North Anna Draft ADMIN

Facility: North Anna Power Station   Date of Examination: 6/10-14/2002

Examination Level **RO**   Operating Test Number: 1A

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

Facility: <u>North Anna Power Station</u>   Date of Examination: <u>6/10-14/2002</u>

Examination Level: **SRO**   Operating Test Number: 1A

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

NORTH ANNA POWER STATION
INITIAL LICENSE EXAMINATION
ADMINISTRATIVE
JOB PERFORMANCE MEASURE

Classify an emergency event (SRO)

CANDIDATE

_____

EXAMINER

_____

Rev. 0

Task:

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
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Candidate: _____
                                 NAME

Performance Rating: SAT _____ UNSAT _____

Examiner: _____   _____/_____
                          NAME   SIGNATURE   DATE
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COMMENTS

_____

_____

_____

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:

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 task, examiner to provide current time)

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

STEP 5:	Verify emergency action level exceeded. (step 1.d)	**CRITICAL STEP**
STANDARD:	Operator classifies the event as a General Emergency in accordance with tab C-2.	___ SAT
COMMENTS:		___ UNSAT

STEP 6:	Record procedure initiation. (step 1.e)	___ SAT
STANDARD:	Operator signs and dates the procedure.	
COMMENTS:		___ UNSAT

STEP 7:	Initiate a chronological log of events. (step 1.f)	___ SAT
STANDARD:	Operator states that he/she would initiate a chronological log of events.	
COMMENTS:		___ UNSAT

STEP 8:	Declare position of SEM. (step 1.g)	___ SAT
STANDARD:	Operator declares the position of SEM.	
COMMENTS:		___ UNSAT

STEP 9:	Check conditions allow for normal implementation of emergency response actions. (step 2)	___ SAT
STANDARD:	Operator states that he/she would initiate a chronological log of events.	
COMMENTS:		___ UNSAT

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

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

STEP 18: Record procedure initiation. (step 1) STANDARD: Operator signs and dates the procedure. COMMENTS:		___ SAT ___ UNSAT
STEP 19: Note time general emergency EAL was met. (step 2) STANDARD: Operator records the time EAL was met in EPIP-1.05. **NOTE TO EXAMINER: The time recorded in procedure step 2 must be ≤ 15 minutes from the time stated in the initial conditions.** COMMENTS:		**CRITICAL STEP** ___ SAT ___ UNSAT
STEP 20: Check if event announcement required. (step 3.a) STANDARD: Operator determines announcement was previously done. COMMENTS:		___ SAT ___ UNSAT
STEP 21: Initiate EPIP-1.06. (step 4) STANDARD: Operator obtains a copy of EPIP-1.06. COMMENTS:		___ SAT ___ UNSAT
STEP 22: Record procedure initiation. (step 1) STANDARD: Operator signs and dates the procedure. COMMENTS:		___ SAT ___ UNSAT

STEP 23: Use attachment 2 to determine initial PAR. (step 2) STANDARD: Operator refers to attachment 2. **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.)** COMMENTS:		___ SAT ___ UNSAT
STEP 24: Determine windspeed and three downwind sectors. (step 3.a) STANDARD: Operator determines downwind sectors are Romeo, Alpha and Bravo. COMMENTS:		___ SAT ___ UNSAT
STEP 25: Mark the appropriate PAR box in item 2. (step 3.b) STANDARD: Operator performs the following: • Marks the Expanded PAR box and the Evacuate sectors box • Enters Romeo, Alpha and Bravo in the affected sector blanks • Enters 0 to 5 miles in the distance blanks • Marks the Shelter sectors box • Enters Romeo, Alpha and Bravo in the affected sector blanks COMMENTS:		**CRITICAL STEP** ___ SAT ___ UNSAT
STEP 26: Sign and date form. (step 3.c) STANDARD: Operator records signs and dates attachment 3. COMMENTS:		___ SAT ___ 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.	
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)

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   conditions exist:
- Wind speed is 12 mph
- Wind direction is 180   degrees

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 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.

- **START TIME:** _____

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*1. Calculates NLO dose without a respirator.

    <u>Standards</u>
    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 = 5
    Total = 18.0 + 5 mRem = 23 mRem

    <u>Evaluator's Comments</u>

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*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.

    <u>Evaluator's Comments</u>

*3. Determines that the job should be performed without a respirator and reports findings to Shift Supervisor.

    <u>Standards</u>
    Reports to Shift Supervisor that performance of work should be performed <u>without</u> a respirator to achieve a dose that is ALARA. Calculates the dose to the NLO without a respirator ALARA.

    <u>Evaluator's Comments</u>

*** 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 _____

EXAMINER _____

NORTH ANNA POWER STATION
INITIAL LICENSE EXAMINATION
ADMINISTRATIVE
JOB PERFORMANCE MEASURE

Task:

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 governments," Rev. 24

Validation Time: 8 min.   **Time Critical:** No

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Candidate: _____
                              NAME

Performance Rating: SAT _____ UNSAT _____

Examiner: _____   _____/_____
                       NAME   SIGNATURE   DATE
==

COMMENTS

_____

_____

_____

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 first follow-up report of emergency to the state and local governments in accordance with EPIP-2.01, steps 5 - 18.

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

STEP 5:	Record description of event. (item 3)	___ SAT
STANDARD:	Operator enters "Loss of reactor coolant and loss of containment integrity" in item 3.	
COMMENTS:		___ UNSAT

STEP 6:	Determine assistance requested. (item 4)	___ SAT
STANDARD:	Operator checks the "None" box in item 4.	
COMMENTS:		___ UNSAT

STEP 7:	Determine emergency response actions underway. (item 5)	___ SAT
STANDARD:	Operator checks the "Station monitoring teams dispatched offsite" box and "Station emergency personnel called in" box in item 5.	
COMMENTS:		___ UNSAT

STEP 8:	Determine if evacuation of onsite personnel is complete. (item 6)	___ SAT
STANDARD:	Operator checks the "No" box in item 6.	
COMMENTS:		___ UNSAT

STEP 9:	Determine prognosis of situation. (item 7)	___ SAT
STANDARD:	Operator checks the Worsening box in item 7.	
COMMENTS:		___ UNSAT

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

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

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 first 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	Date of Examination: 6/10-14/2002
Examination Level **RO**	Operating Test Number: 1A

Administrative Topic/Subject Description	Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions

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.

- **START TIME:** _____

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*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

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*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
to   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:** _____

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.

**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.

**Dominion
North Anna Power Station
JOB PERFORMANCE MEASURE EVALUATION**

OPERATOR PROGRAM

R709

TASK

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 =

PERFORMANCE EVALUATION

Rating   [ ] SATISFACTORY   [ ] UNSATISFACTORY

Candidate (Print)   _____

Evaluator (Print)   _____

Evaluator's Signature /
Date   _____

EVALUATOR'S COMMENTS

_____

_____

_____

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.

TOOLS AND EQUIPMENT

Calculator

PERFORMANCE STEPS

START TIME _____

1	Record the expected 100% power current readings from the Reactor Data Book.	Procedure Step NA

SAT [ ]   UNSAT [ ]

STANDARDS	Operator obtains reactor data book and records detector currents are calculated to four decimal places

Notes/Comments

2	Calculate the normalized detector currents.	Procedure Step NA

CRITICAL STEP	SAT [ ] UNSAT [ ]

STANDARDS	Normalized detector currents are calculated to four decimal places

Notes/Comments

3	Calculate the quadrant power tilt ratios.	Procedure Step NA

CRITICAL STEP	SAT [ ] UNSAT [ ]

STANDARDS	Upper and lower quadrant power tilt ratios are calculated to four decimals

Notes/Comments

4	Record the maximum QPTR and the quadrant of the maximum QPTR.	Procedure Step NA

CRITICAL STEP	SAT [ ] UNSAT [ ]

STANDARDS	1.0022 ($\pm$ .0002) is recorded as the maximum QPTR and N-42 lower is recorded as the quadrant of the maximum QPTR.

Notes/Comments

STOP TIME _____

Dominion
North Anna Power Station
JOB PERFORMANCE MEASURE EVALUATION

OPERATOR PROGRAM

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.

**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 =

PERFORMANCE EVALUATION

Rating   [ ] SATISFACTORY   [ ] UNSATISFACTORY

Candidate (Print)   _____

Evaluator (Print)   _____

Evaluator's Signature /
Date   _____

EVALUATOR'S COMMENTS

_____

_____

_____

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.

TOOLS AND EQUIPMENT

None

PERFORMANCE STEPS

START TIME _____

1	Stop power increase.	Procedure Step 1

SAT [ ]　UNSAT [ ]

NOTE TO THE EVALUATOR	You may now provide the requested procedure to the trainee

STANDARDS	Since step is NA and there is no RNO the operator will proceed to the next step.

Notes/Comments

2	Check if the unit is in mode 6.	Procedure Step 2

SAT [ ]　UNSAT [ ]

STANDARDS	Since unit is in mode 6 the operator will proceed to the next step.

Notes/Comments

3	Stop core alterations.	Procedure Step 3

CRITICAL STEP		SAT [ ] UNSAT [ ]

STANDARDS	Notification is made for personnel in containment to stop core alterations

Notes/Comments

4	Stop all positive reactivity additions.	Procedure Step 4

SAT [ ] UNSAT [ ]

STANDARDS	Since step is NA and there is no RNO the operator will proceed to the next step.

Notes/Comments

5	Verify that only one 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 failed the operator will proceed to the next step.

Notes/Comments

6	Verify that audible source-range indication in containment is available.	Procedure Step 6

SAT [ ]   UNSAT [ ]

Examiner cue	The source-range audible count rate speaker in containment is silent

Notes/Comments

7	Select the operable channel on the audible count rate drawer.	Procedure Step 6 RNO

SAT [ ]   UNSAT [ ]

STANDARDS	The operator will select N32 on the audible count rate drawer.

