ADMINISTRATIVE JOB PERFORMANCE MEASURE

UNIT: 2 **REV #:** 001 **DATE:** _____

SYSTEM/DUTY AREA: Conduct of Operations A1

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

JTA#: ANO-2-RO-OPROC-NORM-62

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

APPROVED FOR ADMINISTRATION TO: **RO:** X **SRO:** _____

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

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE: _____ **SIMULATOR:** Perform **CLASSROOM:** Perform

POSITION EVALUATED: **RO:** _____ **SRO:** _____

ACTUAL TESTING ENVIRONMENT: **SIMULATOR:** _____ **PLANT SITE:** _____ **CLASSROOM:** _____

TESTING METHOD: **SIMULATE:** _____ **PERFORM:** _____

APPROXIMATE COMPLETION TIME IN MINUTES: 15 Minutes

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

EXAMINEE'S NAME: _____ **Badge #:** _____

EVALUATOR'S NAME: _____

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

SATISFACTORY: _____ **UNSATISFACTORY:** _____

PERFORMANCE CHECKLIST COMMENTS:

_____

_____

Start Time _____ **Stop Time** _____ **Total Time** _____

SIGNED: _____ **DATE:** _____

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

ADMINISTRATIVE JOB PERFORMANCE MEASURE

THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:

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

JPM INITIAL TASK CONDITIONS:

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  - Group 6 CEAs are being used for ASI control and are 75" withdrawn.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

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

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

ADMINISTRATIVE JOB PERFORMANCE MEASURE

INITIATING CUE:

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

START TIME: _____

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

STOP TIME: _____

ADMINISTRATIVE JOB PERFORMANCE MEASURE

EXAMINER'S COPY

JPM INITIAL TASK CONDITIONS:

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

INITIATING CUE:

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

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

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

ADMINISTRATIVE JOB PERFORMANCE MEASURE

EXAMINEE'S COPY

JPM INITIAL TASK CONDITIONS:

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

INITIATING CUE:

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

Applicable CEA insertion limits (If any) _____

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

ADMINISTRATIVE JOB PERFORMANCE MEASURE

UNIT: 2 **REV #:** 001 **DATE:** _____

SYSTEM/DUTY AREA: Conduct of Operations A2

TASK: Calculate Time to Boil using computer program

JTA#: ANO2-RO-NORM4

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

APPROVED FOR ADMINISTRATION TO: RO: X **SRO:** _____

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

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE: _____ **SIMULATOR:** Perform **Classroom:** Perform

POSITION EVALUATED: RO: X **SRO:** _____

ACTUAL TESTING ENVIRONMENT: SIMULATOR: _____ **PLANT SITE:** _____ **Classroom:** _____

TESTING METHOD: SIMULATE: _____ **PERFORM:** _____

APPROXIMATE COMPLETION TIME IN MINUTES: 15 Minutes

REFERENCE(S): 1015.008 Attachment E

EXAMINEE'S NAME: _____ **BADGE#:** _____

EVALUATOR'S NAME: _____

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

SATISFACTORY: _____ **UNSATISFACTORY:** _____

PERFORMANCE CHECKLIST COMMENTS:

_____

_____

Start Time	Stop Time	Total Time
_____	_____	_____

SIGNED: _____ **DATE:** _____

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

ADMINISTRATIVE JOB PERFORMANCE MEASURE

THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:

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

JPM INITIAL TASK CONDITIONS:

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

Time after shutdown = 50 hours; one (1) PZR code safety valve is removed; PZR manway is installed; ECCS vent valves are de-energized OPEN; NO RCP seal work inprogress; NO RCS cold or hot leg openings; RCS Temperature is 101°F. Nozzle Dams are not installed.

TASK STANDARD:

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

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

TASK PERFORMANCE AIDS:

1015.008 attachment E, Computer operational with the current revision of LOSDC2 installed (SP-94-C-0001-01, Rev. 13), set up shortcut to program on the desktop.

SIMULATOR SETUP:

NA

EXAMINER'S NOTES:

ADMINISTRATIVE JOB PERFORMANCE MEASURE

INITIATING CUE:

