | SAT[] UNSAT[]                   |  |
|   | Dead simulator     | 1-CH-MOV-1115C and 1115E green lights          | are both lit and red lights are |  |
|   |                    |  |                                 |  |
|   | Notes/Comments     | e.   | •                               |  |
|   | ·                  |  |                                 |  |
|   |                    |  |                                 |  |

| 8    | Verify BIT recirc valves are closed.                          |  | Procedure Step 18b.3                  |  |  |
|------|---|--|---------------------------------------|--|--|
|      | STANDARDS 1-SI-TV-1884A, 1884B and 1884C are verified closed. |  |                                       |  |  |
|      |   |  | [SAT[] UNSAT[]                        |  |  |
|      | Dead simulator cue  | 1-SI-TV-1884A, 1884B, and 1884C green lights         | are lit and red lights are            |  |  |
|      | Notes/Comments  |  |                                       |  |  |
|      |   |  |                                       |  |  |
|      |   |  |                                       |  |  |
| 9    | Verify BIT outlet va  | lves are open.                                       | Procedure Step 18b.4                  |  |  |
|      | STANDARDS   | 1-SI-MOV-1867C and 1867D are verified open.          | · · · · · · · · · · · · · · · · · · · |  |  |
|      |   |  | SAT[] UNSAT[]                         |  |  |
|      | Dead simulator cue  | 1-SI-MOV-1867C and 1867D red lights are both NOT lit | lit and green lights are              |  |  |
|      | Notes/Comments  |  |                                       |  |  |
| <br> |   |  |                                       |  |  |
|      |   |  |                                       |  |  |
| 10   | Verify BIT inlet valv   | es are open.   | Procedure Step 18b.5                  |  |  |
|      | STANDARDS   | 1-SI-MOV-1867A and 1867B are verified open.          |                                       |  |  |
|      |   |  | SAT[] UNSAT[]                         |  |  |
|      | Dead simulator cue  | 1-SI-MOV-1867A and 1867B red lights are both NOT lit | lit and green lights are              |  |  |
|      | Notes/Comments  |  |                                       |  |  |
| <br> |   |  |                                       |  |  |

| 11 | Verify normal charging valves are closed.               |   | Procedure Step 18b.6                  |  |  |
|----|---|---|---------------------------------------|--|--|
|    | STANDARDS 1-CH-MOV-1289A and 1289B are verified closed. |   |                                       |  |  |
|    | STANDARDS   | 1-OTT-WOV-1209A and 1209B are verifie   | olosou.                               |  |  |
|    |   |   | SAT[] UNSAT[]                         |  |  |
|    |   |   | · · · · · · · · · · · · · · · · · · · |  |  |
|    | Dead simulator cue                                      | 1-CH-MOV-1289A and 1289B green ligh     | its are both lit and red lights are   |  |  |
|    |   |   |                                       |  |  |
|    | Notes/Comments  |   |                                       |  |  |
|    |   |   |                                       |  |  |
|    |   |   |                                       |  |  |
| ·  |   |   |                                       |  |  |
|    |   |   |                                       |  |  |
|    |   |   |                                       |  |  |
|    |   |   |                                       |  |  |
|    |   |   |                                       |  |  |
| 12 | Verify that cold-leg                                    | safety injection flow is indicated.     | Procedure Step 18c                    |  |  |
|    |   |   |                                       |  |  |
|    | STANDARDS   | SI flow is verified.                    |                                       |  |  |
|    |   |   | SAT[] UNSAT[]                         |  |  |
|    |   |   | SATE UNSATE                           |  |  |
|    | Dead simulator  | 380 gpm flow is indicated on SI-FI-1943 | and 1943-1                            |  |  |
|    | cue   |   |                                       |  |  |
|    | Notes/Comments  |   |                                       |  |  |
|    | 11.01.007.0011111.00110                                 |   |                                       |  |  |
|    |   |   |                                       |  |  |
|    |   |   |                                       |  |  |
|    |   |   |                                       |  |  |

| 13   | Reset both trains  | of safety injection.                             | Procedure Step 19      |
|------|--------------------|--|------------------------|
|      |                    | Tax DESE   |                        |
|      | <u>STANDARDS</u>   | SI reset switches are both placed in RESET.      |                        |
|      |                    |  | CATIL LINCATIA         |
|      |                    |  | SAT[] UNSAT[]          |
|      | Dead simulator     | Permissive status light P-H1 is NOT lit, statu   | e light P-H2 is lit    |
|      | cue                | Fermissive status light F-111 is NOT lit, statu  | 5 light F -1 12 15 lit |
|      | 000                |  |                        |
|      | Notes/Comments     |  |                        |
|      | 140tes/Confinents  | •  |                        |
|      |                    |  |                        |
|      |                    |  |                        |
|      |                    |  |                        |
|      |                    |  |                        |
|      |                    |  |                        |
|      |                    |  |                        |
| 14   | Reset both trains  | of phase "A" isolation.                          | Procedure Step 20      |
|      |                    |  |                        |
|      | <u>STANDARDS</u>   | Phase A reset switches are both placed in R      | ESET.                  |
|      |                    |  | CATEL UNICATEL         |
|      |                    |  | SAT[] UNSAT[]          |
|      | Dood simulates     | Annunciator K-H7 is NOT lit                      |                        |
|      | Dead simulator cue | Annunciator K-H7 is NOT in                       |                        |
|      | cae                |  |                        |
|      | Notes/Comments     |  |                        |
|      | INOLES/Comments    |  |                        |
|      |                    | ·  |                        |
|      |                    |  |                        |
|      |                    |  |                        |
| <br> |                    |  |                        |
|      |                    |  |                        |
|      |                    |  |                        |
| 15   | Reset both trains  | of phase "B" isolation, if necessary.            | Procedure Step 21      |
|      |                    |  |                        |
|      | <u>STANDARDS</u>   | Phase B is verified not actuated.                |                        |
|      |                    | •  |                        |
|      |                    |  | SAT[] UNSAT[]          |
|      | [B4-2-11           | I Described to status Robots D 114 and D 110 and | NOT 19                 |
|      | Dead simulator     | Permissive status lights P-H1 and P-H2 are       | NOT lit                |
|      | cue                |  |                        |
|      | h                  |  | ·                      |
|      | Notes/Comments     | •  |                        |
|      |                    |  |                        |
|      |                    |  | ·                      |
|      |                    |  |                        |

| 6        | Establish instrume                                | one an to containment.  | Procedure Step 22                |
|----------|---|---|----------------------------------|
|          | STANDARDS   | 2-IA-C-1 is verified running and containment to   | rip valves are verified          |
|          |   | open.   |                                  |
|          |   |   | SAT[] UNSAT[]                    |
|          | Dead simulator                                    | 2-IA-C-1 red light is lit and green light is not lit red lights are both lit and green lights are NOT | , 1-IA-TV-102A and 102B<br>⊓lit. |
|          |   |   |                                  |
|          | Notes/Comments                                    |   | · ·                              |
|          |   | •   |                                  |
|          |   |   |                                  |
|          |   |   |                                  |
|          |   |   |                                  |
|          |   |   |                                  |
|          |   |   |                                  |
| <u>.</u> |   |   |                                  |
| 17       |   | is available to the pressurizer power-operated  | Procedure Step 23a               |
| 17       | Verify that power relief valve block              |   | Procedure Step 23a               |
| 7        | relief valve block                                | valves.   |                                  |
| 7        |   |   |                                  |
| 17       | relief valve block                                | valves.   | red.                             |
| 17       | relief valve block                                | valves.   |                                  |
| 17       | relief valve block  STANDARDS  Dead simulator     | valves.   | ed. [SAT[] UNSAT[]               |
| 17       | relief valve block                                | valves.  PRZR PORV block valves are verified energiz  1-RC-MOV-1535 and 1536 red lights are both      | sed.                             |
| 17       | relief valve block  STANDARDS  Dead simulator cue | valves.  PRZR PORV block valves are verified energiz  1-RC-MOV-1535 and 1536 red lights are both      | sed.                             |
| 17       | relief valve block  STANDARDS  Dead simulator     | valves.  PRZR PORV block valves are verified energiz  1-RC-MOV-1535 and 1536 red lights are both      | sed.                             |
| 17       | relief valve block  STANDARDS  Dead simulator cue | valves.  PRZR PORV block valves are verified energiz  1-RC-MOV-1535 and 1536 red lights are both      | sed.                             |
|          | relief valve block  STANDARDS  Dead simulator cue | valves.  PRZR PORV block valves are verified energiz  1-RC-MOV-1535 and 1536 red lights are both      | sed.                             |

|   | 18 | Verify that both prevalves are open. | essurizer power-operated relief valve block   | Procedure Step 23b         |
|---|----|--------------------------------------|---|----------------------------|
|   |    | STANDARDS                            | PRZR PORV block valves are verified open.   |                            |
|   |    |                                      |   | SAT[] UNSAT[]              |
|   |    | Dead simulator cue                   | 1-RC-MOV-1535 and 1536 red lights are both NOT lit  | n lit and green lights are |
|   |    | Notes/Comments                       |   |                            |
|   |    |                                      |   |                            |
|   |    |                                      |   |                            |
|   | 19 | Open both pressur                    | izer power-operated relief valves.  | Procedure Step 23c         |
| - |    | CRITICAL STE                         | P   | SAT[] UNSAT[]              |
|   |    | STANDARDS                            | Control switches for 1-RC-PCV-1455C and 1 in OPEN   | -RC-PCV-1456 are placed    |
|   |    | Dead simulator cue                   | 1-RC-PCV-1455C red light is lit and green lig<br>1456 green light is lit and red light is NOT lit | ht is NOT lit, 1-RC-PCV-   |
|   |    |                                      |   |                            |
|   |    | Notes/Comments:                      |   |                            |
|   |    | I                                    |   |                            |

| 20 | 113 to opon i ortiv           | s using NDT protection key switches.  | RNO                                   |
|----|-------------------------------|---|---------------------------------------|
|    | CRITICAL STE                  | P   | SAT[] UNSAT[]                         |
|    |                               |   |                                       |
|    | STANDARDS                     | Keyswitch for 1-RC-PCV-1456 is placed in Ol   | PEN                                   |
|    | Dead simulator cue            | 1-RC-PCV-1455C red light is lit and green lig<br>1456 green light is lit and red light is NOT lit               | ht is NOT lit, 1-RC-PCV-              |
|    | Notes/Comments:               |   |                                       |
|    |                               |   | · · · · · · · · · · · · · · · · · · · |
|    | •                             |   |                                       |
|    |                               |   |                                       |
| 21 | Verify that the Rea           | actor Coolant System bleed path is adequate.  | Procedure Step 24                     |
| 21 | Verify that the Rea           | ector Coolant System bleed path is adequate.  PRZR PORVs and block valves are checked determined to be closed.  | ,                                     |
| 21 |                               | PRZR PORVs and block valves are checked   | ,                                     |
| 21 | STANDARDS  Dead simulator     | PRZR PORVs and block valves are checked determined to be closed.  1-RC-PCV-1455C red light is lit and green lig | and PCV-1456 is  [SAT [] UNSAT []     |
| 21 | STANDARDS                     | PRZR PORVs and block valves are checked determined to be closed.  | and PCV-1456 is  [SAT [] UNSAT []     |
| 21 | STANDARDS  Dead simulator     | PRZR PORVs and block valves are checked determined to be closed.  1-RC-PCV-1455C red light is lit and green lig | and PCV-1456 is  [SAT [] UNSAT []     |
| 21 | STANDARDS  Dead simulator cue | PRZR PORVs and block valves are checked determined to be closed.  1-RC-PCV-1455C red light is lit and green lig | and PCV-1456 is  [SAT [] UNSAT []     |