Notes/Comments

8	Verify audible source-range counts in containment.	Procedure Step 6 RNO

SAT [ ]   UNSAT [ ]

EXAMINER CUES	The source-range audible count rate speaker in containment is silent

Notes/Comments

9	Place the amplifier select switch in the A1 or A2 position.	Procedure Step 6 RNO

CRITICAL STEP	SAT [ ] UNSAT [ ]

STANDARDS	Operator places amplifier selector switch in other position

EXAMINER CUES	The source-range audible count rate speaker in containment is now beeping

Notes/Comments

10	Enter action statement in accordance with tech specs.	Procedure Step 7

SAT [ ]   UNSAT [ ]

EXAMINER CUES	Assume that another operator will complete the procedure

Notes/Comments

>>>>> END OF EVALUATION <<<<<

STOP TIME _____

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

_____ Recall the IC for mode 5

_____ Pressurizer level = approximately 15%

_____ Enter malfunction MNI1001, time delay = 10, ramp = 0, stop = 0, TRGR = NA

_____ Alarm override V1AA1_W, 10 seconds, override = ON

_____ Switch override AUDIO_MULT_OFF, 10 seconds, override = ON

_____ Place the simulator in FREEZE

NORTH ANNA POWER STATION
INITIAL LICENSE EXAMINATION
ADMINISTRATIVE
JOB PERFORMANCE MEASURE

Review and approve a
tagging record (SRO)

CANDIDATE _____

EXAMINER _____

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

Task:

Review and approve a tagging record. (OPAP-0010)

References:

OPAP-0010, "Tag-Outs," Rev. 15

Validation Time: 6 min.   **Time Critical:** No

==

Candidate: _____
                          NAME

Performance Rating: SAT _____ UNSAT _____

Examiner: _____   _____/_____
                        NAME   SIGNATURE   DATE
==

COMMENTS

_____

_____

_____

<u>Tools/Equipment/Procedures Needed:</u>

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.

STEP 1:	Verify the tag-out is adequate for the tasks and hazards involved. (6.3.3.a)	___ SAT
STANDARD:	Operator reviews the tagging record and reference material.	
COMMENTS:		___ UNSAT

STEP 2:	Identify that an inadequate boundary exists. (6.3.3.a)	**CRITICAL 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 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.	___ 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 STEP**
STANDARD:	Operator determines the following tagging order errors: • Tag number 6 (1-BD-95) should be ordered "4" • Tag number 8 (1-BD-7) should be ordered "5" • Tag number 9 (1-BD-6) should be ordered "6" • (new) tag number 10 (1-GN-109) should be ordered "4"	___ SAT
		___ UNSAT
COMMENTS:	Determining that tag number 9 (1-BD-6) should be ordered "6" satisfies the critical step.	

STEP 5:	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 CUE: The tagging office acknowledges, the evaluation is complete.		
COMMENTS:		

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 _____

EXAMINER _____

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   DATE

==

COMMENTS

_____

_____

_____

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).**

STEP 1: Determine the expanded mechanical boundaries. STANDARD: Operator determines the additional boundary valves that need to be tagged in accordance with the attached key. **NOTE TO EXAMINER**: JPM steps need NOT be performed in sequence. COMMENTS:	**CRITICAL STEP** ___ SAT ___ UNSAT
STEP 2: Determine the expanded vent/drain flow paths. STANDARD: Operator determines the additional vent/drain valves that need to be tagged in accordance with the attached key. **EXAMINER'S CUE: If applicant asks whether the tag on 1-BD-7 has been cleared, state that the tag has been cleared.** COMMENTS:	**CRITICAL STEP** ___ SAT ___ UNSAT
STEP 3: Enter data into the computer tagging system. STANDARD: Operator states that he/she has completed the task. **EXAMINER'S CUE: Another operator will enter the data into the tagging system.** COMMENTS: **END OF TASK**	___ SAT ___ UNSAT

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

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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                                  Rev. 0

North Anna Draft JPMs

Facility: North Anna _____   Date of Examination: ___6/10-14 /2002___

Exam Level (circle one): **RO / SRO(I)** / SRO(U)   Operating Test No.: _____

B.1 Control Room Systems

System / JPM Title	Type Code*	Safety 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). 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	4S
d. Start A Reactor Coolant Pump. (1-OP-5.2) (R164MOD). 003A4.01	M,S,A	4P
e. Reduce Containment Pressure to Subatmospheric (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 System (1-AP-15) (R707). 008A2.02	D,S	8

B.2 Facility Walk-Through

a. Align a charging flow path locally. (N907) 004-A2.07	D,R	2
b. Prepare the SBO Diesel Generator for Loading 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, (A)lternate path, (C)ontrol room, (S)imulator, (L)ow-Power, (R)CA

Facility: North Anna   Date of Examination: 6/10-14 /2002

Exam Level (circle one): RO / SRO(I) / **SRO(U)**   Operating Test No.: _____

B.1 Control Room Systems

System / JPM Title	Type Code*	Safety 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). 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**	**4S**
d. Start A Reactor Coolant Pump. (1-OP-5.2) (R164MOD). 003A4.01	M,S,A	4P
e. Reduce Containment Pressure to Subatmospheric (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 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 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, (A)lternate path, (C)ontrol room, (S)imulator, (L)ow-Power, (R)CA

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.

N1671

TASK

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 = _____

PERFORMANCE EVALUATION

Rating   [ ] SATISFACTORY   [ ] UNSATISFACTORY

Candidate (Print)   _____

Evaluator (Print)   _____

Evaluator's Signature /
Date   _____

EVALUATOR'S COMMENTS

_____

_____

_____

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.

TOOLS AND EQUIPMENT

SBO Sync key

PERFORMANCE STEPS

START TIME _____

| 1 | Verify initial conditions are satisfied. | Procedure Step 5.1.1 |

| STANDARDS | Initial conditions are verified satisfied. |

SAT [ ] UNSAT [ ]

Notes/Comments

| 2 | Review precautions and limitations. | Procedure Step 5.1.2 |

| STANDARDS | Precautions and limitations are reviewed. |

SAT [ ] UNSAT [ ]

Notes/Comments

3	Determine the SBO diesel status.	Procedure Step 5.1.3

STANDARDS	EDG speed is verified approximately 900 rpm.

SAT [ ]   UNSAT [ ]

Examiner's cue	Review the JPM initial conditions.

Notes/Comments: If candidate requests status of EDG speed, read the above cue.
Candidate proceeds to step 5.1.5 (step 5.1.4 is N/A)

4	Place the SBO diesel fuel oil transfer pump HAND/OFF/AUTO switch in the AUTO position.	Procedure Step 5.1.5

CRITICAL STEP	SAT [ ] UNSAT [ ]

STANDARDS	Station blackout diesel generator fuel oil transfer pump is placed in AUTO

Notes/Comments

5	Verify breaker 05M1 is closed.	Procedure Step 5.1.6.a, 1st bullet

STANDARDS	Breaker 05M1 is verified closed.

SAT [ ]   UNSAT [ ]

VERBAL-VISUAL CUES	Breaker 05M1 red light is lit and green light is NOT lit.

Notes/Comments

6	Verify breaker 05M5 is closed.	Procedure Step 5.1.6.a, 2nd bullet

STANDARDS	Breaker 05M5 is verified closed.

SAT [ ]   UNSAT [ ]

VERBAL-VISUAL CUES	Breaker 05M5 red light is lit and green light is NOT lit.

Notes/Comments

7	Verify breaker 04M1-1 is open.	Procedure Step 5.1.6.a, 3rd bullet

STANDARDS	Breaker 04M1-1 is verified open.

SAT [ ]   UNSAT [ ]

VERBAL-VISUAL CUES	Breaker 04M1-1 green light is lit and red light is NOT lit.

Notes/Comments

8	Verify breaker 04M1-2 is closed.	Procedure Step 5.1.6.a, 4th bullet

STANDARDS	Breaker 04M1-2 is verified closed.

SAT [ ]   UNSAT [ ]

VERBAL-VISUAL CUES	Breaker 04M1-2 red light is lit and green light is NOT lit.

Notes/Comments

9	Match the breaker control switch flags for those breakers that are in the correct positions.	Procedure Step 5.1.6.b

STANDARDS	Control switch flags are matched with the indications.

SAT [ ]   UNSAT [ ]

Notes/Comments: Candidate proceeds to step 5.1.8 (step 5.1.7 is N/A)

10	Have the SRO determine which transfer bus will be supplied by the SBO EDG.	Procedure Step 5.1.8

STANDARDS	F transfer bus is recorded in the procedure blank.

SAT [ ]   UNSAT [ ]

Examiner's cue	Review the JPM initial conditions.

Notes/Comments: If candidate requests SRO guidance, read the above cue.

Candidate proceeds to step 5.1.11 (steps 5.1.9 and 5.1.10 are N/A)

| 11 | Ensure breaker 05L3 is open. | Procedure Step 5.1.11.a |

| STANDARDS | Breaker 05L3 is verified open. |

SAT [ ]   UNSAT [ ]

| VERBAL-VISUAL CUES | Breaker 05L3 green light is lit and red light is NOT lit |

Notes/Comments

| 12 | Ensure breaker 05L2 is open. | Procedure Step 5.1.11.b |

| STANDARDS | Breaker 05L2 is verified open. |

SAT [ ]   UNSAT [ ]

| VERBAL-VISUAL CUES | Breaker 05L2 green light is lit and red light is NOT lit |

Notes/Comments

13	Ensure breaker 05M3 is open.	Procedure Step 5.1.11.c

STANDARDS	Breaker 05M3 is verified open.

SAT [ ]   UNSAT [ ]

VERBAL-VISUAL CUES	Breaker 05M3 green light is lit and red light is NOT lit

Notes/Comments

14	Ensure breaker 05L1 is open.	Procedure Step 5.1.11.d

STANDARDS	Breaker 05L1 is verified open.

SAT [ ]   UNSAT [ ]

VERBAL-VISUAL CUES	Breaker 05L1 green light is lit and red light is NOT lit

Notes/Comments

15	Close breaker 05M2.	Procedure Step 5.1.11.e

CRITICAL STEP	SAT [ ] UNSAT [ ]

STANDARDS	Breaker 05M2 control switch is placed in CLOSE

VERBAL-VISUAL CUES	Breaker 05M2 red light is now lit and green light is NOT lit

Notes/Comments

16	Insert synch key in breaker 15F5 synch switch and turn synch switch ON.	Procedure Step 5.1.11.f

CRITICAL STEP	SAT [ ] UNSAT [ ]

STANDARDS	Synch key is inserted in breaker 15F5 synch switch, which is then rotated to the ON position

VERBAL-VISUAL CUES	Incoming and running voltage is now indicated

Notes/Comments

17	Have the unit-1 OATC ensure breaker 15F1 is open.	Procedure Step 5.1.11.g.1

STANDARDS	Unit-1 OATC is requested to verify breaker 15F1 is open.

SAT [ ] UNSAT [ ]

VERBAL-VISUAL CUES	Unit-1 OATC confirms breaker 15F1 is open.

Notes/Comments

18	Have the backboards operator ensure breakers 15F3, 15F4, 15H11 and 25J11 are open.	Procedure Step 5.1.11.g.2

STANDARDS	Backboards operator is requested to verify breakers 15F3, 15F4, 15H11 and 25J11 are open.

SAT [ ] UNSAT [ ]

VERBAL-VISUAL CUES	Backboards operator confirms breakers 15F3, 15F4, 15H11 and 25J11 are all open.

Notes/Comments

19	Close breaker 15F5.	Procedure Step 5.1.11.h

CRITICAL STEP	SAT [ ] UNSAT [ ]

STANDARDS	Breaker 15F5 control switch is placed in CLOSE

VERBAL-VISUAL CUES	Breaker 15F5 red light is now lit and green light is NOT lit

Notes/Comments

20	Place synch key in OFF.	Procedure Step 5.1.11.i

STANDARDS	Synch switch for breaker 15F5 is rotated to the OFF position

SAT [ ]   UNSAT [ ]

VERBAL-VISUAL CUES	Incoming and running voltmeters now indicate zero

Notes/Comments

| 21 | Record the time the station blackout diesel generator started. | Procedure Step 5.1.12 |

| STANDARDS | Start time is recorded in the procedure |

SAT [ ]   UNSAT [ ]

| Examiner's cue | Review the JPM initial conditions. |

Notes/Comments: If candidate requests EDG start time, read the above cue.

| 22 | Adjust the generator voltage. | Procedure Step 5.1.13 |

| STANDARDS | Generator voltage is verified between 4250 and 4350 volts |

SAT [ ]   UNSAT [ ]

| VERBAL-VISUAL CUES | Generator voltage is 4300 volts |

Notes/Comments

23	Adjust the generator frequency.	Procedure Step 5.1.14

STANDARDS	Generator frequency is verified between 59.5 and 60.5 volts

SAT [ ]   UNSAT [ ]

VERBAL-VISUAL CUES	Generator frequency is 60 Hz

Notes/Comments

>>>>> **END OF EVALUATION** <<<<<

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.

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 = _____

PERFORMANCE EVALUATION

Rating	[ ] SATISFACTORY	[ ] UNSATISFACTORY
Candidate (Print)		
Evaluator (Print)		
Evaluator's Signature / Date		

EVALUATOR'S COMMENTS

_____

_____

_____

Dominion
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.

TOOLS AND EQUIPMENT

Appendix-R lantern

Appendix-R radio

Emergency dosimeter

PERFORMANCE STEPS

START TIME _____

1	Obtain a radio and emergency lantern from the Appendix-R locker.	Procedure Step 1

STANDARDS	Radio and lantern are obtained from Appendix-R locker.

SAT [ ]   UNSAT [ ]

Notes/Comments

2	Obtain Emergency Dosimeter from HP	Procedure Step 2

STANDARDS	Dosimeter is obtained from the DAD check-out area.

SAT [ ]   UNSAT [ ]

Notes/Comments: Emergency dosimeters are located on the wall outside the HP office.

| 3 | Locally ensure normal charging isolations are open. | Procedure Step 4 |

| **CRITICAL STEP** | SAT [ ] UNSAT [ ] |

| STANDARDS | 1-CH-MOV-1289A is declutched and handwheel is turned in the CCW direction until the valve is fully open.
1-CH-MOV-1289B is declutched and handwheel is turned in the CCW direction until the valve is fully open. |

| VERBAL-VISUAL CUES | 1-CH-MOV-1289A and 1289B stem indicators are at the top red line. |

Notes/Comments

| 4 | Establish communications with the control room. | Procedure Step 5a |

| **CRITICAL STEP** | SAT [ ] UNSAT [ ] |

| STANDARDS | OATC is contacted. |

Notes/Comments

5	Throttle open the charging flow control bypass valve to establish the required flow.	Procedure Step 5c

CRITICAL STEP	SAT [ ] UNSAT [ ]

STANDARDS	1-CH-289 handwheel is turned in the CCW direction until the valve is throttled open.

VERBAL-VISUAL CUES	The OATC reports that charging flow is now 25 gpm.

Notes/Comments

6	Close inlet isolation for FCV-1122.	Procedure Step 5c

CRITICAL STEP	SAT [ ] UNSAT [ ]

STANDARDS	1-CH-287 handwheel is turned in the CW direction until the valve is fully closed.

Notes/Comments

7	Control charging flow as directed by OATC.	Procedure Step 5d

SAT [ ]   UNSAT [ ]

VERBAL-VISUAL CUES	Assume another operator will continue this task.

Notes/Comments

STOP TIME _____

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.

N963

TASK

Transfer the remote monitoring ex-core neutron flux detector to its dedicated power source (0-FCA-1, 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 = _____

PERFORMANCE EVALUATION

Rating   [ ] SATISFACTORY   [ ] UNSATISFACTORY

Candidate (Print)   _____

Evaluator (Print)   _____

Evaluator's Signature /
Date   _____

EVALUATOR'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.

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

START TIME _____

| 1 | Obtain keys from Appendix R key locker or admin key locker. | Procedure Step 1 |

| STANDARDS | Admin key, unit-1 and unit-2 remote flux monitor power source keys are obtained. |

SAT [ ]   UNSAT [ ]

| Notes/Comments |
| |

| 2 | Place disconnect switch on 2-EP-CB-001 to OFF. | Procedure Step 2a |

CRITICAL STEP   SAT [ ]   UNSAT [ ]

| STANDARDS | 2-EP-CB-001 disconnect switch is placed in OFF |

| Notes/Comments |
| |

| 3 | Verify inverter 2-I AC output breaker is closed. | Procedure Step 2b |

| STANDARDS | Inverter 2-I AC output breaker is verified closed. |

SAT [ ]   UNSAT [ ]

| VERBAL-VISUAL CUES | 2-I inverter output breaker handle is up. |

Notes/Comments

| 4 | Place the ex-core flux monitor power supply transfer switch 1-XFR-SW-202 to the BACKUP position. | Procedure Step 2c |

CRITICAL STEP | SAT [ ]   UNSAT [ ]

| STANDARDS | Transfer switch 1-XFR-SW-202 in placed in BACKUP |

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 OFF |

Notes/Comments

| 6 | Verify inverter 1-I AC output breaker is closed. | Procedure Step 3b |

| STANDARDS | Inverter 1-I AC output breaker is verified closed. |

SAT [ ]   UNSAT [ ]

| VERBAL-VISUAL CUES | 1-I inverter AC output breaker handle is up. |

| Notes/Comments |
| |

| 7 | Place the ex-core flux monitor power supply transfer switch 2-XFR-SW-202 to the BACKUP position. | Procedure Step 3c |

CRITICAL STEP | SAT [ ]   UNSAT [ ]

| STANDARDS | Transfer switch 2-XFR-SW-202 in placed in BACKUP |

| Notes/Comments |
| |

| 8 | Obtain vital area key for Fuel Building, Remote Monitor and Aux Monitor. | Procedure Step 4 |

| Examiner's cue | Assume another operator will complete this attachment.

Show me where the source-range amplifier selector switch is located (Admin-A.1 JPM R714). NOTE: Applicant is allowed to refer to 1-AP-4.1 |

| Notes/Comments |
| |

>>>>> END OF EVALUATION <<<<<

STOP TIME   _____

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.

N963

TASK

Transfer the remote monitoring ex-core neutron flux detector to its dedicated power source (0-FCA-1, 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 = _____

PERFORMANCE EVALUATION

Rating	[ ] SATISFACTORY	[ ] UNSATISFACTORY
Candidate (Print)	_____	
Evaluator (Print)	_____	
Evaluator's Signature / Date	_____	

EVALUATOR'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.

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

START TIME _____

1	Obtain keys from Appendix R key locker or admin key locker.	Procedure Step 1

STANDARDS	Admin key, unit-1 and unit-2 remote flux monitor power source keys are obtained.

SAT [ ]   UNSAT [ ]

Notes/Comments

2	Place disconnect switch on 2-EP-CB-001 to OFF.	Procedure Step 2a

CRITICAL STEP	SAT [ ] UNSAT [ ]

STANDARDS	2-EP-CB-001 disconnect switch is placed in OFF

Notes/Comments

| 3 | Verify inverter 2-I AC output breaker is closed. | Procedure Step 2b |

| STANDARDS | Inverter 2-I AC output breaker is verified closed. |

SAT [ ]   UNSAT [ ]

| VERBAL-VISUAL CUES | 2-I inverter output breaker handle is up. |

Notes/Comments

| 4 | Place the ex-core flux monitor power supply transfer switch 1-XFR-SW-202 to the BACKUP position. | Procedure Step 2c |

CRITICAL STEP | SAT [ ]   UNSAT [ ]

| STANDARDS | Transfer switch 1-XFR-SW-202 in placed in BACKUP |

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 OFF |

Notes/Comments

| 6 | Verify inverter 1-I AC output breaker is closed. | Procedure Step 3b |

| STANDARDS | Inverter 1-I AC output breaker is verified closed. |

SAT [ ]   UNSAT [ ]

| VERBAL-VISUAL CUES | 1-I inverter AC output breaker handle is up. |

Notes/Comments

| 7 | Place the ex-core flux monitor power supply transfer switch 2-XFR-SW-202 to the BACKUP position. | Procedure Step 3c |

| **CRITICAL STEP** | SAT [ ]   UNSAT [ ] |

| STANDARDS | Transfer switch 2-XFR-SW-202 in placed in BACKUP |

Notes/Comments

| 8 | Obtain vital area key for Fuel Building, Remote Monitor and Aux Monitor. | Procedure Step 4 |

| Examiner's cue | Assume another operator will complete this attachment.