| 22 | Open the reactor                            |   | RNO  |
|----|---|---|--|
|    | CRITICAL ST                                 | ∃ <b>P</b>  | SAT[] UNSAT[]                                |
|    | STANDARDS                                   | Control switch for each of the following reacto OPEN:   | r vent valves is placed i                    |
|    |   | <ul> <li>1-RC-SOV-101A-1</li> <li>1-RC-SOV-101B-1</li> <li>1-RC-SOV-101A-2</li> </ul>   |  |
|    |   | • 1-RC-SOV-101B-2   |  |
|    | Dead simulator cue                          | 1-RC-SOV-101A-1, 101B-1, 101A-2, and 101 and green lights are NOT lit   | B-2 red lights are all lit                   |
|    | Notes/Comments                              |   |  |
|    |   |   |  |
|    | 1   |   |  |
|    |   |   |  |
| 22 | Open the PRZR v                             | vent valves.  |  |
| 22 | ·   |   | RNO  |
| 22 | Open the PRZR v                             |   |  |
| 22 | ·   |   | RNO SAT[] UNSAT[]                            |
| 22 | CRITICAL STE                                | Control switch for each of the following PRZR OPEN:  • 1-RC-SOV-102A-1  • 1-RC-SOV-102B-1  • 1-RC-SOV-102A-2                    | RNO SAT[] UNSAT[]                            |
| 22 | CRITICAL STE                                | Control switch for each of the following PRZR OPEN:  • 1-RC-SOV-102A-1  • 1-RC-SOV-102B-1                                       | RNO SAT[] UNSAT[]                            |
| 22 | CRITICAL STE                                | Control switch for each of the following PRZR OPEN:  • 1-RC-SOV-102A-1  • 1-RC-SOV-102B-1  • 1-RC-SOV-102A-2                    | RNO SAT [] UNSAT [] vent valves is placed in |
| 22 | CRITICAL STE  STANDARDS  Dead simulator cue | Control switch for each of the following PRZR OPEN:  • 1-RC-SOV-102A-1  • 1-RC-SOV-102B-1  • 1-RC-SOV-102A-2  • 1-RC-SOV-102B-2 | RNO SAT [] UNSAT [] vent valves is placed in |
| 22 | STANDARDS  Dead simulator                   | Control switch for each of the following PRZR OPEN:  • 1-RC-SOV-102A-1  • 1-RC-SOV-102B-1  • 1-RC-SOV-102A-2  • 1-RC-SOV-102B-2 | SAT [] UNSAT []                              |

| 23  | Align low-pressure water source. |                                       | Procedure Step 24c<br>RNO       |
|-----|----------------------------------|---------------------------------------|---------------------------------|
|     | STANDARDS                        | Auxiliary operator is requested to al | lign low-pressure water source. |
|     | Examiner's cue                   | Assume that another operator will o   | complete the procedure          |
|     | Notes/Comments                   |                                       |                                 |
|     |                                  |                                       |                                 |
|     |                                  |                                       |                                 |
|     |                                  |                                       |                                 |
|     |                                  | >>>> END OF EVALUATION <<             | <b>&lt;&lt;&lt;</b>             |
| STO | P TIME                           |                                       | 7                               |

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## SIMULATOR, LABORATORY, IN--PLANT SETUP (If Required)

## SIMULATOR SETUP

## JOB PERFORMANCE MEASURE R223

| CHECKLIST  |
|--|
| Recall 100% power IC (IC-172)  |
| <ul> <li>Enter switch overrides:</li> <li>PCV456_OPEN, time delay = 0, override = OFF, trigger = none</li> <li>PCV456_N2_OPEN, time delay = 0, override = OFF, trigger = none</li> </ul> |
| Enter malfunction FW06, time delay = 0, trigger = none   |
| Go to run, trip the reactor and the turbine, close the reheater FCVs, place CN pumps and HP heater drain pumps in PTL  |
| When at least 2 steam generators decrease to 12% wide-range level (i.e., when the secon steam generator reaches 12%), place the simulator in FREEZE                                      |
| Dominion North Anna Power Station JOB PERFORMANCE MEASURE EVALUATION   |
| OPERATOR PROGRAM   |

## **INITIAL CONDITIONS**

Unit 1 is at 100% power.

The previous shift experienced problems with rod control.

1&C desires rod control to remain in AUTO during troubleshooting.

## **INITIATING CUE**

Assist I&C as necessary in troubleshooting rod control system problems.

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# Dominion North Anna Power Station JOB PERFORMANCE MEASURE EVALUATION

## **OPERATOR PROGRAM**

## R475 (MOD)

| TASK |
|------|
|------|

Perform the immediate operator actions in response to a continuous uncontrolled rod motion (1-AP-1.1).

### **TASK STANDARDS**

Immediate actions of 1-AP-1.1 were performed from memory

Immediate actions of 1-E-0, "Reactor Trip and Safety Injection" were performed from memory.

## **K/A REFERENCE:**

001-AA1.01 (3.5/3.2)

## **ALTERNATE PATH:**

1-E-0, Reactor Trip or Safety Injection.

## **TASK COMPLETION TIMES**

| Validation Time = | 8 minutes | Start Time = |
|-------------------|-----------|--------------|
| Actual Time =     | minutes   | Stop Time =  |

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## PERFORMANCE EVALUATION

| Rating                          | []SATISFACTORY | [ ] UNSATISFACTORY |
|---------------------------------|----------------|--------------------|
| Candidate (Print)               | ·              |                    |
| Evaluator (Print)               |                |                    |
| Evaluator's Signature /<br>Date |                |                    |
| EVALUATOR'S COMMENTS            |                |                    |
|                                 |                |                    |
|                                 |                |                    |
|                                 |                |                    |

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## Dominion North Anna Power Station

## JOB PERFORMANCE MEASURE (Evaluation)

#### **OPERATOR PROGRAM**

R475 (MOD)

#### READ THE APPLICABLE INSTRUCTIONS TO THE CANDIDATE

#### **Instructions for Simulator JPMs**

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

### **INITIAL CONDITIONS**

Unit is at 100% steady-state operation.

The previous shift experienced problems with rod control.

I&C desires rod control to remain in AUTO during troubleshooting.

## **INITIATING CUE**

Assist I&C as necessary in troubleshooting rod control system problems.

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## TOOLS AND EQUIPMENT

None

| PERF | PERFORMANCE STEPS |                      |  |                        |  |
|------|-------------------|----------------------|--|------------------------|--|
|      | STAI              | RT TIME              | · · · · · · · · · · · · · · · · · · ·          |                        |  |
|      |                   |                      |  |                        |  |
|      | 1                 | Place the control re | od BANK SELECTOR switch to MANUAL.             | AP-1.1, step 1         |  |
|      |                   | CRITICAL STE         | P  | SAT[] UNSAT[]          |  |
|      |                   | STANDARDS            | BANK SELECTOR switch is placed in MAN          | IUAL.                  |  |
|      |                   | Notes/Comments: N    | Malfunction will occur 10 seconds after simula | ator is placed in RUN. |  |
| [    | 2                 | Verify that rod mot  | ion has stopped.                               | AP-1.1, step 2         |  |
|      |                   | STANDARDS            | Rods are verified still moving.                |                        |  |
|      |                   |                      |  | SAT[] UNSAT[]          |  |
|      |                   | Dead simulator cue   | Rods are still inserting.                      |                        |  |
|      |                   | Notes/Comments       |  |                        |  |

| 3 | Go to 1-E-0, Read    | otor Trip or Safety Injection.   | AP-1.1, step 2 RNO<br>and E-0, step 1 |
|---|----------------------|--|---------------------------------------|
|   | CRITICAL STE         |  | SAT[] UNSAT[]                         |
|   | STANDARDS            | Either reactor trip switch is placed in TRIP.                                      |                                       |
|   | Dead simulator cue   | Red lights are NOT lit and green lights are breakers.                              | lit for both reactor trip             |
|   | Notes/Comments       |  |                                       |
|   |                      |  |                                       |
|   |                      |  | •                                     |
| 4 | Manually trip turbi  | ne.  | E-0, step 2a                          |
|   | STANDARDS            | Both turbine trip pushbuttons are simultane  | eously depressed.                     |
|   |                      |  | SAT[] UNSAT[]                         |
|   | Notes/Comments       |  |                                       |
|   |                      |  |                                       |
|   | • .                  |  |                                       |
| 5 | Verify all turbine s | top valves are closed.   | E-0, step 2b                          |
|   | STANDARDS            | Turbine stop valves are verified still open.                                       |                                       |
|   |                      |  | SAT[] UNSAT[]                         |
|   | Dead simulator cue   | Turbine stop valve red lights are lit and grestop valve status lights are NOT lit. | en lights are NOT lit, turbine        |
|   | Notes/Comments       |  |                                       |
|   |                      |  |                                       |
|   |                      |  |                                       |

| 6        | Place both EHC pu                     | ımps in PTL.  | E-0, step 2b RNO                      |
|----------|---------------------------------------|---|---------------------------------------|
|          |                                       |   |                                       |
|          | <u>STANDARDS</u>                      | Both EHC pumps are placed in Pull-To-Lock.          |                                       |
|          |                                       |   |                                       |
|          |                                       |   | SAT[] UNSAT[]                         |
|          |                                       |   |                                       |
|          | Dead simulator                        | Turbine stop valve red lights are lit and green li  | ghts are NOT lit, turbine             |
|          | cue                                   | stop valve status lights are NOT lit.               |                                       |
|          |                                       |   |                                       |
|          | Notes/Comments                        |   |                                       |
|          | 110tco/Comments                       | •   |                                       |
|          |                                       |   |                                       |
|          |                                       |   |                                       |
|          |                                       |   |                                       |
|          |                                       |   |                                       |
|          |                                       |   |                                       |
| 7        | Manually run back                     | the turnine   | E-0, step 2b RNO                      |
| <u>'</u> | Tivianaany ran baok                   | the tarbine.  |                                       |
|          | STANDARDS                             | TURB MAN pushbutton is depressed, then GV           | EAST and CV                           |
|          | STANDARDS                             | pushbuttons are simultaneously depressed.           | FAST and GV V                         |
|          |                                       | pushbuttons are simultaneously depressed.           |                                       |
|          |                                       |   | (AATT 63 11810AT 63                   |
|          |                                       |   | SAT[] UNSAT[]                         |
|          | · · · · · · · · · · · · · · · · · · · |   |                                       |
|          | Dead simulator                        | Turbine stop valve red lights are lit and green li  | ghts are NOT lit, turbine             |
|          | <u>cue</u>                            | stop valve status lights are NOT lit.               |                                       |
|          |                                       |   |                                       |
|          | Notes/Comments                        |   |                                       |
|          |                                       |   |                                       |
|          |                                       |   |                                       |
|          |                                       |   |                                       |
|          | ,                                     |   |                                       |
|          |                                       |   |                                       |
|          |                                       |   |                                       |
| 8        | Close MSTV's and                      | Bypass Valves.                                      | E-0, step 2b RNO                      |
|          | 10.000 /                              |   |                                       |
|          | CRITICAL STE                          |   | SAT[] UNSAT[]                         |
|          | CRITICAL SIL                          |   | erti [] erterti []                    |
|          |                                       | I DOTALLA DE  | Secretaria de CACO                    |
|          | <u>STANDARDS</u>                      | MSTV App-R fire emergency close pushbutton          | is rotated to EMER                    |
|          |                                       | position and depressed,                             |                                       |
|          |                                       | OR  |                                       |
|          |                                       | CLOSE pushbuttons for all three MSTVs are de        | epressed.                             |
|          |                                       |   |                                       |
|          | Dead simulator                        | Red lights are NOT lit and green lights are lit for | r all three MSTVs.                    |
|          | cue                                   | Annunciator F-G1 is lit.                            |                                       |
|          |                                       |   |                                       |
|          | Notes/Comments                        |   |                                       |
|          | I AOTES/OOMINENTS                     |   |                                       |
|          |                                       |   |                                       |
|          | I                                     |   |                                       |
|          |                                       |   | · · · · · · · · · · · · · · · · · · · |

| STANDARDS   Reheater reset button is pressed.   SAT [] UNSAT []   Dead simulator cue   Red lights are NOT lit and green lights are lit for all reheater FCVs.   Notes/Comments |
|--|
| Dead simulator   Red lights are NOT lit and green lights are lit for all reheater FCVs.  |
| Dead simulator cue   Red lights are NOT lit and green lights are lit for all reheater FCVs.  |
| Dead simulator cue   Red lights are NOT lit and green lights are lit for all reheater FCVs.  |
| Notes/Comments   |
| Notes/Comments   |
| Notes/Comments   |
|  |
|  |
| 0 Verify generator output breaker open. E-0, step 2d   |
| 0 Verify generator output breaker open.   E-0, step 2d   |
| 0 Verify generator output breaker open.   E-0. step 2d   |
| 0 Verify generator output breaker open.   E-0. step 2d   |
| 10 Verify generator output breaker open. E-0, step 2d  |
| 0 Verify generator output breaker open. E-0, step 2d   |
| -  |
|  |
| SAT[] UNSAT[]  |
|  |
| STANDARDS Generator output breaker is verified NOT open.   |
| D. L. L. LO 40 APALIS Planta and Bull D. NOT P.  |
| Dead simulator G-12 red light is lit and green light is NOT lit.   |
| <u>cue</u>   |
|  |
| Notes/Comments   |
| Notes/Comments   |
|  |
|  |
|  |

| Manually open C            | G-12 and exciter field breaker.                                 | E-0, step 2d RN              |
|----------------------------|---|------------------------------|
| CRITICAL ST                | EP  | SAT[] UNSA                   |
| <u> </u>                   |   |                              |
| STANDARDS                  | G-12 control switch is placed in TRIP switch is placed in TRIP. | and exciter field breaker co |
|                            | switch is placed in TDID  |                              |
|                            | Switch is placed in TKIF.                                       |                              |
| ···                        | Switch is placed in TRIF.                                       |                              |
|                            | : Inform candidate that the team will comp                      | lete verification of immedi  |
| Notes/Comments<br>actions. |   | lete verification of immed   |
|                            |   | lete verification of immed   |
|                            |   | lete verification of immed   |

## >>>> END OF EVALUATION <

| <b>STOP</b> | TIME |  |
|-------------|------|--|
|             |      |  |

## SIMULATOR, LABORATORY, IN--PLANT SETUP (If Required)

## SIMULATOR SETUP

## JOB PERFORMANCE MEASURE R475 (MOD)

## **TASK**

Perform the immediate operator actions in response to a continuous uncontrolled rod motion (1-AP-1.1) along with failure of turbine to trip and G-12 to open automatically.