Show me where the source-range amplifier selector switch is located (Admin-A.1 JPM R714). NOTE: Applicant is allowed to refer to 1-AP-4.1 |

Notes/Comments

>>>>> **END OF EVALUATION** <<<<<

STOP TIME _____

Dominion
North Anna Power Station
JOB PERFORMANCE MEASURE EVALUATION

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.

R164 (MOD)

TASK

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

TASK STANDARDS

"B" RCP was started, then tripped when vibrations exceeded the limit

K/A REFERENCE:

003-A4.01 (3.3/3.2)

ALTERNATE PATH:

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   [ ] UNSATISFACTORY

Candidate (Print)   _____

Evaluator (Print)   _____

Evaluator's Signature /
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

PERFORMANCE STEPS

    START TIME _____

1	Start the "B" reactor coolant pump bearing lift pump 1-RC-P-1B1.	Procedure Step 5.2.10

CRITICAL STEP	SAT [ ] UNSAT [ ]

STANDARDS	Control switch for 1-RC-P-1B1 is placed in START

Dead simulator cue	"B" RCP bearing lift pump red light is lit and green light is NOT lit.

Notes/Comments

2	Verify that the "B" reactor coolant pump oil pressure start permissive indicating light is lit.	Procedure Step 5.2.11

STANDARDS	Oil pressure start permissive white indicating light is verified lit.

SAT [ ]   UNSAT [ ]

Dead simulator cue	Oil pressure start permissive indicating light is lit

Notes/Comments

3	Verify that the "B" reactor coolant pump annunciators are not lit.	Procedure Step 5.2.12

STANDARDS	RCP annunciators are verified NOT lit.

SAT [ ]   UNSAT [ ]

Dead simulator cue	Annunciators C-C2, C-E2, C-F2, C-G2, and C-H2 are NOT lit

Notes/Comments: The next procedure step is N/A.

4	Ensure that the Chemical and Volume Control System parameters are within specifications.	Procedure Step 5.2.14

STANDARDS	CVCS parameters are verified within specifications.

SAT [ ]   UNSAT [ ]

Dead simulator cue	Seal injection flow rate for "B" RCP is 8 gpm VCT temperature is 100°F VCT pressure is 38 psig

Notes/Comments

| 5 | Ensure that the Component Cooling Water System parameters are within specifications. | Procedure Step 5.2.15 |

| STANDARDS | CCW parameters are verified within specifications. |

SAT [ ]   UNSAT [ ]

| Dead simulator cue | Upper oil cooler flow is 160 gpm
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 |

Notes/Comments

| 6 | Ensure that RCS pressure is above the required value. | Procedure Step 5.2.16 |

| STANDARDS | RCS pressure is verified above 280 psig. |

SAT [ ]   UNSAT [ ]

| Dead simulator cue | RCS pressure is 350 psig. |

Notes/Comments

7	Verify that the bearing lift pump has operated for at least two minutes.	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 bearing lift pump was started.

Notes/Comments: The next procedure step is N/A.

8	Ensure that all personnel are clear of the reactor coolant pump to be started.	Procedure Step 5.2.19

STANDARDS	RCP start is announced on the plant paging system.

SAT [ ]   UNSAT [ ]

Notes/Comments

| 9 | Start the "B" reactor coolant pump 1-RC-P-1B. | Procedure Step 5.2.20 |

| **CRITICAL STEP** | SAT [ ]   UNSAT [ ] |

| STANDARDS | Control switch for 1-RC-P-1B is placed in AUTO-AFTER-START |
| | At least two minutes have elapsed since the bearing lift pump for "B" RCP was started. |

| Dead simulator cue | "B" RCP motor ammeter pegged high, then decreased to 920. |

Notes/Comments

| 10 | Verify that reactor coolant flow is increasing. | Procedure Step 5.2.21 |

| STANDARDS | Flow in "B" reactor coolant loop is verified increasing. |

SAT [ ]   UNSAT [ ]

| Dead simulator cue | Flow is increasing on all "B" loop reactor coolant flow indicators |

Notes/Comments: 20 seconds after RCP is started, annunciator A-E6, RCP 1B VIBRATION ALERT/DANGER, will illuminate.

11	Verify that annunciator 1A-E6, RCP 1B VIBRATION ALERT/DANGER, is not lit.	Procedure Step 5.2.22

STANDARDS	Annunciator is observed lit.

SAT [ ]   UNSAT [ ]

Dead simulator cue	Annunciator A-E6 is illuminated.

Notes/Comments: Transitions to annunciator response for A-E6

12	Check seismic vibration less than 5 mils.	AR procedure step 2.1

STANDARDS	Seismic vibration indication for "B" is observed.

SAT [ ]   UNSAT [ ]

Dead simulator cue	"B" RCP seismic vibration is 3 mils.

Notes/Comments

13	Check proximity vibration less than 20 mils.	AR procedure step 2.2

STANDARDS	Proximity vibration indication for "B" is observed.

SAT [ ]   UNSAT [ ]

Dead simulator cue	"B" RCP proximity vibration is 25 mils.

Notes/Comments

14	Stop "B" RCP.	AR procedure step 2.2 (RNO)

CRITICAL STEP	SAT [ ] UNSAT [ ]

STANDARDS	Control switch for 1-RC-P-1B is placed in STOP

Dead simulator cue	"B" RCP motor ammeter has decreased to zero.

Examiner cue	Assume another operator will continue with the annunciator response actions.

Notes/Comments: Stop evaluation upon completion of A-E6 action.

>>>>> **END OF EVALUATION** <<<<<

STOP TIME _____

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 <u>not</u> 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

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.

R208

TASK

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 /
Date   _____

EVALUATOR'S COMMENTS

_____

_____

_____

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.

TOOLS AND EQUIPMENT

None

PERFORMANCE STEPS

START TIME _____

1	Verify that both trains 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 level greater than 23%.	Procedure Step 2

STANDARDS	RWST level is verified >23%.

SAT [ ]   UNSAT [ ]

Dead simulator cue	RWST level is 97%.

Notes/Comments

3	Open charging pump suction from the RWST.	Procedure Step 3a

CRITICAL STEP	SAT [ ] UNSAT [ ]

STANDARDS	1-CH-MOV-1115D control switch is placed in the OPEN position.

Dead simulator cue	1-CH-MOV-1115D red light is lit and green light is NOT lit.

Notes/Comments

4	Close charging pump suction from the VCT.	Procedure Step 3b

CRITICAL STEP	SAT [ ] UNSAT [ ]

STANDARDS	1-CH-MOV-1115C control switch is placed in the CLOSE position.

Dead simulator cue	1-CH-MOV-1115C green light is lit and red light is NOT lit.

Notes/Comments

5	Close normal charging isolation valve.	Procedure Step 3c

CRITICAL STEP	SAT [ ] UNSAT [ ]

STANDARDS	1-CH-MOV-1289A control switch is placed in the CLOSE position.

Dead simulator cue	1-CH-MOV-1289A green light is lit and red light is NOT lit.

Notes/Comments

6	Close the BIT recirc valves.	Procedure Step 3d

CRITICAL STEP	SAT [ ] UNSAT [ ]

STANDARDS	1-SI-TV-1884A, 1884B, and 1884C CLOSE pushbuttons are depressed.

Dead simulator cue	1-SI-TV-1884A, 1884B, and 1884C green lights are all lit and red lights are NOT lit.

Notes/Comments: Closing **either** TV-1884A or 1884C is sufficient to satisfy the critical step.

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:

8	Open BIT inlet valve.	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.

Notes/Comments:

9	Open LHSI pump suction valve from RWST.	Procedure Step 4a

STANDARDS	1-SI-MOV-1862A is verified open.

SAT [ ]   UNSAT [ ]

Dead simulator cue	1-SI-MOV-1862A red light is lit and green light is NOT lit.

Notes/Comments:

10	Open LHSI pump discharge valve.	Procedure Step 4b1

STANDARDS	1-SI-MOV-1864A is verified open

SAT [ ]   UNSAT [ ]

Dead simulator cue	1-SI-MOV-1864A red light is lit and green light is NOT lit.

Notes/Comments

| 11 | Open LHSI pump 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 light is NOT lit. |

Notes/Comments

| 12 | Verify SW spray valves open. | Procedure Step 5a |

| STANDARDS | Pressure is verified on in-service SW spray headers. |

SAT [ ]   UNSAT [ ]

| Dead simulator cue | Pressure is indicated on the in-service SW spray headers. |

Notes/Comments:

| 13 | Verify SW spray bypass valves closed. | Procedure Step 5b |

| 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 STEP** | SAT [ ]   UNSAT [ ] |

| STANDARDS | Control switch for 1-SI-P-1A is placed in AUTO |

| Dead simulator cue | "A" LHSI pump motor ammeter pegged high, then decreased to 28. |

Notes/Comments

| 15 | Verify RCP seal injection and seal cooling has been isolated. | Procedure Step 6b1 |

| STANDARDS | RCP seal injection and seal cooling is verified isolated. |

| SAT [ ]   UNSAT [ ] |

| Examiner's cue | Review the JPM initial conditions. |

Notes/Comments: If candidate requests status of RCP seal injection and seal cooling, read the above cue.

| 16 | Start charging pump. | Procedure Step 6b2 |

| CRITICAL STEP | SAT [ ]   UNSAT [ ] |

| STANDARDS | 1-CH-P-1A or 1-CH-P-1C control switch is placed in AUTO. |

| Dead simulator cue | Charging pump motor ammeter pegged high, then decreased to 97. |

Notes/Comments

>>>>> **END OF EVALUATION** <<<<<

STOP TIME _____

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.

TASK

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 / Date		

EVALUATOR'S COMMENTS

_____

_____

_____

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.

TOOLS AND EQUIPMENT

None

PERFORMANCE STEPS

START TIME _____

| 1 | Verify that both trains 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 level greater than 23%. | Procedure Step 2 |

| STANDARDS | RWST level is verified >23%. |

SAT [ ]   UNSAT [ ]

| Dead simulator cue | RWST level is 97%. |

| Notes/Comments |

3	Open charging pump suction from the RWST.	Procedure Step 3a

CRITICAL STEP	SAT [ ] UNSAT [ ]

STANDARDS	1-CH-MOV-1115D control switch is placed in the OPEN position.

Dead simulator cue	1-CH-MOV-1115D red light is lit and green light is NOT lit.

Notes/Comments

4	Close charging pump suction from the VCT.	Procedure Step 3b

CRITICAL STEP	SAT [ ] UNSAT [ ]

STANDARDS	1-CH-MOV-1115C control switch is placed in the CLOSE position.

Dead simulator cue	1-CH-MOV-1115C green light is lit and red light is NOT lit.

Notes/Comments

5	Close normal charging isolation valve.	Procedure Step 3c

CRITICAL STEP	SAT [ ] UNSAT [ ]

STANDARDS	1-CH-MOV-1289A control switch is placed in the CLOSE position.

Dead simulator cue	1-CH-MOV-1289A green light is lit and red light is NOT lit.

Notes/Comments

6	Close the BIT recirc valves.	Procedure Step 3d

CRITICAL STEP	SAT [ ] UNSAT [ ]

STANDARDS	1-SI-TV-1884A, 1884B, and 1884C CLOSE pushbuttons are depressed.

Dead simulator cue	1-SI-TV-1884A, 1884B, and 1884C green lights are all lit and red lights are NOT lit.

Notes/Comments: Closing **either** TV-1884A or 1884C is sufficient to satisfy the critical step.

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:

8	Open BIT inlet valve.	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.

Notes/Comments:

9	Open LHSI pump suction valve from RWST.	Procedure Step 4a

STANDARDS	1-SI-MOV-1862A is verified open.

SAT [ ]   UNSAT [ ]

Dead simulator cue	1-SI-MOV-1862A red light is lit and green light is NOT lit.

Notes/Comments:

10	Open LHSI pump discharge valve.	Procedure Step 4b1

STANDARDS	1-SI-MOV-1864A is verified open

SAT [ ]   UNSAT [ ]

Dead simulator cue	1-SI-MOV-1864A red light is lit and green light is NOT lit.

Notes/Comments

| 11 | Open LHSI pump 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 light is NOT lit. |

Notes/Comments

| 12 | Verify SW spray valves open. | Procedure Step 5a |

| STANDARDS | Pressure is verified on in-service SW spray headers. |

SAT [ ]   UNSAT [ ]

| Dead simulator cue | Pressure is indicated on the in-service SW spray headers. |

Notes/Comments:

| 13 | Verify SW spray bypass valves closed. | Procedure Step 5b |

| 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 STEP	SAT [ ] UNSAT [ ]

STANDARDS	Control switch for 1-SI-P-1A is placed in AUTO

Dead simulator cue	"A" LHSI pump motor ammeter pegged high, then decreased to 28.

Notes/Comments

15	Verify RCP seal injection and seal cooling has been isolated.	Procedure Step 6b1

STANDARDS	RCP seal injection and seal cooling is verified isolated.

SAT [ ]   UNSAT [ ]

Examiner's cue	Review the JPM initial conditions.

Notes/Comments: If candidate requests status of RCP seal injection and seal cooling, read the above cue.

| 16 | Start charging pump. | Procedure Step 6b2 |

| **CRITICAL STEP** | SAT [ ] UNSAT [ ] |

| STANDARDS | 1-CH-P-1A or 1-CH-P-1C control switch is placed in AUTO. |

| Dead simulator cue | Charging pump motor ammeter pegged high, then decreased to 97. |

Notes/Comments

>>>>> **END OF EVALUATION** <<<<<

STOP TIME _____

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.

TASK

Initiate RCS bleed and feed in response to a loss of secondary heat sink

TASK STANDARDS

RCP's 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 = _____

PERFORMANCE EVALUATION

Rating   [ ] SATISFACTORY   [ ] UNSATISFACTORY

Candidate (Print)   _____

Evaluator (Print)   _____

Evaluator's Signature /
Date   _____

EVALUATOR'S COMMENTS

_____

_____

_____

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.

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%

PERFORMANCE STEPS

START TIME _____

1	Verify all reactor coolant pumps have been placed in STOP.	Procedure Step 15

CRITICAL STEP	SAT [ ] UNSAT [ ]

STANDARDS	Control switches for all reactor coolant pumps are placed in STOP

Dead simulator cue	RCP motor ammeters all indicate zero.

Notes/Comments

2	Place all pressurizer heaters in PULL-TO-LOCK.	Procedure Step 16

CRITICAL STEP	SAT [ ] UNSAT [ ]

STANDARDS	All pressurizer heater control switches are placed in PULL-TO-LOCK

Dead simulator cue	Red and green lights for all PRZR heaters are NOT lit.

Notes/Comments

| 3 | Determine if safety injection has been actuated. | Procedure Step 17 |

| STANDARDS | Permissive status lights P-H1 and P-H2 are verified NOT lit. |

SAT [ ]   UNSAT [ ]

| Dead simulator cue | Permissive status lights P-H1 and P-H2 are NOT lit |

Notes/Comments

| 4 | Manually actuate both trains of safety injection. | Procedure Step 17b RNO |

CRITICAL STEP   SAT [ ]   UNSAT [ ]

| STANDARDS | Either SAFETY INJECTION INITIATE control switch is placed in INITIATE |

Notes/Comments

| 5 | Verify that at least one charging pump is running. | Procedure Step 18a |

| STANDARDS | A and B charging pumps are verified running. |

SAT [ ]   UNSAT [ ]

| Dead simulator cue | A and B charging pump motor ammeters indicate 92 amps |

Notes/Comments

| 6 | Verify charging pump 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 are both lit and green lights are NOT lit |

Notes/Comments

| 7 | Verify charging pump suction valves from VCT are closed. | Procedure Step 18b.2 |

| STANDARDS | 1-CH-MOV-1115C and 1115E are verified closed. |

SAT [ ]   UNSAT [ ]

| Dead simulator cue | 1-CH-MOV-1115C and 1115E green lights are both lit and red lights are NOT lit |

Notes/Comments

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 NOT lit

Notes/Comments

9	Verify BIT outlet valves 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 lit and green lights are NOT lit

Notes/Comments

10	Verify BIT inlet valves 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 lit and green lights are NOT lit

Notes/Comments

| 11 | Verify normal charging valves are closed. | Procedure Step 18b.6 |

| STANDARDS | 1-CH-MOV-1289A and 1289B are verified closed. |

SAT [ ]   UNSAT [ ]

| Dead simulator cue | 1-CH-MOV-1289A and 1289B green lights are both lit and red lights are NOT lit |

| Notes/Comments |

| 12 | Verify that cold-leg safety injection flow is indicated. | Procedure Step 18c |

| STANDARDS | SI flow is verified. |

SAT [ ]   UNSAT [ ]

| Dead simulator cue | 380 gpm flow is indicated on SI-FI-1943 and 1943-1 |

| Notes/Comments |

| 13 | Reset both trains of safety injection. | Procedure Step 19 |

| STANDARDS | SI reset switches are both placed in RESET. |

SAT [ ]   UNSAT [ ]

| Dead simulator cue | Permissive status light P-H1 is NOT lit, status light P-H2 is lit |

| Notes/Comments |

| 14 | Reset both trains of phase "A" isolation. | Procedure Step 20 |

| STANDARDS | Phase A reset switches are both placed in RESET. |

SAT [ ]   UNSAT [ ]

| Dead simulator cue | Annunciator K-H7 is NOT lit |

| Notes/Comments |

| 15 | Reset both trains of phase "B" isolation, if necessary. | Procedure Step 21 |

| STANDARDS | Phase B is verified not actuated. |

SAT [ ]   UNSAT [ ]

| Dead simulator cue | Permissive status lights P-H1 and P-H2 are NOT lit |

| Notes/Comments |

| 16 | Establish instrument air to containment. | Procedure Step 22 |

| STANDARDS | 2-IA-C-1 is verified running and containment trip valves are verified open. |

SAT [ ]   UNSAT [ ]

| Dead simulator cue | 2-IA-C-1 red light is lit and green light is not lit, 1-IA-TV-102A and 102B red lights are both lit and green lights are NOT lit. |

| Notes/Comments |

| 17 | Verify that power is available to the pressurizer power-operated relief valve block valves. | Procedure Step 23a |

| STANDARDS | PRZR PORV block valves are verified energized. |

SAT [ ]   UNSAT [ ]

| Dead simulator cue | 1-RC-MOV-1535 and 1536 red lights are both lit and green lights are NOT lit |

| Notes/Comments |

18	Verify that both pressurizer power-operated relief valve block valves are open.	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 lit and green lights are NOT lit

Notes/Comments

19	Open both pressurizer power-operated relief valves.	Procedure Step 23c

CRITICAL STEP   SAT [ ]   UNSAT [ ]

STANDARDS	Control switches for 1-RC-PCV-1455C and 1-RC-PCV-1456 are placed in OPEN

Dead simulator cue	1-RC-PCV-1455C red light is lit and green light is NOT lit, 1-RC-PCV-1456 green light is lit and red light is NOT lit

Notes/Comments:

20	Try to open PORVs using NDT protection key switches.	Procedure Step 23c RNO

CRITICAL STEP	SAT [ ] UNSAT [ ]

STANDARDS	Keyswitch for 1-RC-PCV-1456 is placed in OPEN

Dead simulator cue	1-RC-PCV-1455C red light is lit and green light is NOT lit, 1-RC-PCV-1456 green light is lit and red light is NOT lit

Notes/Comments:

21	Verify that the Reactor Coolant System bleed path is adequate.	Procedure Step 24

STANDARDS	PRZR PORVs and block valves are checked and PCV-1456 is determined to be closed.