## **CHECKLIST**

| Recall IC for 100% power (IC-165)   |
|---|
| Enter malfunction RD07, delay time = 10, trigger = 1; Switch overrides: CNTRL_ROD_MAN, override = OFF, trigger = none, CNTRL_ROD_AUTO, override = OFF, trigger = none.  |
| <ul> <li>Block reactor from automatically tripping:</li> <li>Remote functions – rod control, RD32 &amp; RD38, delay time = 0, trigger = none</li> <li>Remote function – SSPS, AMSAC_DEFEAT = true, delay time = 0, trigger = none</li> </ul>  |
| <ul> <li>Prevent turbine from tripping:</li> <li>TU02, override = true, delay time = 0, trigger = none</li> <li>TU03, override = true, delay time = 0, trigger = none</li> <li>TMP3_STOP, override = OFF, delay time = 0, ramp = 0, trigger = none</li> <li>TMP3_LOCK, override = OFF, delay time = 0, ramp = 0, trigger = none</li> <li>TURBINE_MAN, override = OFF, delay time = 0, ramp = 0, trigger = none</li> </ul> |
| <ul> <li>Prevent generator output breaker (and switchyard breakers) from opening:</li> <li>GMG12TRIP_FAIL, remote value = trip, delay time = 0, trigger = none</li> </ul>   |
| Prevent MSTVs from auto-closure: MON button, then msstmflow_k1(1)(2)(3)(4)(5)(6) = -10  |
| Go to RUN and immediately implement malfunction RD07.   |

# Dominion North Anna Power Station JOB PERFORMANCE MEASURE EVALUATION

#### **OPERATOR PROGRAM**

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## **INITIAL CONDITIONS**

Unit 1 is at 100% power.

The previous shift experienced problems with rod control.

I&C desires rod control to remain in AUTO during troubleshooting.

## **INITIATING CUE**

Assist I&C as necessary in troubleshooting rod control system problems.

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# Dominion North Anna Power Station JOB PERFORMANCE MEASURE EVALUATION

## **OPERATOR PROGRAM**

## **R475 (MOD)**

| 7 | Ά | S | K |
|---|---|---|---|
|   |   |   |   |

Perform the immediate operator actions in response to a continuous uncontrolled rod motion (1-AP-1.1).

#### **TASK STANDARDS**

Immediate actions of 1-AP-1.1 were performed from memory

Immediate actions of 1-E-0, "Reactor Trip and Safety Injection" were performed from memory.

## **K/A REFERENCE:**

001-AA1.01 (3.5/3.2)

## **ALTERNATE PATH:**

1-E-0, Reactor Trip or Safety Injection.

## **TASK COMPLETION TIMES**

| Validation Time | e = 8 minutes | Start Time = |
|-----------------|---------------|--------------|
| Actual Time =   | minutes       | Stop Time =  |

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## PERFORMANCE EVALUATION

| Rating                          | []SATISFACTORY                          | [ ] UNSATISFACTORY |
|---------------------------------|---|--------------------|
| Candidate (Print)               |   |                    |
| Evaluator (Print)               |   |                    |
| Evaluator's Signature /<br>Date |   |                    |
| EVALUATOR'S COMMENTS            |   |                    |
| <u> LVALGATOR O GOMMENTO</u>    |   |                    |
|                                 | , |                    |
|                                 |   |                    |

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## Dominion North Anna Power Station

## JOB PERFORMANCE MEASURE (Evaluation)

#### **OPERATOR PROGRAM**

R475 (MOD)

### READ THE APPLICABLE INSTRUCTIONS TO THE CANDIDATE

#### Instructions for Simulator JPMs

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

## **INITIAL CONDITIONS**

Unit is at 100% steady-state operation.

The previous shift experienced problems with rod control.

I&C desires rod control to remain in AUTO during troubleshooting.

## **INITIATING CUE**

Assist I&C as necessary in troubleshooting rod control system problems.

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## TOOLS AND EQUIPMENT

None

|                                       | MANCE STEPS  |                       |
|---------------------------------------|--|-----------------------|
| STA                                   | ART TIME   |                       |
| · · · · · · · · · · · · · · · · · · · |  | ·                     |
| 1                                     | Place the control rod BANK SELECTOR switch to MANUAL.  | AP-1.1, step 1        |
|                                       | CRITICAL STEP  | SAT[] UNSAT[]         |
|                                       | STANDARDS BANK SELECTOR switch is placed in MANU   | JAL.                  |
|                                       |  |                       |
|                                       | Notes/Comments: Malfunction will occur 10 seconds after simulat  | tor is placed in RUN  |
|                                       | Notes/Comments: Malfunction will occur 10 seconds after simulat  | tor is placed in RUN. |
|                                       | Notes/Comments: Malfunction will occur 10 seconds after simulat  | tor is placed in RUN. |
|                                       | Notes/Comments: Malfunction will occur 10 seconds after simulat  | tor is placed in RUN. |
|                                       | Notes/Comments: Malfunction will occur 10 seconds after simulat  | tor is placed in RUN. |
| 2                                     | Notes/Comments: Malfunction will occur 10 seconds after simulated and the second and t | or is placed in RUN.  |
| 2                                     | Verify that rod motion has stopped.  |                       |
| 2                                     |  |                       |
| 2                                     | Verify that rod motion has stopped.  | AP-1.1, step 2        |
| 2                                     | Verify that rod motion has stopped.  |                       |
| 2                                     | Verify that rod motion has stopped.  | AP-1.1, step 2        |

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Notes/Comments

|   |   | · · · · · · · · · · · · · · · · · · ·                              | and E-0, step 1                   |
|---|---|--|-----------------------------------|
|   | CRITICAL STE  | P  | SAT[] UNSAT[]                     |
|   | STANDARDS   | Either reactor trip switch is placed in                            | TRIP.                             |
|   | m - I - Constant                                    | LD-d links on NOT lit and seem link                                | to one lit for both register twin |
|   | Dead simulator cue                                  | Red lights are NOT lit and green ligh breakers.                    | nts are lit for both reactor trip |
|   | Nata a /Campananta                                  |  |                                   |
|   | Notes/Comments                                      |  |                                   |
|   |   |  |                                   |
|   |   |  |                                   |
|   |   |  |                                   |
|   | T   |  | IF 0, etcn 20                     |
| 4 | Manually trip turbi                                 |  | E-0, step 2a                      |
|   | <u>STANDARDS</u>                                    | Both turbine trip pushbuttons are sin                              | nultaneously depressed.           |
|   |   |  | SAT[] UNSAT[]                     |
|   |   |  |                                   |
|   |   |  |                                   |
|   | Notes/Comments                                      |  |                                   |
|   | Notes/Comments                                      |  |                                   |
|   | Notes/Comments                                      | ·  |                                   |
|   | Notes/Comments                                      | · · · · · · · · · · · · · · · · · · ·                              |                                   |
|   |   |  |                                   |
| 5 |   | top valves are closed.   | E-0, step 2b                      |
| 5 |   | top valves are closed.    Turbine stop valves are verified still o |                                   |
| 5 | Verify all turbine s                                |  | open.                             |
| 5 | Verify all turbine s                                | Turbine stop valves are verified still o                           | open.  SAT[] UNSAT[]              |
| 5 | Verify all turbine s STANDARDS  Dead simulator      | Turbine stop valves are verified still of                          | open. SAT[] UNSAT[]               |
| 5 | Verify all turbine s  STANDARDS  Dead simulator cue | Turbine stop valves are verified still o                           | open.  SAT[] UNSAT[]              |
| 5 | Verify all turbine s STANDARDS  Dead simulator      | Turbine stop valves are verified still of                          | open. SAT[] UNSAT[]               |
| 5 | Verify all turbine s  STANDARDS  Dead simulator cue | Turbine stop valves are verified still of                          | open. SAT[] UNSAT[]               |

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| 6       | Place both EHC pu | imps in PTL.  | E-0, step 2b RNO          |
|---------|-------------------|---|---------------------------|
|         |                   |   |                           |
|         | STANDARDS         | Both EHC pumps are placed in Pull-To-Lock.  |                           |
|         |                   | <del></del>   |                           |
|         |                   |   | SAT[] UNSAT[]             |
|         |                   |   |                           |
|         | Dead simulator    | Turbine stop valve red lights are lit and green li  | ghts are NOT lit, turbine |
|         | cue               | stop valve status lights are NOT lit.   | 9                         |
|         |                   | Joseph Valle Control of the Control |                           |
|         | N - 10            |   |                           |
|         | Notes/Comments    |   |                           |
|         |                   |   |                           |
|         |                   |   |                           |
|         |                   |   |                           |
|         |                   |   |                           |
|         |                   |   | •                         |
| 7       | Manually mun hook | the turking   | E-0, step 2b RNO          |
| 7       | Manually run back | the turbine.  | E-0, step 25 KNO          |
|         |                   |   |                           |
|         | <u>STANDARDS</u>  | TURB MAN pushbutton is depressed, then GV   | FAST and GV ↓             |
|         |                   | pushbuttons are simultaneously depressed.   |                           |
|         |                   |   |                           |
|         |                   |   | SAT[] UNSAT[]             |
|         |                   |   |                           |
|         | Dead simulator    | Turbine stop valve red lights are lit and green li  | ghts are NOT lit, turbine |
|         | cue               | stop valve status lights are NOT lit.   |                           |
|         |                   | •   |                           |
|         | Notes/Comments    |   |                           |
|         | Notes/Comments    |   |                           |
|         |                   |   |                           |
|         |                   |   |                           |
|         |                   |   |                           |
|         |                   |   |                           |
|         |                   |   |                           |
| 8       | Close MSTV's and  | Bypass Valves   | E-0, step 2b RNO          |
| <u></u> | Close Met V 3 and | Dypass valves.  | L 0, 0.0P L5              |
|         | CRITICAL STE      |   | SAT[] UNSAT[]             |
|         | CRITICAL STE      |   | evi [] ever []            |
|         |                   |   |                           |
|         | <u>STANDARDS</u>  | MSTV App-R fire emergency close pushbutton  | is rotated to EMER        |
|         |                   | position and depressed,   |                           |
|         |                   | OR  | _                         |
|         |                   | CLOSE pushbuttons for all three MSTVs are d   | epressed.                 |
|         |                   |   |                           |
|         | Dead simulator    | Red lights are NOT lit and green lights are lit for   | or all three MSTVs.       |
|         | cue               | Annunciator F-G1 is lit.  |                           |
|         |                   |   |                           |
|         | Notes/Comments    |   |                           |
|         | LAOIGO/COMMINGUIS |   |                           |
|         |                   |   |                           |
|         |                   |   |                           |
|         |                   |   |                           |