SAT [ ] UNSAT [ ]

Dead simulator cue	1-RC-PCV-1455C red light is lit and green light is NOT lit, 1-RC-PCV-1456 green light is lit and red light is NOT lit

Notes/Comments

22	Open the reactor head vent valves.	Procedure Step 24a RNO

CRITICAL STEP	SAT [ ] UNSAT [ ]

STANDARDS	Control switch for each of the following reactor vent valves is placed in OPEN: • 1-RC-SOV-101A-1 • 1-RC-SOV-101B-1 • 1-RC-SOV-101A-2 • 1-RC-SOV-101B-2

Dead simulator cue	1-RC-SOV-101A-1, 101B-1, 101A-2, and 101B-2 red lights are all lit and green lights are NOT lit

Notes/Comments

22	Open the PRZR vent valves.	Procedure Step 24b RNO

CRITICAL STEP	SAT [ ] UNSAT [ ]

STANDARDS	Control switch for each of the following PRZR vent valves is placed in OPEN: • 1-RC-SOV-102A-1 • 1-RC-SOV-102B-1 • 1-RC-SOV-102A-2 • 1-RC-SOV-102B-2

Dead simulator cue	1-RC-SOV-102A-1, 102B-1, 102A-2, and 102B-2 red lights are all lit and green lights are NOT lit

Notes/Comments

23	Align low-pressure water source.	Procedure Step 24c RNO

STANDARDS	Auxiliary operator is requested to align low-pressure water source.

Examiner's cue	Assume that another operator will complete the procedure

Notes/Comments

>>>>> **END OF EVALUATION** <<<<<

STOP TIME _____

SIMULATOR SETUP

JOB PERFORMANCE MEASURE
R223

CHECKLIST

_____ Recall 100% power IC (IC-172)

_____ Enter switch overrides:
- PCV456_OPEN, time delay = 0, override = OFF, trigger = none
- PCV456_N2_OPEN, time delay = 0, override = OFF, trigger = none

_____ 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 second 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.

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

INITIATING CUE

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

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 = _____

PERFORMANCE EVALUATION

Rating   [ ] SATISFACTORY   [ ] UNSATISFACTORY

Candidate (Print)   _____

Evaluator (Print)   _____

Evaluator's Signature /
Date   _____

EVALUATOR'S COMMENTS

_____

_____

_____

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.

TOOLS AND EQUIPMENT

None

PERFORMANCE STEPS

START 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 MANUAL.

Notes/Comments: Malfunction will occur 10 seconds after simulator is placed in RUN.

2	Verify that rod motion 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, Reactor Trip or Safety Injection.	AP-1.1, step 2 RNO and E-0, step 1

CRITICAL STEP	SAT [ ] UNSAT [ ]

STANDARDS	Either reactor trip switch is placed in TRIP.

Dead simulator cue	Red lights are NOT lit and green lights are lit for both reactor trip breakers.

Notes/Comments

4	Manually trip turbine.	E-0, step 2a

STANDARDS	Both turbine trip pushbuttons are simultaneously depressed.

SAT [ ]   UNSAT [ ]

Notes/Comments

5	Verify all turbine stop 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 green lights are NOT lit, turbine stop valve status lights are NOT lit.

Notes/Comments

| 6 | Place both EHC pumps in PTL. | E-0, step 2b RNO |

| STANDARDS | Both EHC pumps are placed in Pull-To-Lock. |

SAT [ ]   UNSAT [ ]

| Dead simulator cue | Turbine stop valve red lights are lit and green lights are NOT lit, turbine stop valve status lights are NOT lit. |

Notes/Comments

| 7 | Manually run back the turbine. | E-0, step 2b RNO |

| STANDARDS | TURB MAN pushbutton is depressed, then GV FAST and GV ⇓ pushbuttons are simultaneously depressed. |

SAT [ ]   UNSAT [ ]

| Dead simulator cue | Turbine stop valve red lights are lit and green lights are NOT lit, turbine stop valve status lights are NOT lit. |

Notes/Comments

| 8 | Close MSTV's and Bypass Valves. | E-0, step 2b RNO |

| **CRITICAL STEP** | SAT [ ]   UNSAT [ ] |

| STANDARDS | MSTV App-R fire emergency close pushbutton is rotated to EMER position and depressed, OR CLOSE pushbuttons for all three MSTVs are depressed. |

| Dead simulator cue | Red lights are NOT lit and green lights are lit for all three MSTVs. Annunciator F-G1 is lit. |

Notes/Comments

9	Reset reheaters	E-0, step 2c

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

10	Verify generator output breaker open.	E-0, step 2d

SAT [ ]   UNSAT [ ]

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

| 11 | Manually open G-12 and exciter field breaker. | E-0, step 2d RNO |

| CRITICAL STEP | SAT [ ] UNSAT [ ] |

| STANDARDS | G-12 control switch is placed in TRIP and exciter field breaker control switch is placed in TRIP. |

Notes/Comments: Inform candidate that the team will complete verification of immediate actions.

>>>>> END OF EVALUATION <<<<<

STOP 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.

_____ Block reactor from automatically tripping:
- Remote functions – rod control, RD32 & RD38, delay time = 0, trigger = none
- Remote function – SSPS, AMSAC_DEFEAT = true, delay time = 0, trigger = none

_____ Prevent turbine from tripping:
- TU02, override = true, delay time = 0, trigger = none
- TU03, override = true, delay time = 0, trigger = none
- TMP3_STOP, override = OFF, delay time = 0, ramp = 0, trigger = none
- TMP3_LOCK, override = OFF, delay time = 0, ramp = 0, trigger = none
- TURBINE_MAN, override = OFF, delay time = 0, ramp = 0, trigger = none

_____ Prevent generator output breaker (and switchyard breakers) from opening:
- GMG12TRIP_FAIL, remote value = trip, delay time = 0, trigger = none

_____ 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

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.

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 = _____

PERFORMANCE EVALUATION

Rating	[ ] SATISFACTORY	[ ] UNSATISFACTORY
Candidate (Print)		
Evaluator (Print)		
Evaluator's Signature / Date		

EVALUATOR'S COMMENTS

_____

_____

_____

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.

TOOLS AND EQUIPMENT

None

PERFORMANCE STEPS

START 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 MANUAL.

Notes/Comments: Malfunction will occur 10 seconds after simulator is placed in RUN.

2	Verify that rod motion 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, Reactor Trip or Safety Injection.	AP-1.1, step 2 RNO and E-0, step 1

CRITICAL STEP	SAT [ ] UNSAT [ ]

STANDARDS	Either reactor trip switch is placed in TRIP.

Dead simulator cue	Red lights are NOT lit and green lights are lit for both reactor trip breakers.

Notes/Comments

4	Manually trip turbine.	E-0, step 2a

STANDARDS	Both turbine trip pushbuttons are simultaneously depressed.

SAT [ ] UNSAT [ ]

Notes/Comments

5	Verify all turbine stop 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 green lights are NOT lit, turbine stop valve status lights are NOT lit.

Notes/Comments

6	Place both EHC pumps in PTL.	E-0, step 2b RNO

STANDARDS	Both EHC pumps are placed in Pull-To-Lock.

SAT [ ] UNSAT [ ]

Dead simulator cue	Turbine stop valve red lights are lit and green lights are NOT lit, turbine stop valve status lights are NOT lit.

Notes/Comments

7	Manually run back the turbine.	E-0, step 2b RNO

STANDARDS	TURB MAN pushbutton is depressed, then GV FAST and GV ⇓ pushbuttons are simultaneously depressed.

SAT [ ] UNSAT [ ]

Dead simulator cue	Turbine stop valve red lights are lit and green lights are NOT lit, turbine stop valve status lights are NOT lit.

Notes/Comments

8	Close MSTV's and Bypass Valves.	E-0, step 2b RNO

CRITICAL STEP	SAT [ ] UNSAT [ ]

STANDARDS	MSTV App-R fire emergency close pushbutton is rotated to EMER position and depressed, OR CLOSE pushbuttons for all three MSTVs are depressed.

Dead simulator cue	Red lights are NOT lit and green lights are lit for all three MSTVs. Annunciator F-G1 is lit.

Notes/Comments

9	Reset reheaters	E-0, step 2c

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

10	Verify generator output breaker open.	E-0, step 2d

SAT [ ]   UNSAT [ ]

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

11	Manually open G-12 and exciter field breaker.	E-0, step 2d RNO

CRITICAL STEP	SAT [ ] UNSAT [ ]

STANDARDS	G-12 control switch is placed in TRIP and exciter field breaker control switch is placed in TRIP.

Notes/Comments: Inform candidate that the team will complete verification of immediate actions.

>>>>> END OF EVALUATION <<<<<

STOP TIME _____

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.

_____ Block reactor from automatically tripping:
  - Remote functions – rod control, RD32 & RD38, delay time = 0, trigger = none
  - Remote function – SSPS, AMSAC_DEFEAT = true, delay time = 0, trigger = none

_____ Prevent turbine from tripping:
  - TU02, override = true, delay time = 0, trigger = none
  - TU03, override = true, delay time = 0, trigger = none
  - TMP3_STOP, override = OFF, delay time = 0, ramp = 0, trigger = none
  - TMP3_LOCK, override = OFF, delay time = 0, ramp = 0, trigger = none
  - TURBINE_MAN, override = OFF, delay time = 0, ramp = 0, trigger = none

_____ Prevent generator output breaker (and switchyard breakers) from opening:
  - GMG12TRIP_FAIL, remote value = trip, delay time = 0, trigger = none

_____ 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

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.

R693

TASK

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 = _____

PERFORMANCE EVALUATION

Rating   [ ] SATISFACTORY   [ ] UNSATISFACTORY

Candidate (Print)   _____

Evaluator (Print)   _____

Evaluator's Signature /
Date   _____

EVALUATOR'S COMMENTS

_____

_____

_____

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 I 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.

TOOLS AND EQUIPMENT

None

PERFORMANCE STEPS

START 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, "B" and "C" both indicate zero.

Notes/Comments

2	Adjust charging flow as necessary to maintain pressurizer level.	Procedure Step 1b

CRITICAL STEP	SAT [ ] UNSAT [ ]

STANDARDS	Normal charging FCV-1122 controller output is raised

Dead simulator cue	FCV-1122 output is now 100%.

Notes/Comments

3	Check letdown valves closed.	Procedure Step 2a RNO

CRITICAL STEP	SAT [ ] UNSAT [ ]

STANDARDS	1-CH-HCV-1200A, 1200B, and 1200C control switches are placed in CLOSE
	1-CH-LCV-1460A and 1460B control switches are placed in CLOSE

Dead simulator cue	1-CH-HCV-1200A, 1200B, and 1200C green lights are lit and red lights are NOT lit. 1-CH-LCV-1460A and 1460B green lights are lit and red lights are NOT lit.

Notes/Comments: Closing HCV-1200A, 1200B, 1200C, and **either 1460A or** 1460B satisfies the critical step.

4	Check RHR to letdown valve closed.	Procedure Step 2b RNO

CRITICAL STEP	SAT [ ] UNSAT [ ]

STANDARDS	1-CH-HCV-1142 controller demand is lowered to zero

Dead simulator cue	1-CH-HCV-1142 controller demand is now zero.

Notes/Comments:

5	Check loop drain valves closed.	Procedure Step 2c

STANDARDS	Loop drain valves 1-RC-HCV-1557A, 1557B and 1557C are verified closed.

SAT [ ]   UNSAT [ ]

Dead simulator cue	1-RC-HCV-1557A, 1557B, and 1557C green lights are NOT lit and red lights are NOT lit.

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 closed.

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 RCS 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:

8	Evacuate all unnecessary personnel from containment.	Procedure Step 3

STANDARDS	Containment evacuation alarm is sounded and plant-paging system is used to direct all unnecessary personnel to evacuate containment.

SAT [ ]   UNSAT [ ]

Notes/Comments

9	Verify that independent Reactor Coolant System level indicator 1-RC-LI-105 is energized.	Procedure Step 4

STANDARDS	RCS independent level indicator is verified de-energized.

SAT [ ]   UNSAT [ ]

Examiner's cue	Review the JPM initial conditions.

Notes/Comments: If candidate requests status of 1-RC-LI-105, read the above cue.

10	Determine mode of 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: If candidate requests unit mode, read the above cue.

11	Check if RHR pumps should be stopped	Procedure Step 6

STANDARDS	RHR pump is verified running normally.

SAT [ ]   UNSAT [ ]

Dead simulator cue	"A" RHR pump amps are stable at 42 and RHR flow is stable at 3,500 gpm.

Notes/Comments

12	Check if charging flow is adequate	Procedure Step 7

STANDARDS	PRZR level is verified less than 21% and decreasing.

SAT [ ]   UNSAT [ ]

Dead simulator cue	Pressurizer level is 15% and decreasing

Notes/Comments: This is the alternate path (RNO) step.

| 13 | Verify only one charging pump running | Procedure Step 11a |

| STANDARDS | Charging pumps are observed and only one is verified running. |

SAT [ ] UNSAT [ ]

| Dead simulator cue | "A" charging pump motor ammeter indicates 92, "B" and "C" both indicate zero. |

Notes/Comments

| 14 | Open charging pump suction valves from RWST | Procedure Step 11b |

| STANDARDS | 1-CH-MOV-1115B and 1115D are verified open. |

SAT [ ] UNSAT [ ]

| Dead simulator cue | MOV-1115B and 1115D red lights are both lit and green lights are NOT lit. |

Notes/Comments:

| 15 | Close charging pump suction valves from VCT | Procedure Step 11c |

| STANDARDS | 1-CH-MOV-1115C and 1115E are verified closed. |

SAT [ ] UNSAT [ ]

| Dead simulator cue | MOV-1115B and 1115D green lights are both lit and red lights are NOT lit. |

Notes/Comments:

16	Close BIT recirc valves	Procedure Step 11d

CRITICAL STEP	SAT [ ] UNSAT [ ]

STANDARDS	1-SI-TV-1884A, 1884B and 1884C CLOSE pushbuttons are depressed

Dead simulator cue	TV-1884A, 1884B, and 1884C green lights are all lit and red lights are NOT lit.

Notes/Comments: Closing either TV-1884A or 1884C satisfies the critical step.

17	Open BIT outlet valves.	Procedure Step 11e

CRITICAL STEP	SAT [ ] UNSAT [ ]

STANDARDS	OPEN pushbuttons for 1-SI-MOV-1867C and 1867D are depressed.

Dead simulator cue	1-SI-MOV-1867C and 1867D red lights are both lit and green lights are NOT lit.

Notes/Comments: Opening either MOV-1867C or 1867D satisfies the critical step.

18	Open BIT inlet valves.	Procedure Step 11f

CRITICAL STEP	SAT [ ] UNSAT [ ]

STANDARDS	OPEN pushbuttons for 1-SI-MOV-1867A and 1867B are depressed.

Dead simulator cue	1-SI-MOV-1867A and 1867B red lights are both lit and green lights are NOT lit.

Notes/Comments: Opening either MOV-1867A or 1867B satisfies the critical step.

19	Close normal charging line isolation valves.	Procedure Step 11g

CRITICAL STEP	SAT [ ] UNSAT [ ]

STANDARDS	1-CH-MOV-1289A and 1289B control switches are placed in the CLOSE position.

Dead simulator cue	1-CH-MOV-1289A and 1289B green lights are both lit and red lights are NOT lit.

Notes/Comments: Closing either MOV-1289A or 1289B satisfies the critical step.

20	Close charging pump recirc valves.	Procedure Step 11h

CRITICAL STEP	SAT [ ] UNSAT [ ]

STANDARDS	1-CH-MOV-1275A, 1275B, and 1275C control switches are placed in the CLOSE position.

Dead simulator cue	1-CH-MOV-1275A, 1275B, and 1275C green lights are all lit and red lights are NOT lit.

Notes/Comments

21	Actuate phase A isolation	Procedure Step 12

CRITICAL STEP	SAT [ ] UNSAT [ ]

STANDARDS	Either control switch for phase A isolation is placed in INITIATE

Dead simulator cue	Annunciator K-H7 is lit.

Notes/Comments:

22	Evaluate the need to implement EPIP-1.01, "Emergency Manager Controlling Procedure."	Procedure Step 13

SAT [ ] UNSAT [ ]

Examiner's cue	The Station Emergency Manager has initiated EPIP-1.01.

Notes/Comments

23	Check if RCPs must be stopped	Procedure Step 14a

STANDARDS	RCP #1 seal ΔP indications are verified less than 200 psid.

SAT [ ]   UNSAT [ ]

Dead simulator cue	RCP seal ΔP is less than 200 psid on the running RCPs.

Notes/Comments

24	Stop the affected RCPs.	Procedure Step 14b

CRITICAL STEP   SAT [ ]   UNSAT [ ]

STANDARDS	Control switches for the "A" and "C" reactor coolant pumps are placed in AUTO-AFTER-STOP or PULL-TO-LOCK.

Dead simulator cue	"A" and "C" RCP motor ammeters indicate zero.

Notes/Comments: If RCP seal delta-P remains above 200 psid, this step is NOT critical.

25	Verify the alignment of the low-head safety injection pump	Procedure Step 15

STANDARDS	LHSI suction and discharge valves are verified open.

SAT [ ]   UNSAT [ ]

Dead simulator cue	1-SI-MOV-1862A and 1864A red lights are both lit and green lights are NOT lit.

Notes/Comments

26	Check if low-head safety injection flow is required	Procedure Step 16

STANDARDS	RCS subcooling is verified > 35°F.

SAT [ ]   UNSAT [ ]

Dead simulator cue	RCS subcooling is 159°F.

Notes/Comments

27	Verify adequate safety injection flow	Procedure Step 17a

STANDARDS	RVLIS dynamic indication is verified > 67% (2 RCPs running) OR RVLIS full-range indication is verified 51% (all RCPs secured).

SAT [ ]   UNSAT [ ]

Dead simulator cue	RVLIS dynamic indicates 59% (2 RCPs running) OR RVLIS full-range indicates 104% (all RCPs secured).

Notes/Comments

28	Check if core exit temperatures are stable	Procedure Step 17b

STANDARDS	Core-exit TCs are verified stable or decreasing.

SAT [ ]   UNSAT [ ]

Dead simulator cue	Core-exit TCs are stable.

Notes/Comments

29	Check if the Reactor Coolant System hot-leg temperatures are stable	Procedure Step 18

SAT [ ]   UNSAT [ ]

Examiner's cue	Assume that another operator will complete the procedure

Notes/Comments

>>>>> END OF EVALUATION <<<<<

STOP TIME _____

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

_____ Recall the IC for mode 4 with temperature = 285° F (IC-170)

_____ Ensure "A" charging pump is running with suction aligned to the volume control tank

_____ Ensure all three letdown orifice HCVs are open

_____ Close CH-217 on PNID

_____ Enter MRC0101_DEG = 0.1

_____ Place simulator in RUN

_____ Place the simulator in FREEZE

_____ After applicant isolates letdown, increase the leak degradation to 0.13.

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

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.

Dominion
North Anna Power Station
JOB PERFORMANCE MEASURE EVALUATION

OPERATOR PROGRAM

R707

TASK

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 CC pump restarted prior to exceeding RCP trip criteria.

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 = _____

PERFORMANCE EVALUATION

Rating   [ ] SATISFACTORY   [ ] UNSATISFACTORY

Candidate (Print)   _____

Evaluator (Print)   _____

Evaluator's Signature /
Date   _____

EVALUATOR'S COMMENTS

_____

_____

_____

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.

TOOLS AND EQUIPMENT

None

PERFORMANCE STEPS

START 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/Comments

2	Align to refill the component cooling water head tank.	Procedure Step 1a RNO

CRITICAL STEP	SAT [ ] UNSAT [ ]

STANDARDS	Auxiliary operators are requested to align to refill the CC head tank

Booth operator cue	Condensate is being aligned to fill the CC head tank level.

Notes/Comments

3	Put CC pumps in PTL	Procedure Step 1b1 RNO

CRITICAL STEP	SAT [ ] UNSAT [ ]

STANDARDS	Control switches for 1-CC-P-1A and 1-CC-P-1B are placed in PTL

Dead simulator cue	CC pump motor ammeters both indicate zero.