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| STANDARDS   Reheater reset button is pressed.  | 9  | Reset reneaters               |   |                       |
|--|----|-------------------------------|---|-----------------------|
| Dead simulator cue    Notes/Comments   |    |                               |   |                       |
| Dead simulator cue   Red lights are NOT lit and green lights are lit for all reheater FCVs.  |    | STANDARDS                     | Reheater reset button is pressed.               |                       |
| Dead simulator cue   Red lights are NOT lit and green lights are lit for all reheater FCVs.  |    |                               |   | CATEL LINCATEL        |
| Notes/Comments    10   Verify generator output breaker open.   E-0, step 2d  |    |                               | •   | SATE UNSATE           |
| Notes/Comments    10   Verify generator output breaker open.   E-0, step 2d  |    | Dead simulator                | Red lights are NOT lit and green lights are lit | for all reheater FCVs |
| Notes/Comments    10   Verify generator output breaker open.   E-0, step 2d  |    |                               | The digite are not a ward grown lighte are in   |                       |
| Verify generator output breaker open.   E-0, step 2d     SAT [] UNSAT []     STANDARDS   Generator output breaker is verified NOT open.     Dead simulator   G-12 red light is lit and green light is NOT lit. |    |                               |   |                       |
| STANDARDS Generator output breaker is verified NOT open.  Dead simulator cue  G-12 red light is lit and green light is NOT lit.  |    | Notes/Comments                |   |                       |
| STANDARDS Generator output breaker is verified NOT open.  Dead simulator cue  G-12 red light is lit and green light is NOT lit.  |    |                               |   | •                     |
| STANDARDS Generator output breaker is verified NOT open.  Dead simulator cue  G-12 red light is lit and green light is NOT lit.  |    |                               |   |                       |
| STANDARDS Generator output breaker is verified NOT open.  Dead simulator cue  G-12 red light is lit and green light is NOT lit.  |    |                               |   |                       |
| STANDARDS Generator output breaker is verified NOT open.  Dead simulator cue  G-12 red light is lit and green light is NOT lit.  |    |                               |   |                       |
| STANDARDS Generator output breaker is verified NOT open.  Dead simulator cue  G-12 red light is lit and green light is NOT lit.  |    |                               |   |                       |
| STANDARDS Generator output breaker is verified NOT open.  Dead simulator cue  G-12 red light is lit and green light is NOT lit.  |    |                               |   |                       |
| STANDARDS Generator output breaker is verified NOT open.  Dead simulator cue  G-12 red light is lit and green light is NOT lit.  |    |                               |   |                       |
| STANDARDS   Generator output breaker is verified NOT open.   Dead simulator   G-12 red light is lit and green light is NOT lit.   cue  | 10 | Verify generator o            | output breaker open.                            | E-0, step 2d          |
| Dead simulator G-12 red light is lit and green light is NOT lit.   | 10 | Verify generator of           | output breaker open.                            |                       |
| Dead simulator G-12 red light is lit and green light is NOT lit.   | 10 | Verify generator o            | output breaker open.                            |                       |
| cue  | 10 |                               |   | SAT[] UNSAT[]         |
| cue  | 10 |                               |   | SAT[] UNSAT[]         |
|  | 10 | STANDARDS                     | Generator output breaker is verified NOT ope    | SAT[] UNSAT[]         |
| Notes/Comments   | 10 | STANDARDS  Dead simulator     | Generator output breaker is verified NOT ope    | SAT[] UNSAT[]         |
| Notes/Comments   | 10 | STANDARDS  Dead simulator     | Generator output breaker is verified NOT ope    | SAT[] UNSAT[]         |
|  | 10 | STANDARDS  Dead simulator     | Generator output breaker is verified NOT ope    | SAT[] UNSAT[]         |
|  | 10 | STANDARDS  Dead simulator cue | Generator output breaker is verified NOT ope    | SAT[] UNSAT[]         |
|  | 10 | STANDARDS  Dead simulator cue | Generator output breaker is verified NOT ope    | SAT[] UNSAT[]         |
|  | 10 | STANDARDS  Dead simulator cue | Generator output breaker is verified NOT ope    | SAT[] UNSAT[]         |

| STANDARDS      | G-12 control switch is placed in TRIP a      | nd exciter field breaker o |
|----------------|--|----------------------------|
|                | switch is placed in TRIP.                    |                            |
| L              |  |                            |
|                |  |                            |
|                |  |                            |
| Notes/Comments | s: Inform candidate that the team will compl | ete verification of immed  |

>>>> END OF EVALUATION <

STOP TIME

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## SIMULATOR, LABORATORY, IN--PLANT SETUP (If Required)

## SIMULATOR SETUP

## JOB PERFORMANCE MEASURE R475 (MOD)

## **TASK**

Perform the immediate operator actions in response to a continuous uncontrolled rod motion (1-AP-1.1) along with failure of turbine to trip and G-12 to open automatically.

## **CHECKLIST**

| Recall IC for 100% power (IC-165)   |
|---|
| Enter malfunction RD07, delay time = 10, trigger = 1; Switch overrides: CNTRL_ROD_MAN, override = OFF, trigger = none, CNTRL_ROD_AUTO, override = OFF, trigger = none.  |
| <ul> <li>Block reactor from automatically tripping:</li> <li>Remote functions – rod control, RD32 &amp; RD38, delay time = 0, trigger = none</li> <li>Remote function – SSPS, AMSAC_DEFEAT = true, delay time = 0, trigger = none</li> </ul>  |
| <ul> <li>Prevent turbine from tripping:</li> <li>TU02, override = true, delay time = 0, trigger = none</li> <li>TU03, override = true, delay time = 0, trigger = none</li> <li>TMP3_STOP, override = OFF, delay time = 0, ramp = 0, trigger = none</li> <li>TMP3_LOCK, override = OFF, delay time = 0, ramp = 0, trigger = none</li> <li>TURBINE_MAN, override = OFF, delay time = 0, ramp = 0, trigger = none</li> </ul> |
| <ul> <li>Prevent generator output breaker (and switchyard breakers) from opening:</li> <li>GMG12TRIP_FAIL, remote value = trip, delay time = 0, trigger = none</li> </ul>   |
| Prevent MSTVs from auto-closure: MON button, then msstmflow_k1(1)(2)(3)(4)(5)(6) = -10  |
| Go to RUN and immediately implement malfunction RD07.   |

Dominion
North Anna Power Station
JOB PERFORMANCE MEASURE EVALUATION

**OPERATOR PROGRAM** 

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## **INITIAL CONDITIONS**

Unit one is in mode 4 at 285°F

Residual Heat Removal System is in service

Reactor coolant pumps "A" and "C" are in operation

Independent RCS level indicator 1-RC-LI-105 is tagged-out for maintenance.

PRZR level has just begun decreasing

## **INITIATING CUE**

You are requested to respond to a shutdown LOCA.

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# Dominion North Anna Power Station JOB PERFORMANCE MEASURE EVALUATION

## **OPERATOR PROGRAM**

## R693

| Ţ | Α | S | K |
|---|---|---|---|
|   |   |   |   |

Respond to a shutdown LOCA in mode 4 (1-AP-17).

## **TASK STANDARDS**

Letdown is isolated and SI flow is established.

## **K/A REFERENCE:**

002-A2.01 (4.3/4.4)

## **ALTERNATE PATH:**

Charging flow is not adequate to maintain PRZR level, SI flow must be aligned.

## **TASK COMPLETION TIMES**

| Validation Time = | 12 minutes | Start Time = |  |
|-------------------|------------|--------------|--|
| Actual Time =     | minutes    | Stop Time =  |  |

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## PERFORMANCE EVALUATION

| Rating                          | []SATISFACTORY | [ ] UNSATISFACTORY |  |
|---------------------------------|----------------|--------------------|--|
| Candidate (Print)               |                |                    |  |
| Evaluator (Print)               |                |                    |  |
| Evaluator's Signature /<br>Date |                |                    |  |
| EVALUATOR'S COMMENTS            |                |                    |  |
|                                 |                | ·                  |  |
|                                 |                |                    |  |

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## Dominion North Anna Power Station

## JOB PERFORMANCE MEASURE (Evaluation)

#### OPERATOR PROGRAM

R693

## READ THE APPLICABLE INSTRUCTIONS TO THE CANDIDATE

#### Instructions for Simulator JPMs

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet! provided you.

### **INITIAL CONDITIONS**

Unit one is in mode 4 at 285°F

Residual Heat Removal System is in service

Reactor coolant pumps "A" and "C" are in operation

Independent RCS level indicator 1-RC-LI-105 is tagged-out for maintenance.

PRZR level has just begun decreasing

#### **INITIATING CUE**

You are requested to respond to a shutdown LOCA.

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## TOOLS AND EQUIPMENT

None

| PERFURIN | ANCE STEPS          |   |                     |
|----------|---------------------|---|---------------------|
| STAF     | RT TIME             | · · ·   |                     |
|          |                     |   |                     |
|          |                     | •   |                     |
| 1        | Check at least one  | charging pump running.                                      | Procedure Step 1a   |
|          | STANDARDS           | "A" charging pump is verified running.                      |                     |
|          |                     |   | SAT[] UNSAT[]       |
|          | Dead simulator cue  | "A" charging pump motor ammeter indicates 70 indicate zero. | 0, "B" and "C" both |
|          | Notes/Comments      |   |                     |
|          |                     |   |                     |
|          |                     |   |                     |
| 2        | Adjust charging flo | ow as necessary to maintain pressurizer level.              | Procedure Step 1b   |
| •        | CRITICAL STE        | P   | SAT[] UNSAT[]       |
|          | STANDARDS           | Normal charging FCV-1122 controller output is               | raised              |
|          | Dead simulator cue  | FCV-1122 output is now 100%.                                |                     |
|          | Notes/Comments      |   |                     |
|          |                     |   |                     |

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| 3 | Check letdown va  | lives closed.  | Procedure Step 2a<br>RNO       |
|---|---|--|--------------------------------|
|   | CRITICAL STE  | ≣P   | SAT[] UNSAT[]                  |
|   | STANDARDS   | 1-CH-HCV-1200A, 1200B, and 1200C con<br>CLOSE  | ·                              |
|   |   | 1-CH-LCV-1460A and 1460B control switc   | hes are placed in CLOSE        |
|   | Dead simulator cue  | 1-CH-HCV-1200A, 1200B, and 1200C greater NOT lit. 1-CH-LCV-1460A and 1460B green lights lit.   | -                              |
|   | •   | Closing HCV-1200A, 1200B, 1200C, and eitl  |                                |
|   | the critical step.  |  |                                |
|   | the critical step.  |  |                                |
| 4 |   | down valve closed.   | Procedure Step 2b              |
| 4 |   |  |                                |
| 4 | Check RHR to let  |  | RNO SAT[] UNSAT[]              |
| 4 | Check RHR to let  | <b>EP</b>  | RNO SAT[] UNSAT[] ered to zero |
| 4 | Check RHR to let  CRITICAL STI  STANDARDS  Dead simulator | [1-CH-HCV-1142 controller demand is lower than the controller demand is now the controller demand is now the controller demand is now that the controller demand is not controller demand in the controller demand in the controller demand is not controller demand in the controller demand in the controller demand in the controller demand is not controller demand in the controller demand in the controller demand in the controller demand is not controller demand in the controll | RNO SAT[] UNSAT[] ered to zero |
| 4 | CRITICAL STI  STANDARDS  Dead simulator cue               | [1-CH-HCV-1142 controller demand is lower than the controller demand is now the controller demand is now the controller demand is now that the controller demand is not controller demand in the controller demand in the controller demand is not controller demand in the controller demand in the controller demand in the controller demand is not controller demand in the controller demand in the controller demand in the controller demand is not controller demand in the controll | RNO SAT[] UNSAT[] ered to zero |

| 5 | Check loop drain va | alves closed.   | Procedure Step 2c  |
|---|---------------------|---|--|
|   | STANDARDS           | Loop drain valves 1-RC-HCV-1557A, 1557B ar closed.  | nd 1557C are verified  |
|   |                     |   | SAT[] UNSAT[]  |
|   | Dead simulator cue  | 1-RC-HCV-1557A, 1557B, and 1557C green lig<br>lights are NOT lit.   | hts are NOT lit and red  |
|   | Notes/Comments:     | · · · · · · · · · · · · · · · · · · ·   |  |
|   |                     |   |  |
|   |                     |   |  |
| 6 | Verify 1-RH-36 and  | 1-RH-34 are locked closed.  | Procedure Step 2d  |
|   | STANDARDS           | 1-RH-36 and 1-RH-34 are verified locked close   | d  |
|   |                     |   | SAT[] UNSAT[]  |
|   | Examiner's cue      | Review the JPM initial conditions.  |  |
|   | Notes/Comments: If  | applicant requests status of 1-RH-36 and 1-RH-  | 34, read the above cue.  |
|   |                     |   |  |
|   |                     |   |  |
| 7 | Close any known R   | CS drain paths.   | Procedure Step 2e  |
|   | STANDARDS           | All known RCS drain paths are verified closed.  |  |
|   |                     |   | SAT[] UNSAT[]  |
|   | Examiner's cue      | There are no other known RCS drain paths.   |  |
|   | Notes/Comments:     |   |  |
|   |                     |   |  |
|   | 6                   | Dead simulator cue     Notes/Comments:     STANDARDS     Examiner's cue     Notes/Comments: If     7   Close any known R     STANDARDS     Examiner's cue     STANDARDS | STANDARDS   Loop drain valves 1-RC-HCV-1557A, 1557B ar closed. |

| 8           | Evacuate all unnec                        | cessary personnel from containment.   | Procedure Step 3 |
|-------------|---|---|------------------|
|             | STANDARDS                                 | Containment evacuation alarm is sounded and used to direct all unnecessary personnel to eva |                  |
|             |   |   | SAT[] UNSAT[]    |
|             | Notes/Comments                            |   |                  |
|             |   |   |                  |
| <del></del> |   |   | 15               |
| 9           | Verify that indeper<br>RC-LI-105 is energ | dent Reactor Coolant System level indicator 1-<br>gized.                                    | Procedure Step 4 |
|             | STANDARDS                                 | RCS independent level indicator is verified de-   | energized.       |
|             |   |   | SAT[] UNSAT[]    |
|             | Examiner's cue                            | Review the JPM initial conditions.  |                  |
|             | Notes/Comments: I                         | f candidate requests status of 1-RC-LI-105, read  | the above cue.   |
|             |   |   |                  |
|             |   |   |                  |
|             |   |   |                  |
| 10          | Determine mode o                          | f operation at start of event – Mode 4  | Procedure Step 5 |
|             | STANDARDS                                 | Unit is verified in mode 4.   |                  |
|             | •   |   | SAT[] UNSAT[]    |
|             | Examiner's cue                            | Review the JPM initial conditions.  |                  |
|             | Notes/Comments: I                         | f candidate requests unit mode, read the above o  | cue.             |
|             |   |   |                  |

| 11 | Check if RHR pur              |   |                                       |
|----|-------------------------------|---|---------------------------------------|
|    | STANDARDS                     | RHR pump is verified running normally.  |                                       |
|    |                               |   | SAT[] UNSAT[]                         |
|    | Dead simulator cue            | "A" RHR pump amps are stable at 42 and RI gpm.  | HR flow is stable at 3,50             |
|    | Notes/Comments                |   |                                       |
|    |                               |   |                                       |
|    |                               |   |                                       |
|    |                               |   |                                       |
|    |                               | ·   |                                       |
| 12 | Check if charging             | flow is adequate  | Procedure Step 7                      |
| 12 | Check if charging  STANDARDS  | flow is adequate PRZR level is verified less than 21% and de  | · :                                   |
| 12 |                               |   | · · · · · · · · · · · · · · · · · · · |
| 12 |                               |   | creasing.                             |
| 12 | STANDARDS  Dead simulator cue | PRZR level is verified less than 21% and december of the less than 21% and december of the less than 21% and decreasing | creasing.                             |
| 12 | STANDARDS  Dead simulator cue | PRZR level is verified less than 21% and dea  | creasing.                             |

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| 13 | Verify only one ch | arging pump running                   | Procedure Step 11a                |
|----|--------------------|---------------------------------------|-----------------------------------|
|    |                    |                                       |                                   |
|    | <u>STANDARDS</u>   | Charging pumps are observed and only  | one is verified running.          |
| •  |                    |                                       | SAT[] UNSAT[]                     |
|    |                    |                                       | SATE ONSATE                       |
|    | Dead simulator     | "A" charging pump motor ammeter indic | cates 92. "B" and "C" both        |
|    | cue                | indicate zero.                        | 30.00 02, 2 0.10 0 000.           |
|    |                    |                                       |                                   |
|    | Notes/Comments     |                                       |                                   |
|    |                    |                                       |                                   |
|    | •                  |                                       |                                   |
|    |                    |                                       |                                   |
|    |                    |                                       |                                   |
|    |                    |                                       |                                   |
|    |                    |                                       |                                   |
| 14 | Open charging nu   | mp suction valves from RWST           | Procedure Step 11b                |
| 14 | Open charging pu   | mp suction valves from 13401          | Troccadio otop 115                |
|    | STANDARDS          | 1-CH-MOV-1115B and 1115D are verifi   | ied open.                         |
|    | 01711071130        | 1 011 1100 1 11100 010 100            |                                   |
|    |                    |                                       | SAT[] UNSAT[]                     |
|    |                    |                                       |                                   |
|    | Dead simulator     | MOV-1115B and 1115D red lights are b  | ooth lit and green lights are NOT |
|    | cue                | lit.                                  |                                   |
|    |                    |                                       |                                   |
|    | Notes/Comments:    | •                                     |                                   |
|    |                    | •                                     |                                   |
|    |                    | •                                     | ·                                 |
|    |                    |                                       |                                   |
|    |                    |                                       |                                   |
|    |                    |                                       |                                   |
|    |                    |                                       |                                   |
| 15 | Close charging pu  | mp suction valves from VCT            | Procedure Step 11c                |
| L  |                    |                                       |                                   |
|    | STANDARDS          | 1-CH-MOV-1115C and 1115E are verif    | ied closed.                       |
|    |                    |                                       |                                   |
|    |                    |                                       | SAT[] UNSAT[]                     |
|    |                    | 1                                     | I II Providend Politica and NOT   |
|    | Dead simulator     | MOV-1115B and 1115D green lights ar   | e both lit and red lights are NO  |
|    | cue                | lit.                                  |                                   |
|    | N 10               |                                       |                                   |
|    | Notes/Comments:    |                                       |                                   |
|    |                    |                                       |                                   |
|    |                    |                                       |                                   |
|    |                    |                                       |                                   |

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| 16  | Close BIT recirc v            | alves  | Procedure Step 11d   |
|-----|-------------------------------|--|--|
|     | CRITICAL STE                  | P  | SAT[] UNSAT[]  |
|     |                               | <u> </u>   | MAR. 2004 (2011)   |
|     | STANDARDS                     | 1-SI-TV-1884A, 1884B and 1884C CLC   | OSE pushbuttons are depresse   |
|     | Dead simulator cue            | TV-1884A, 1884B, and 1884C green lig<br>NOT lit.                                 | ghts are all lit and red lights are  |
| ı   | ,                             | O)   |  |
|     | Notes/Comments:               | Closing either TV-1884A or 1884C satisfie  | es the critical step.  |
|     |                               |  |  |
|     |                               |  |  |
| l   |                               |  |  |
|     |                               |  |  |
| [47 | Onen RIT outlet w             |  | Procedure Step 11e   |
| 17  | Open BIT outlet va            | alves.   | Procedure Step 11e   |
| 17  | Open BIT outlet va            |  | Procedure Step 11e   |
| 17  | CRITICAL STE                  | P  |  |
| 17  |                               |  | SAT[] UNSAT[]  |
| 17  | CRITICAL STE                  | OPEN pushbuttons for 1-SI-MOV-18670  | SAT[] UNSAT[] C and 1867D are depressed.                                   |
| 17  | CRITICAL STE                  | OPEN pushbuttons for 1-SI-MOV-1867   | SAT[] UNSAT[] C and 1867D are depressed.                                   |
|     | STANDARDS  Dead simulator cue | OPEN pushbuttons for 1-SI-MOV-1867  1-SI-MOV-1867C and 1867D red lights NOT lit. | SAT [] UNSAT [] C and 1867D are depressed. are both lit and green lights a |
|     | STANDARDS  Dead simulator cue | OPEN pushbuttons for 1-SI-MOV-18670  | SAT [] UNSAT [] C and 1867D are depressed. are both lit and green lights a |
|     | STANDARDS  Dead simulator cue | OPEN pushbuttons for 1-SI-MOV-1867  1-SI-MOV-1867C and 1867D red lights NOT lit. | SAT [] UNSAT [] C and 1867D are depressed. are both lit and green lights a |
|     | STANDARDS  Dead simulator cue | OPEN pushbuttons for 1-SI-MOV-1867  1-SI-MOV-1867C and 1867D red lights NOT lit. | SAT [] UNSAT [] C and 1867D are depressed. are both lit and green lights a |

| 18 | Open BIT inlet val            | ves.  | Procedure Step 11f                        |
|----|-------------------------------|---|---|
|    |                               |   |   |
|    | CRITICAL STE                  | <b>∃P</b>   | SAT[] UNSAT[]                             |
|    |                               |   |   |
| •  | <u>STANDARDS</u>              | OPEN pushbuttons for 1-SI-MOV-1867  | A and 1867B are depressed.                |
|    | [B ]                          | 4 OLMOV 40074 and 40070 and links   | - 1   1 1   1 -   1                       |
|    | Dead simulator                | 1-SI-MOV-1867A and 1867B red lights a NOT lit.  | are both lit and green lights are         |
|    | cue                           | NOT III.  |   |
|    | Notes/Comments:               | Opening either MOV-1867A or 1867B sati  | sfies the critical step                   |
|    | Notes/Comments.               | Copering Citrici MOV-100774 of 100715 34th  | ones the orthodrotep.                     |
|    |                               |   |   |
|    |                               |   |   |
|    |                               |   |   |
|    |                               |   |   |
|    |                               |   |   |
|    |                               |   |   |
|    |                               |   |   |
| 19 | Close normal char             | rging line isolation valves.  | Procedure Step 11g                        |
| 19 |                               |   |   |
| 19 | Close normal char             |   | Procedure Step 11g                        |
| 19 | CRITICAL STE                  | P   | SAT[] UNSAT[]                             |
| 19 |                               | 1-CH-MOV-1289A and 1289B control sv   | SAT[] UNSAT[]                             |
| 19 | CRITICAL STE                  | P   | SAT[] UNSAT[]                             |
| 19 | STANDARDS                     | 1-CH-MOV-1289A and 1289B control sv<br>CLOSE position.  | SAT[] UNSAT[] witches are placed in the   |
| 19 | STANDARDS  Dead simulator     | 1-CH-MOV-1289A and 1289B control sv   | SAT[] UNSAT[] witches are placed in the   |
| 19 | STANDARDS                     | 1-CH-MOV-1289A and 1289B control sv<br>CLOSE position.  | SAT[] UNSAT[] witches are placed in the   |
| 19 | STANDARDS  Dead simulator cue | 1-CH-MOV-1289A and 1289B control so<br>CLOSE position.<br>1-CH-MOV-1289A and 1289B green ligh<br>NOT lit. | SAT [] UNSAT [] witches are placed in the |
| 19 | STANDARDS  Dead simulator cue | 1-CH-MOV-1289A and 1289B control sv<br>CLOSE position.  | SAT [] UNSAT [] witches are placed in the |
| 19 | STANDARDS  Dead simulator cue | 1-CH-MOV-1289A and 1289B control so<br>CLOSE position.<br>1-CH-MOV-1289A and 1289B green ligh<br>NOT lit. | SAT [] UNSAT [] witches are placed in the |

|   | 20          | Close charging pump recirc                            | o vaives.  | Procedure Step 11n      |
|---|-------------|---|--|-------------------------|
|   |             | CRITICAL STEP   |  | SAT[] UNSAT[]           |
|   |             |   | MOV-1275A, 1275B, and 1275C control s<br>OSE position. | witches are placed in   |
|   |             |   | MOV-1275A, 1275B, and 1275C green lig<br>are NOT lit.  | hts are all lit and red |
|   |             | Notes/Comments  |  |                         |
|   |             |   |  |                         |
|   |             |   |  | +                       |
|   | 21          | Actuate phase A isolation                             |  | Procedure Step 12       |
|   |             | CRITICAL STEP   |  | SAT[] UNSAT[]           |
| - |             | STANDARDS Either                                      | control switch for phase A isolation is place          | ced in INITIATE         |
|   |             | Dead simulator Annun                                  | ciator K-H7 is lit.                                    |                         |
|   |             | Notes/Comments:                                       |  |                         |
|   |             |   |  |                         |
|   | · · · · · · |   |  |                         |
|   |             |   |  |                         |
|   | 22          | Evaluate the need to imple<br>Controlling Procedure." | ment EPIP-1.01, "Emergency Manager                     | Procedure Step 13       |
|   |             |   |  | SAT[] UNSAT[]           |
|   |             | Examiner's cue The St                                 | ation Emergency Manager has initiated E                | PIP-1.01.               |
|   |             | Notes/Comments  |  |                         |
|   |             |   |  |                         |
|   |             |   |  |                         |