Notes/Comments

4	Locally isolate the ruptured equipment supplied by the Component Cooling Water System.	Procedure Step 1b2 RNO

CRITICAL STEP	SAT [ ] UNSAT [ ]

STANDARDS	Auxiliary operator is requested to locate and isolate CC leakage.

Booth operator cue	Auxiliary operator acknowledges direction to locate and isolate CC leak.

Notes/Comments

| 5 | Determine if the unit-1 and unit-2 Component Cooling Water Systems are cross-connected. | Procedure Step 8 |

| STANDARDS | CC systems are verified split-out. |

SAT [ ]   UNSAT [ ]

| Examiner's cue | Review the JPM initial conditions. |

Notes/Comments: If candidate requests the status of CC systems, read the above cue.

| 6 | Monitor RCP temperatures. | Procedure Step 10 |

| STANDARDS | RCP temperatures are verified within limits. |

SAT [ ]   UNSAT [ ]

| Dead simulator cue | RCP temperatures are increasing, but no maximum temperature limits have been exceeded |

Notes/Comments

7	Isolate normal letdown.	Procedure Step 11

CRITICAL STEP	SAT [ ] UNSAT [ ]

STANDARDS	1-CH-HCV-1200B control switch is placed in CLOSE
	1-CH-LCV-1460A and 1460B control switches are placed in CLOSE.

Dead simulator cue	HCV-1200B, LCV-1460A and 1460B green lights are all lit and red lights are NOT lit.

Notes/Comments: Closing HCV-1200B, and either 1460A or 1460B satisfies the critical step.

8	Check excess letdown secured.	Procedure Step 12

STANDARDS	Excess letdown valves are verified closed.

SAT [ ]   UNSAT [ ]

Dead simulator cue	HCV-1201 green light is lit and red light is NOT lit. HCV-1137 controller demand is zero.

Notes/Comments

| 9 | Isolate normal charging. | Procedure Step 13 |

CRITICAL STEP   SAT [ ]   UNSAT [ ]

| STANDARDS | 1-CH-FCV-1122 controller output is manually decreased to zero. |

| Dead simulator cue | FCV-1122 controller output is now zero. |

Notes/Comments

| 10 | Isolate seal water return. | Procedure Step 14 |

CRITICAL STEP   SAT [ ]   UNSAT [ ]

| STANDARDS | 1-CH-MOV-1380 CLOSE pushbutton is depressed. |

| Dead simulator cue | MOV-1380 green light is lit and red light is NOT lit. |

Notes/Comments

| 11 | Adjust reactor coolant pump seal injection. | Procedure Step 15 |

| STANDARDS | 1-CH-HCV-1186 controller output is decreased until each RCP's seal injection flow indicates approximately 6 gpm |

SAT [ ]   UNSAT [ ]

| Dead simulator cue | Seal injection to each RCP is approximately 6 gpm. |

Notes/Comments

12	Verify that CC head tank level is stable or increasing.	Procedure Step 16

STANDARDS	CC head tank level is verified off-scale low.

SAT [ ]　UNSAT [ ]

Dead simulator cue	CC head tank level indicates off-scale low.

Notes/Comments

13	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	CC pump motor ammeters both indicate zero.

Notes/Comments

14	Locally isolate the ruptured equipment supplied by the Component Cooling Water System.	Procedure Step 16b RNO

STANDARDS	Auxiliary operators are verified dispatched to locate and isolate CC leakage.

SAT [ ]   UNSAT [ ]

Booth operator cue	Auxiliary building operator reports discovering and isolating a ruptured supply pipe to the gas stripper trim cooler.

Notes/Comments

15	Align to refill the component cooling water head tank.	Procedure Step 16c RNO

STANDARDS	Auxiliary operators are verified aligning to refill the CC head tank.

SAT [ ]   UNSAT [ ]

Booth operator cue	Condensate is aligned to fill the CC head tank level.

Notes/Comments

16	When component cooling water head tank level is restored, go to step 2.	Procedure Step 16d RNO

STANDARDS	CC head tank level is verified on-scale.

SAT [ ]   UNSAT [ ]

Dead simulator cue	CC head tank level indicates 10% and increasing.

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-1B are verified in PTL

SAT [ ]   UNSAT [ ]

Dead simulator cue	CC pump motor ammeters both indicate zero.

Notes/Comments

18	Start a unit-1 CC pump.	Procedure Step 2 RNO

CRITICAL STEP	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 decreased to 55 amps.

Notes/Comments

19	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

20	Verify CC flow is normal.	Procedure Step 4

STANDARDS	CC flow is verified stable.

SAT [ ]   UNSAT [ ]

Dead simulator cue	CC flow is stable at approximately 3,500 gpm per heat exchanger.

Notes/Comments

| 21 | Locally check service water to CC heat exchangers' differential pressures are normal. | Procedure Step 5 |

| STANDARDS | Auxiliary operator is requested to check CCHX delta-Ps. |

SAT [ ]   UNSAT [ ]

| Booth operator cue | Auxiliary building operator reports that the service water differential pressure across the component cooling water heat exchangers is 10 PSID |

Notes/Comments

| 22 | Restore equipment to normal. | Procedure Step 6 |

| STANDARDS | Attachment 2 is initiated. |

SAT [ ]   UNSAT [ ]

| Examiner's cue | Assume that another operator will complete the procedure. |

Notes/Comments

>>>>> **END OF EVALUATION** <<<<<

STOP TIME _____

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

SIMULATOR SETUP

JOB PERFORMANCE MEASURE
R707

CHECKLIST

_____ Recall IC for 100% power (IC-164)

_____ Enter malfunction CC0101, delay time = 0, ramp = 0, severity value = .5

_____ Shut component cooling cross-tie using PNID: CC-49 = 0

_____ Run simulator until component cooling surge tank is 0%

_____ Place the simulator in FREEZE; then delete the malfunction

_____ When directed by procedure to fill the component cooling surge tank, slowly open CN-41 to 0.2 on PNID (verify that CC-625 LCV bypass is open)

When requested to align to fill the CC head tank, read the following cue:

Booth operator cue	Condensate is being aligned to fill the CC head tank level.

When requested to locate CC leak, read the following cue:

Booth operator cue	Auxiliary building operator acknowledges direction to locate and isolate CC leak.

When contacted concerning status 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 contacted concerning status of CC head tank fill, read the following cue:

Booth operator cue	Condensate is aligned to fill the CC head tank level.

When requested 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

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.

TASK

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 = _____

PERFORMANCE EVALUATION

Rating   [ ] SATISFACTORY   [ ] UNSATISFACTORY

Candidate (Print)   _____

Evaluator (Print)   _____

Evaluator's Signature /
Date   _____

EVALUATOR'S COMMENTS

_____

_____

_____

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.

TOOLS AND EQUIPMENT

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

PERFORMANCE STEPS

START TIME _____

1	Verify that the containment air recirculation fan chilled water supply valves are open.	Procedure Step 3a

CRITICAL STEP	SAT [ ] UNSAT [ ]

STANDARDS	Control switch for 1-CC-TV-115A, 115B, and 115C is placed in the CD position

Dead simulator cue	1-CC-TV-115A, 115B, and 115C red lights are all lit and green lights are NOT lit.

Notes/Comments

2	Verify that the containment air recirculation fan chilled water return valves are open.	Procedure Step 3b

STANDARDS	1-CC-TV-105A, 105B, 105C and 100A, 100B, 100C are verified open.

	SAT [ ] UNSAT [ ]

Dead simulator cue	1-CC-TV-105A, 105B, 105C and 100A, 100B, 100C red lights are all lit and green lights are NOT lit.

Notes/Comments

3	Verify that the containment 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 and green lights are NOT lit.

Notes/Comments

4	Verify that the chilled water system is in service.	Procedure Step 3d

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 water, read the above cue.

5	Check that the control rod drive mechanism cooling fans are running.	Procedure Step 4

STANDARDS	1-HV-F-37C, 37D, and 37E are verified running.

SAT [ ]   UNSAT [ ]

Dead simulator cue	1-HV-F-37C, 37D, and 37E red lights are all lit and green lights are NOT lit.

Notes/Comments

| 6 | Check containment pressure stable or decreasing. | Procedure Step 5 |

| STANDARDS | Containment pressure is verified increasing. |

SAT [ ] UNSAT [ ]

| Dead simulator cue | Containment pressure is 22 psia and slowly increasing |

Notes/Comments

| 7 | Check recirculation spray sump level. | Procedure Step 8 |

| STANDARDS | Recirc spray sump level is verified greater than 1' 4". |

SAT [ ] UNSAT [ ]

| Dead simulator cue | Recirc spray sump level is 1' 8" and slowly increasing. |

Notes/Comments

| 8 | Check that 1-RS-P-1A is available. | Procedure Step 9 |

| STANDARDS | Recirc spray pump 1-RS-P-1A is verified available. |

SAT [ ] UNSAT [ ]

| Dead simulator cue | 1-RS-P-1A is in auto-after stop and 1H bus is energized. |

Notes/Comments

9	Align service water to 1-RS-E-1A.	Procedure Step 10a

CRITICAL STEP	SAT [ ] UNSAT [ ]

STANDARDS	OPEN push-buttons for 1-SW-MOV-101A, 103A, 104A, and 105C are depressed

Dead simulator cue	1-SW-MOV-101A, 103A, 104A and 105C red lights are all lit and green lights are NOT lit.

Notes/Comments

10	Start inside recirculation spray pump 1-RS-P-1A.	Procedure Step 10b

CRITICAL STEP	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 decreased to 320 amps.

Notes/Comments

11	Operate 1-RS-P-1A to maintain containment pressure between 10.5 psia and 13 psia.	Procedure Step 11

STANDARDS	Containment pressure is verified decreasing.

SAT [ ]   UNSAT [ ]

Examiner's cue	Assume that another operator will complete the procedure

Dead simulator cue	Containment pressure is now 21 psia and decreasing

Notes/Comments

>>>>> **END OF EVALUATION** <<<<<

STOP TIME _____

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

SIMULATOR SETUP

JOB PERFORMANCE MEASURE
R765

TASK

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

CHECKLIST

_____ 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