| 23 | Check if RCPs mu    | st be stopped   | Procedure Step 14a            |
|----|---------------------|---|-------------------------------|
|    | STANDARDS           | RCP #1 seal ΔP indications are verified less                                    | s than 200 psid.              |
|    | <u> </u>            | THO W. COU. EL MICHOLIO CHO VOLINIOU TOCC                                       |                               |
|    |                     |   | SAT[] UNSAT[]                 |
|    | Dead simulator      | RCP seal ΔP is less than 200 psid on the ru                                     | nning RCPs.                   |
|    | cue                 |   |                               |
|    | Notes/Comments      |   |                               |
|    |                     |   |                               |
|    |                     |   |                               |
|    |                     |   |                               |
|    |                     | ·   |                               |
| 24 | Stop the affected I | RCPs.   | Procedure Step 14b            |
|    | CRITICAL STE        |   | SAT[] UNSAT[]                 |
|    | CHITICAL OIL        |   |                               |
|    | STANDARDS           | Control switches for the "A" and "C" reactor in AUTO-AFTER-STOP or PULL-TO-LOCK |                               |
|    |                     |   |                               |
|    | Dead simulator cue  | "A" and "C" RCP motor ammeters indicate z                                       | ero.                          |
|    |                     |   |                               |
|    | Notes/Comments:     | If RCP seal delta-P remains above 200 psid, t                                   | his step is NOT critical.     |
|    |                     |   |                               |
|    |                     |   |                               |
|    |                     |   |                               |
|    |                     |   |                               |
| 25 | Verify the alignme  | nt of the low-head safety injection pump  | Procedure Step 15             |
|    | STANDARDS           | LHSI suction and discharge valves are verif                                     | ied open.                     |
|    |                     |   |                               |
|    |                     |   | SAT[] UNSAT[]                 |
|    | Dead simulator      | 1-SI-MOV-1862A and 1864A red lights are I                                       | both lit and green lights are |
|    | <u>cue</u>          | NOT lit.  |                               |
|    | Notes/Comments      |   |                               |
|    |                     |   |                               |
|    |                     |   |                               |

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| 26 | Check if low-nead             | d safety injection flow is required   | Procedure Step 1  |
|----|-------------------------------|---|---|
|    | STANDARDS                     | RCS subcooling is verified > 35°F.  |   |
|    |                               |   | SAT[] UNSAT[  |
|    | Dead simulator cue            | RCS subcooling is 159°F.  |   |
|    | Notes/Comments                |   |   |
|    |                               |   |   |
|    |                               |   |   |
|    |                               |   |   |
| 27 | Verify adequate s             | safety injection flow   | Procedure Step 1  |
| 27 | Verify adequate s             | safety injection flow  RVLIS dynamic indication is verified > 6 RVLIS full-range indication is verified 51              | 7% (2 RCPs running) OR  |
| 27 |                               | RVLIS dynamic indication is verified > 6  | 7% (2 RCPs running) OR  |
| 27 |                               | RVLIS dynamic indication is verified > 6  | 7% (2 RCPs running) OR<br>1% (all RCPs secured).<br>SAT [] UNSAT [<br>running) OR |
| 27 | STANDARDS  Dead simulator cue | RVLIS dynamic indication is verified > 6 RVLIS full-range indication is verified 51 RVLIS dynamic indicates 59% (2 RCPs | 7% (2 RCPs running) OR<br>1% (all RCPs secured).<br>SAT [] UNSAT [<br>running) OR |
| 27 | STANDARDS  Dead simulator     | RVLIS dynamic indication is verified > 6 RVLIS full-range indication is verified 51 RVLIS dynamic indicates 59% (2 RCPs | 7% (2 RCPs running) OR<br>1% (all RCPs secured).<br>SAT [] UNSAT [<br>running) OR |

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| 28                                    | Check if core exit       | temperatures are stable                         | Procedure Step 17b |
|---------------------------------------|--------------------------|---|--------------------|
|                                       | STANDARDS                | Core-exit TCs are verified stable or decreasing | na.                |
|                                       | OTTAIN TABLE             | Colo Gille For and Formed States C. Scarces.    |                    |
|                                       |                          |   | SAT[] UNSAT[]      |
|                                       | Dead simulator cue       | Core-exit TCs are stable.                       |                    |
|                                       | Notes/Comments           |   |                    |
|                                       |                          |   |                    |
|                                       |                          |   |                    |
| ٠                                     |                          |   |                    |
| 29                                    | Check if the Reac stable | tor Coolant System hot-leg temperatures are     | Procedure Step 18  |
|                                       |                          |   | SAT[] UNSAT[]      |
|                                       | Examiner's cue           | Assume that another operator will complete the  | he procedure       |
|                                       |                          |   |                    |
|                                       | Notes/Comments           |   |                    |
| · · · · · · · · · · · · · · · · · · · |                          |   |                    |
|                                       |                          |   |                    |
|                                       |                          |   |                    |

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# SIMULATOR, LABORATORY, IN--PLANT SETUP (If Required)

#### SIMULATOR SETUP

### JOB PERFORMANCE MEASURE R693

#### **TASK**

Respond to a shutdown LOCA in mode 4 (1-AP-17).

#### **CHECKLIST**

| <br>Recall the IC for mode 4 with temperature = 285° F (IC-170)  |
|--|
| <br>Ensure "A" charging pump is running with suction aligned to the volume control tank  |
| <br>Ensure all three letdown orifice HCVs are open   |
| <br>Close CH-217 on PNID   |
| <br>Enter MRC0101_DEG = 0.1  |
| <br>Place simulator in RUN   |
| <br>Place the simulator in FREEZE  |
| <br>After applicant isolates letdown, increase the leak degradation to 0.13.   |
| and the control of th |

# Dominion North Anna Power Station JOB PERFORMANCE MEASURE EVALUATION

#### **OPERATOR PROGRAM**

#### **INITIAL CONDITIONS**

"A" CC pump is running

"B" CC pump is in automatic

Component cooling water is split out between units for on-going engineering evaluation.

Control room annunciator window G-A1, CC SURGE TK HI-LO LEVEL, is lit

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11/30/01

### **INITIATING CUE**

You are requested to respond to a decrease of component cooling water head tank level in accordance with 1-AP-15. This is a time-critical task.

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# Dominion North Anna Power Station JOB PERFORMANCE MEASURE EVALUATION

#### **OPERATOR PROGRAM**

### R707

| <u>TASK</u>   |   |
|---|---|
| Respond to a leak in the Component Cooling Water System (1-AP-15).  |   |
| TASK STANDARDS  |   |
| U-1 CC pumps placed in PTL, charging and seal return isolated, seal injection reduced, and C pump restarted prior to exceeding RCP trip criteria. | C |
| K/A REFERENCE:  |   |
| 008-A2.02 (3.2/3.5)   |   |
| ALTERNATE PATH:   |   |
| N/A   |   |
| TIME CRITICAL:  |   |
| Yes – CC pump must be restarted prior to exceeding RCP trip criteria  |   |
| TASK COMPLETION TIMES   |   |
| Validation Time = 15 minutes Start Time = Actual Time = minutes Stop Time =   |   |

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#### PERFORMANCE EVALUATION

|            | Rating                          | [] SATISFACTORY | [ ] UNSATISFACTORY |                                       |
|------------|---------------------------------|-----------------|--------------------|---------------------------------------|
|            | Candidate (Print)               |                 |                    |                                       |
|            | Evaluator (Print)               |                 |                    | · · · · · · · · · · · · · · · · · · · |
|            | Evaluator's Signature /<br>Date |                 |                    |                                       |
| <u>EVA</u> | LUATOR'S COMMENTS               |                 |                    |                                       |
|            |                                 | ·               |                    |                                       |
|            |                                 |                 |                    |                                       |
|            |                                 |                 |                    |                                       |

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### Dominion North Anna Power Station

## JOB PERFORMANCE MEASURE (Evaluation)

#### **OPERATOR PROGRAM**

R707

#### READ THE APPLICABLE INSTRUCTIONS TO THE CANDIDATE

#### Instructions for Simulator JPMs

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

#### **INITIAL CONDITIONS**

"A" CC pump is running

"B" CC pump is in automatic

Component cooling water is split out between units for on-going engineering evaluation.

Control room annunciator window G-A1, CC SURGE TK HI-LO LEVEL, is lit

#### **INITIATING CUE**

You are requested to respond to a decrease of component cooling water head tank level in accordance with 1-AP-15. This is a time-critical task.

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#### TOOLS AND EQUIPMENT

None

| <u>PER</u> | FORM | ANCE STEPS          |   |                          |
|------------|------|---------------------|---|--------------------------|
|            | STAF | RT TIME             |   |                          |
|            |      |                     |   |                          |
|            |      |                     |   |                          |
|            | 1    | Verify CC head      | tank level is stable or increasing.               | Procedure Step 1         |
|            |      | STANDARDS           | CC head tank level is verified off-scale low.     |                          |
|            | -    |                     |   | SAT[] UNSAT[]            |
|            |      | Dead simulator cue  | CC head tank level indicates off-scale low.       |                          |
|            |      | Notes/Comment       | s   |                          |
|            |      |                     |   |                          |
|            | 2    | Align to refill the | component cooling water head tank.                | Procedure Step 1a<br>RNO |
|            |      | CRITICAL S          | TEP   | SAT[] UNSAT[]            |
|            |      | STANDARDS           | Auxiliary operators are requested to align to re- | fill the CC head tank    |
|            |      | Booth operator cue  | Condensate is being aligned to fill the CC head   | i tank level.            |
|            |      | Notes/Comment       | s   |                          |

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| 3 | Put CC pumps in F                     | PTL  | RNO                       |
|---|---------------------------------------|--|---------------------------|
|   | CRITICAL STE                          | P  | SAT[] UNSAT[]             |
|   | STANDARDS                             | Control switches for 1-CC-P-1A and 1-CC-P-1B       | are placed in PTL         |
|   | Dead simulator                        | CC pump motor ammeters both indicate zero.         |                           |
|   | Notes/Comments                        |  |                           |
|   | Notes/Comments                        |  |                           |
|   |                                       |  |                           |
|   |                                       |  |                           |
| 4 | Locally isolate the Cooling Water Sys | ruptured equipment supplied by the Component stem. | Procedure Step 1b2<br>RNO |
|   | CRITICAL STE                          | P  | SAT[] UNSAT[]             |
|   | STANDARDS                             | Auxiliary operator is requested to locate and iso  | late CC leakage.          |
|   | Booth operator cue                    | Auxiliary operator acknowledges direction to loc   | ate and isolate CC leak.  |
|   | Notes/Comments                        |  |                           |
|   |                                       |  |                           |
|   |                                       |  |                           |

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| 5 | Systems are cros              | init-1 and unit-2 Component Cooling Water is-connected.                                  | Procedure Step 8                      |
|---|-------------------------------|--|---------------------------------------|
|   | STANDARDS                     | CC systems are verified split-out.   |                                       |
|   |                               |  | SAT[] UNSAT[                          |
|   | Examiner's cue                | Review the JPM initial conditions.   |                                       |
|   | Examiner's cue                | Review the 37 W Initial Conditions.  |                                       |
|   | Notes/Comments:               | If candidate requests the status of CC systems   | , read the above cue.                 |
|   |                               |  | •                                     |
|   |                               |  |                                       |
|   |                               |  |                                       |
|   |                               |  |                                       |
|   |                               |  |                                       |
|   |                               |  |                                       |
| 6 | Monitor RCP tem               | peratures.   | Procedure Step 10                     |
| 6 | Monitor RCP tem               | peratures.  RCP temperatures are verified within limits.                                 | Procedure Step 10                     |
| 6 |                               |  |                                       |
| 6 | STANDARDS  Dead simulator     | RCP temperatures are verified within limits.  RCP temperatures are increasing, but no ma | · · · · · · · · · · · · · · · · · · · |
| 6 | STANDARDS                     | RCP temperatures are verified within limits.   | SAT[] UNSAT[                          |
| 6 | STANDARDS  Dead simulator     | RCP temperatures are verified within limits.  RCP temperatures are increasing, but no ma | SAT[] UNSAT[                          |
| 6 | STANDARDS  Dead simulator cue | RCP temperatures are verified within limits.  RCP temperatures are increasing, but no ma | SAT[] UNSAT[                          |

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| 18       |                              |  |                                 |
|----------|------------------------------|--|---------------------------------|
| C        | RITICAL STE                  | P  | SAT[] UNSAT[]                   |
|          |                              |  |                                 |
| S        | TANDARDS                     | 1-CH-HCV-1200B control switch is placed  | Lin CLOSE                       |
| L        | 777 (1712) 11 (120           | 1-CH-LCV-1460A and 1460B control switch  |                                 |
|          |                              |  |                                 |
| · [D     | Dead simulator               | HCV-1200B, LCV-1460A and 1460B gree  | n lights are all lit and red    |
| - 1-     | ue                           | lights are NOT lit.  | gr,to are an in and rea         |
| <u>ٿ</u> |                              | Ingilio di o i i di  |                                 |
| NI.      | otoc/Commonts:               | Closing HCV-1200B, and either 1460A or 14  | ISOB eatisfies the critical sta |
|          | otes/comments.               | Closing HCV-1200B, and either 1400A or 14  | TOOD Satisfies the Childan ste  |
|          |                              |  |                                 |
|          |                              |  | •                               |
|          |                              |  |                                 |
|          |                              |  |                                 |
|          |                              |  |                                 |
|          | Check excess letd            | own secured.   | Procedure Step 12               |
| C        | Check excess letd            | own secured.   | Procedure Step 12               |
|          |                              | own secured.  Excess letdown valves are verified closed.                                 | •                               |
|          | Check excess letd            |  | •                               |
|          |                              |  | •                               |
|          |                              |  |                                 |
| <u>S</u> | STANDARDS                    | Excess letdown valves are verified closed  | SAT[] UNSAT[]                   |
| <u>S</u> | STANDARDS  Dead simulator    |  | SAT[] UNSAT[]                   |
| <u>S</u> | STANDARDS                    | Excess letdown valves are verified closed.  HCV-1201 green light is lit and red light is | SAT[] UNSAT[]                   |
| <u>S</u> | ETANDARDS  Dead simulator ue | Excess letdown valves are verified closed.  HCV-1201 green light is lit and red light is | SAT[] UNSAT[]                   |
| <u>S</u> | STANDARDS  Dead simulator    | Excess letdown valves are verified closed.  HCV-1201 green light is lit and red light is | SAT[] UNSAT[]                   |
| <u>S</u> | ETANDARDS  Dead simulator ue | Excess letdown valves are verified closed.  HCV-1201 green light is lit and red light is | SAT[] UNSAT[]                   |
| <u>S</u> | ETANDARDS  Dead simulator ue | Excess letdown valves are verified closed.  HCV-1201 green light is lit and red light is | SAT[] UNSAT[]                   |
| <u>S</u> | ETANDARDS  Dead simulator ue | Excess letdown valves are verified closed.  HCV-1201 green light is lit and red light is | [SAT[] UNSAT[]                  |

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|   | 9  | Isolate normal char  | Procedure Step 13   |                       |
|---|----|----------------------|---|-----------------------|
|   |    | CRITICAL STE         | 2   | SAT[] UNSAT[]         |
|   |    | STANDARDS            | 1-CH-FCV-1122 controller output is manually d   | ecreased to zero.     |
|   |    | Dead simulator cue   | FCV-1122 controller output is now zero.   |                       |
|   |    | Notes/Comments       |   |                       |
|   |    |                      |   |                       |
|   |    |                      |   |                       |
|   | 10 | Isolate seal water r | eturn.  | Procedure Step 14     |
|   |    | CRITICAL STE         | P   | SAT[] UNSAT[]         |
| - |    | STANDARDS            | 1-CH-MOV-1380 CLOSE pushbutton is depres  | sed.                  |
|   |    | Dead simulator cue   | MOV-1380 green light is lit and red light is NOT  | lit.                  |
|   |    | Notes/Comments       |   |                       |
|   | ٠  |                      |   |                       |
|   |    |                      |   |                       |
|   |    |                      |   |                       |
|   | 11 | Adjust reactor cool  | ant pump seal injection.  | Procedure Step 15     |
|   |    | STANDARDS            | 1-CH-HCV-1186 controller output is decreased injection flow indicates approximately 6 gpm | until each RCP's seal |
|   |    |                      |   | SAT[] UNSAT[]         |
|   |    | Dead simulator cue   | Seal injection to each RCP is approximately 6 g   | gpm.                  |
|   |    | Notes/Comments       |   |                       |
|   |    |                      |   |                       |
|   |    |                      |   |                       |

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| STANDARDS   CC head tank level is verified off-scale low.   | 12 | verify that CC nea | id tank level is stable or increasing.         | Procedure Step 16                     |
|---|----|--------------------|--|---------------------------------------|
| Dead simulator   CC head tank level indicates off-scale low.  |    | STANDARDS          | CC head tank level is verified off-scale low   | · · · · · · · · · · · · · · · · · · · |
| Dead simulator   CC head tank level indicates off-scale low.  |    | STANDARDS          | CC flead talk level is verified off-scale low. |                                       |
| Notes/Comments    Put CC pumps in PTL   |    |                    |  | SAT[] UNSAT[]                         |
| Notes/Comments    Put CC pumps in PTL   |    |                    |  |                                       |
| Notes/Comments  Put CC pumps in PTL  Procedure Step 16a RNO  STANDARDS  Control switches for 1-CC-P-1A and 1-CC-P-1B are verified in PTL  SAT [] UNSAT []  Dead simulator cue  Notes/Comments |    | 1                  | CC head tank level indicates off-scale low.    |                                       |
| Put CC pumps in PTL   Procedure Step 16a RNO  |    |                    |  |                                       |
| STANDARDS   Control switches for 1-CC-P-1A and 1-CC-P-1B are verified in PTL  SAT [] UNSAT []  Dead simulator   CC pump motor ammeters both indicate zero.  Notes/Comments                    |    | Notes/Comments     |  |                                       |
| STANDARDS   Control switches for 1-CC-P-1A and 1-CC-P-1B are verified in PTL  SAT [] UNSAT []  Dead simulator   CC pump motor ammeters both indicate zero.  Notes/Comments                    |    |                    |  |                                       |
| STANDARDS   Control switches for 1-CC-P-1A and 1-CC-P-1B are verified in PTL  SAT [] UNSAT []  Dead simulator   CC pump motor ammeters both indicate zero.  Notes/Comments                    |    |                    |  |                                       |
| STANDARDS   Control switches for 1-CC-P-1A and 1-CC-P-1B are verified in PTL  SAT [] UNSAT []  Dead simulator   CC pump motor ammeters both indicate zero.  Notes/Comments                    |    |                    |  |                                       |
| Dead simulator cue  CC pump motor ammeters both indicate zero.  Notes/Comments  | 13 | Put CC pumps in F  | PTL  |                                       |
| Dead simulator cue  CC pump motor ammeters both indicate zero.  Notes/Comments  |    |                    |  |                                       |
| Dead simulator CC pump motor ammeters both indicate zero.  Cue  Notes/Comments  |    | STANDARDS          | Control switches for 1-CC-P-1A and 1-CC-P-1    | B are verified in PTL                 |
| Notes/Comments  |    |                    |  | SAT[] UNSAT[]                         |
| Notes/Comments  |    | 5                  |  |                                       |
|   |    |                    | CC pump motor ammeters both indicate zero.     |                                       |
|   |    |                    |  |                                       |
|   |    | Notes/Comments     |  |                                       |
|   |    |                    | N.   |                                       |
|   |    | 1                  |  |                                       |

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| 14       | Cooling Water Sy          | e ruptured equipment supplied by the Component stem.   | Procedure Step 16b                    |
|----------|---------------------------|--|---------------------------------------|
|          | STANDARDS                 | Auxiliary operators are verified dispatched to lo  |                                       |
| -        |                           |  | SAT[] UNSAT[]                         |
|          | Booth operator cue        | Auxiliary building operator reports discovering a supply pipe to the gas stripper trim cooler. | and isolating a rupture               |
|          | Notes/Comments            |  |                                       |
| <u> </u> |                           |  |                                       |
|          |                           |  |                                       |
|          |                           |  |                                       |
| 15       | Align to refill the o     | component cooling water head tank.   | Procedure Step 160                    |
| 15       | Align to refill the o     | component cooling water head tank.  Auxiliary operators are verified aligning to refill t      | RNO                                   |
| 15       |                           | •  | RNO                                   |
| 15       |                           | •  | he CC head tank.                      |
| 15       | STANDARDS  Booth operator | Auxiliary operators are verified aligning to refill to   | RNO the CC head tank.  [SAT[] UNSAT[] |

| 16 | When component step 2. | cooling water head tank level is restored, go to | Procedure Step 16d<br>RNO |
|----|------------------------|--|---------------------------|
|    | <u>STANDARDS</u>       | CC head tank level is verified on-scale.         |                           |
|    |                        |  | SAT[] UNSAT[]             |
|    | Dead simulator cue     | CC head tank level indicates 10% and increas     | ing.                      |
|    | Notes/Comments         |  |                           |
|    |                        |  |                           |
|    |                        |  |                           |
|    | ·                      |  |                           |
| 17 | Verify that at least   | one unit-1 CC pump is running.                   | Procedure Step 2          |
|    | STANDARDS              | Control switches for 1-CC-P-1A and 1-CC-P-1      | B are verified in PTL     |
|    |                        |  | [SAT[] UNSAT[]            |
|    | Dead simulator cue     | CC pump motor ammeters both indicate zero.       |                           |
|    |                        |  |                           |
|    | Notes/Comments         |  |                           |

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| Ľ        | .0 | Start a unit-1 CC pump. |   | RNO                                     |
|----------|----|-------------------------|---|---|
|          |    | CRITICAL STE            | P   | SAT[] UNSAT[]                           |
|          |    | STANDARDS               | Control switch for 1-CC-P-1A or 1B is placed in | AUTO-AFTER-START                        |
|          |    | Dead simulator cue      | CC pump motor ammeter pegged high, then de      | creased to 55 amps.                     |
|          |    | Notes/Comments          |   |   |
|          |    |                         |   |   |
| [7       | 9  | Check running CC        | pump amps stable.                               | Procedure Step 3                        |
|          |    | STANDARDS               | CC pump motor ammeter is verified stable        | , |
|          |    |                         |   | SAT[] UNSAT[]                           |
|          |    | Dead simulator cue      | CC pump motor ammeter is stable at 55 amps.     |   |
|          |    | Notes/Comments          |   |   |
| <u> </u> |    |                         |   |   |
|          |    |                         |   | Deceding Stan 4                         |
| [2       | 20 | Verify CC flow is n     |   | Procedure Step 4                        |
|          |    | STANDARDS               | CC flow is verified stable.                     |   |
|          |    | i                       |   | SAT[] UNSAT[]                           |
|          |    | Dead simulator<br>cue   | CC flow is stable at approximately 3,500 gpm p  | er heat exchanger.                      |
|          |    | Notes/Comments          |   |   |
|          |    |                         |   |   |

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| 21  | pressures are nor  | mal.  | Procedure Step 5 |
|-----|--------------------|---|------------------|
|     | STANDARDS          | Auxiliary operator is requested to check CCHX   | K delta-Ps.      |
|     |                    |   | SAT[] UNSAT[]    |
|     | Booth operator cue | Auxiliary building operator reports that the sen pressure across the component cooling water PSID |                  |
|     | Notes/Comments     |   |                  |
|     |                    |   |                  |
|     |                    |   |                  |
|     |                    |   |                  |
| 22  | Restore equipmen   | t to normal.  | Procedure Step 6 |
|     | <u>STANDARDS</u>   | Attachment 2 is initiated.  |                  |
|     |                    |   | SAT[] UNSAT[]    |
|     | Examiner's cue     | Assume that another operator will complete th   | e procedure.     |
|     | Notes/Comments     | ·.  |                  |
|     | ·                  |   |                  |
|     |                    |   |                  |
|     |                    | >>>> END OF EVALUATION <  |                  |
| STO | P TIME             |   |                  |

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# SIMULATOR, LABORATORY, IN--PLANT SETUP (If Required)

#### SIMULATOR SETUP

# JOB PERFORMANCE MEASURE **R707**

| CHECKLIST  | <u>`</u>                          |  |  |  |  |  |
|------------|-----------------------------------|--|--|--|--|--|
|            | Recall IC for 100% power (IC-164) |  |  |  |  |  |
|            | Enter malfunction C               | C0101, delay time = 0, ramp = 0, severity value = .5   |  |  |  |  |
|            | Shut component cod                | oling cross-tie using PNID: CC-49 = 0  |  |  |  |  |
|            | Run simulator until d             | component cooling surge tank is 0%   |  |  |  |  |
|            | Place the simulator               | in FREEZE; then delete the malfunction   |  |  |  |  |
| 0.2 on     |                                   | ocedure to fill the component cooling surge tank, slowly open CN-41 to -625 LCV bypass is open)  |  |  |  |  |
| When reque | sted to align to fill the         | e CC head tank, read the following cue:  |  |  |  |  |
| . ,        | Booth operator cue                | Condensate is being aligned to fill the CC head tank level.  |  |  |  |  |
| When reque | sted to locate CC lea             | ak, read the following cue:  |  |  |  |  |
|            | Booth operator cue                | Auxiliary building operator acknowledges direction to locate and isolate CC leak.  |  |  |  |  |
| When conta | cted concerning state             | us of CC leak, read the following cue:   |  |  |  |  |
|            | Booth operator cue                | Auxiliary building operator reports discovering and isolating a ruptured supply pipe to the gas stripper trim cooler.                          |  |  |  |  |
| When conta | cted concerning state             | us of CC head tank fill, read the following cue:   |  |  |  |  |
|            | Booth operator cue                | Condensate is aligned to fill the CC head tank level.  |  |  |  |  |
| When reque | sted to check CCHX                | SW delta-Ps, read the following cue:   |  |  |  |  |
|            | Booth operator cue                | Auxiliary building operator reports that the service water differential pressure across the component cooling water heat exchangers is 10 PSID |  |  |  |  |

Dominion

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11/30/01

## North Anna Power Station JOB PERFORMANCE MEASURE EVALUATION

#### **OPERATOR PROGRAM**

#### **INITIAL CONDITIONS**

CDA has NOT been actuated

The mechanical chiller is running

Containment pressure is approximately 18 psia and increasing due to a small main steam piping break

1-FR-Z.4 has been completed through establishing instrument air to the containment

#### **INITIATING CUE**

You are requested to reduce containment pressure to subatmospheric in accordance with 1-FR-Z.4.

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# Dominion North Anna Power Station JOB PERFORMANCE MEASURE EVALUATION

#### **OPERATOR PROGRAM**

#### **R765**

|--|

Reduce containment pressure to subatmospheric (1-FR-Z.4).

#### TASK STANDARDS

Chilled water flow was aligned to CARFs, SW flow was aligned to "A" RSHX and 1-RS-P-1A was started.

#### **K/A REFERENCE:**

022-A4.04 (3.1/3.2)

#### **ALTERNATE PATH:**

N/A

#### TASK COMPLETION TIMES

| Validation Time = | 10 minutes | Start Time = |
|-------------------|------------|--------------|
| Actual Time =     | minutes    | Stop Time =  |

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11/30/01

#### **PERFORMANCE EVALUATION**

| Rating                          | []SATISFACTORY | [ ] UNSATISF | ACTORY |
|---------------------------------|----------------|--------------|--------|
| Candidate (Print)               |                |              |        |
| Evaluator (Print)               |                |              |        |
| Evaluator's Signature /<br>Date |                |              |        |
| EVALUATOR'S COMMENTS            | •              | •            |        |
|                                 |                |              |        |
|                                 |                |              |        |
|                                 |                |              |        |

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### Dominion North Anna Power Station

## JOB PERFORMANCE MEASURE (Evaluation)

#### **OPERATOR PROGRAM**

**R765** 

#### READ THE APPLICABLE INSTRUCTIONS TO THE CANDIDATE

#### Instructions for Simulator JPMs

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

#### **INITIAL CONDITIONS**

CDA has NOT been actuated

The mechanical chiller is running

Containment pressure is approximately 18 psia and increasing due to a small main steam piping break

1-FR-Z.4 has been completed through establishing instrument air to the containment

#### **INITIATING CUE**

You are requested to reduce containment pressure to subatmospheric in accordance with 1-FR-Z.4.

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#### **TOOLS AND EQUIPMENT**

Copy of 1-FR-Z.4 signed off through establishing instrument air to the containment

### **PERFORMANCE STEPS** START TIME Verify that the containment air recirculation fan chilled water supply Procedure Step 3a valves are open. SAT[] UNSAT[] CRITICAL STEP Control switch for 1-CC-TV-115A, 115B, and 115C is placed in the CD **STANDARDS** position 1-CC-TV-115A, 115B, and 115C red lights are all lit and green lights Dead simulator are NOT lit. cue Notes/Comments Procedure Step 3b Verify that the containment air recirculation fan chilled water return valves are open. STANDARDS 1-CC-TV-105A, 105B, 105C and 100A, 100B, 100C are verified open. SAT[] UNSAT[] 1-CC-TV-105A, 105B, 105C and 100A, 100B, 100C red lights are all lit Dead simulator and green lights are NOT lit. <u>cue</u> Notes/Comments

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| 3        | Verify that the con                 | tainment air recirculation fans are running.         | Procedure Step 3c                     |
|----------|-------------------------------------|--|---------------------------------------|
|          | STANDARDS                           | 1-HV-F-1A, 1B, and 1C are verified running.          |                                       |
|          |                                     |  | [SAT[] UNSAT[]                        |
|          |                                     |  |                                       |
|          | Dead simulator cue                  | 1-HV-F-1A, 1B, and 1C red lights are all lit a       | nd green lights are NOT lit.          |
|          |                                     |  |                                       |
| •        | Notes/Comments                      |  |                                       |
|          |                                     |  |                                       |
|          |                                     |  |                                       |
|          |                                     |  |                                       |
| 4        | Verify that the chil                | led water system is in service.                      | Procedure Step 3d                     |
| <u> </u> |                                     |  | Troocaare etep ea                     |
|          | STANDARDS                           | Mechanical chiller is verified running.              |                                       |
|          |                                     |  | SAT[] UNSAT[]                         |
|          | Examiner's cue                      | Review the JPM initial conditions.                   |                                       |
|          | Notes/Comments:                     | If candidate requests the status of chilled wate     | r read the above cue                  |
|          | Notes/Comments.                     | in candidate requests the status of chined water     | , read the above ede.                 |
|          |                                     |  |                                       |
|          |                                     |  |                                       |
|          |                                     |  | •                                     |
| 5        | Check that the co                   | ntrol rod drive mechanism cooling fans are           | Procedure Step 4                      |
|          | running.                            |  |                                       |
|          | STANDARDS                           | 1-HV-F-37C, 37D, and 37E are verified runn           | ing.                                  |
|          |                                     | •  | SAT[] UNSAT[]                         |
|          | Daniel dissellation                 | 4 LIVE 270, 27D, and 27E and lights are all          |                                       |
|          | <u>Dead simulator</u><br><u>cue</u> | 1-HV-F-37C, 37D, and 37E red lights are all NOT lit. | in and green lights are               |
|          | Notes/Comments                      |  | <u> </u>                              |
|          | 140169/OOHHIGHIS                    |  | ·                                     |
|          |                                     |  |                                       |
|          |                                     |  | · · · · · · · · · · · · · · · · · · · |

|   | 6 | Check containmen    | t pressure stable or decreasing.             | Procedure Step 5   |
|---|---|---------------------|--|--------------------|
|   |   | 074154550           |  |                    |
|   |   | STANDARDS           | Containment pressure is verified increasing  | <u>ig.</u>         |
|   |   |                     |  | SAT[] UNSAT[]      |
|   |   |                     |  | SATE UNSATE        |
|   |   | Dead simulator      | Containment pressure is 22 psia and slow     | ly increasing      |
|   |   | cue                 | Containment pressure to 22 pola and slow     | ny morodomy        |
|   |   |                     | _ <del>_</del>                               |                    |
| - |   | Notes/Comments      |  |                    |
|   |   | 110100,001111101110 |  |                    |
|   |   |                     |  |                    |
|   |   |                     |  |                    |
|   |   |                     |  |                    |
|   |   |                     |  |                    |
|   |   |                     | •  |                    |
|   |   |                     |  | <u> </u>           |
|   | 7 | Check recirculation | n spray sump level.                          | Procedure Step 8   |
|   |   | CTANDADDO           | Desire annual community of an action         | thon 4' 4"         |
|   |   | STANDARDS           | Recirc spray sump level is verified greater  | man 1 4.           |
|   |   |                     |  | SAT[] UNSAT[]      |
|   |   |                     |  | CATE CHOATE        |
|   |   | Dead simulator      | Recirc spray sump level is 1' 8" and slowly  | v increasing       |
|   |   | cue                 | Trooms opray sumplies of the analysis        | , more dening.     |
|   |   |                     |  |                    |
|   |   | Notes/Comments      |  |                    |
|   |   |                     |  |                    |
|   |   |                     | •  |                    |
|   |   |                     |  |                    |
|   |   |                     |  |                    |
|   |   |                     |  |                    |
|   |   |                     | •  |                    |
|   | - | TO: -1.0-1.4 DO D   | Ad A. San and Salah In                       | Dan andreas Otam O |
|   | 8 | Check that 1-RS-P   | '-1A is available.                           | Procedure Step 9   |
|   |   | STANDARDS           | Recirc spray pump 1-RS-P-1A is verified a    | available          |
|   |   | STANDARDO           | Trecire spray pump 1-10-1 - 17 is verified a | availabio.         |
|   |   |                     |  | SAT[] UNSAT[]      |
|   |   |                     |  |                    |
|   |   | Dead simulator      | 1-RS-P-1A is in auto-after stop and 1H bu    | s is energized.    |
|   |   | cue                 |  | <u> </u>           |
|   |   |                     |  |                    |
|   |   | Notes/Comments      |  |                    |
|   |   |                     |  |                    |
|   |   |                     |  |                    |
|   |   | <u> </u>            |  |                    |
|   |   | •                   |  |                    |

|   | 9  | Align service water   | to 1-RS-E-1A.   | Procedure Step 10a        |
|---|----|-----------------------|---|---------------------------|
|   |    | CRITICAL STE          | P   | SAT[] UNSAT[]             |
|   | ·  | STANDARDS             | OPEN push-buttons for 1-SW-MOV-101A, 103A depressed               | , 104A, and 105C are      |
|   | ٠  | Dead simulator cue    | 1-SW-MOV-101A, 103A, 104A and 105C red lig<br>lights are NOT lit. | hts are all lit and green |
|   |    | Notes/Comments        |   |                           |
|   |    |                       |   |                           |
|   |    |                       |   |                           |
|   |    |                       |   |                           |
|   | 10 | Start inside recircul | ation spray pump 1-RS-P-1A.                                       | Procedure Step 10b        |
|   | •  | CRITICAL STE          | P   | SAT[] UNSAT[]             |
| - |    | STANDARDS             | Control switch for 1-RS-P-1A is placed in AUTO                    | -AFTER-START              |
|   |    | Dead simulator cue    | 1-RS-P-1A motor ammeter pegged high, then de                      | ecreased to 320 amps.     |
|   |    | Notes/Comments        |   | <u> </u>                  |
|   |    | Titolog Commonts      |   |                           |
|   |    |                       |   |                           |

| ST       | ANDARDS            | Containment pressure is verified decreasing | ng.              |
|----------|--------------------|---|------------------|
|          |                    |   | SAT[] UNSAT      |
| Ex       | aminer's cue       | Assume that another operator will complet   | te the procedure |
| De<br>cu | ead simulator<br>e | Containment pressure is now 21 psia and     | decreasing       |
| No       | tes/Comments       | •   |                  |
|          |                    |   |                  |
|          |                    |   |                  |
|          |                    |   |                  |
|          |                    | >>>> END OF EVALUATION <<<<<                |                  |

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# SIMULATOR, LABORATORY, IN--PLANT SETUP (If Required)

#### SIMULATOR SETUP

# JOB PERFORMANCE MEASURE **R765**

| T | Α | S | K |
|---|---|---|---|
|   |   |   |   |

Reduce containment pressure to subatmospheric (1-FR-Z.4).

| <u>CH</u> | <u>ECKLIST</u>  |
|-----------|---|
|           | Recall IC for 100% power (IC-169)   |
|           | Place the simulator in RUN  |
| ÷.        | Enter the malfunction for a main steam break inside containment such that a safety injection is received and containment pressure is 18 psia (MS0801) |
|           | Close 1-CC-TV-115A/B/C  |
|           | Ensure that the sump level > 1 foot 4 inches  |
|           | Place the simulator in FREEZE   |

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