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

PERFORMANCE CHECKLIST			STANDARDS	(Circle One)
	1.	Start a time to boil (TTB) calculation using LOSDC2 program.	Computer program started	N/A SAT UNSAT
	2.	Time since shutdown: 2days 2 hours	Recorded time 50 hours	N/A SAT UNSAT
	3.	Decay Heat Produced 12,765.59 BTU/Sec	Recorded decay heat 12,765.59 BTU/Sec	N/A SAT UNSAT
(C)	4.	Time until coolant boils: 15 min	Recorded to boil 15 to 16 min.	N/A SAT UNSAT
(C)	5.	Time until core uncovery: 2 hours 5 min 15 sec	Recorded time to core uncovery 2 hours to 2 hours 10 min.	N/A SAT UNSAT
	6.	Makeup rate: 86 gpm	Recorded makeup rate 86 gpm	N/A SAT UNSAT
	4.	Heat Up rate: 7.13 °F/min	Recorded heat up rate 7.13 °F/min	N/A SAT UNSAT
	5.	RCS eq. Press: 47.1 psia	Recorded RCS eq. Press 47.1 psia	N/A SAT UNSAT
	6.	Time until 10 F from bulk boiling: 13.6 min	Recorded time to 10° from bulk boiling 13.6 min	N/A SAT UNSAT
EXAMINER'S NOTE: Prompt the Examinee that the file should not be printed or saved.				
END				

ADMINISTRATIVE JOB PERFORMANCE MEASURE

EXAMINER'S COPY

JPM INITIAL TASK CONDITIONS:

Given the following Plant conditions:

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

INITIATING CUE:

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

Record calculations below:

Time since shutdown: _____

Decay Heat Produced: _____

Time until coolant boils: _____

Time until core uncovery: _____

Makeup rate: _____

Heat Up rate: _____

RCS eq. Press: _____

Time until 10 °F from bulk boiling: _____

ADMINISTRATIVE JOB PERFORMANCE MEASURE

EXAMINEE'S COPY

JPM INITIAL TASK CONDITIONS:

Given the following Plant conditions:

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

INITIATING CUE:

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

Record calculations below:

Time since shutdown: _____

Decay Heat Produced: _____

Time until coolant boils: _____

Time until core uncovery: _____

Makeup rate: _____

Heat Up rate: _____

RCS eq. Press: _____

Time until 10 °F from bulk boiling: _____

ADMINISTRATIVE JOB PERFORMANCE MEASURE

UNIT: 2 **REV #:** 001 **DATE:** _____

SYSTEM/DUTY AREA: Equipment Control A3

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

JTA#: ANO2ROHPSISURV16

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

APPROVED FOR ADMINISTRATION TO: **RO:** X **SRO:** _____

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

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE: _____ **SIMULATOR:** Perform **LAB:** _____

POSITION EVALUATED: **RO:** _____ **SRO:** _____

ACTUAL TESTING ENVIRONMENT: **SIMULATOR:** _____ **PLANT SITE:** _____ **LAB:** _____

TESTING METHOD: **SIMULATE:** _____ **PERFORM:** _____

APPROXIMATE COMPLETION TIME IN MINUTES: 15 Minutes

REFERENCE(S): OP 2104.039 Supplement 2

EXAMINEE'S NAME: _____ **SSN:** _____

EVALUATOR'S NAME: _____

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

SATISFACTORY: _____ **UNSATISFACTORY:** _____

PERFORMANCE CHECKLIST COMMENTS:

_____

_____

Start Time _____ **Stop Time** _____ **Total Time** _____

SIGNED: _____ **DATE:** _____

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

ADMINISTRATIVE JOB PERFORMANCE MEASURE

THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:

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

JPM INITIAL TASK CONDITIONS:

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

2P89C is aligned to the GREEN side.

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

TASK STANDARD:

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

Pump ΔP is out of LIMITING RANGE FOR OPERABILITY.

Correct the calculation of pump ΔP.

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

Determine that 2P-89B in inoperable.

TASK PERFORMANCE AIDS:

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

SIMULATOR SETUP:

NA

EXAMINER'S NOTES:

ADMINISTRATIVE JOB PERFORMANCE MEASURE

Initiating CUE:

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

START TIME:_____

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

STOP TIME:_____

ADMINISTRATIVE JOB PERFORMANCE MEASURE

EXAMINER's COPY

INITIAL PLANT CONDITIONS

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

Initiating CUE:

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

ADMINISTRATIVE JOB PERFORMANCE MEASURE

EXAMINEE's COPY

INITIAL PLANT CONDITIONS

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

Initiating CUE:

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

3.0 ACCEPTANCE CRITERIA

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

TABLE 1

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

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

1372.9 + 20.41 (Instrument error) - [(T-40)/4] psid

Minimum ΔP = **1393.31 - [(90 - 40)/4] = 1360.81** psid

3.2 Independently verify pump ΔP calculation.

Performed By: _____Jimmy Reactor_____

3.3 Document observation of check valve stroke in Table 2.

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

3.4 IF NO circled in Table 1 OR 2,
THEN perform the following:

- Declare affected component inoperable.
- Refer to Tech Spec 3.5.2 OR 3.5.3.
- Notify Shift Manager.
- Initiate WR/WO as applicable.

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

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

NOTE

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

3.7 IF 2SI-10C AND/OR 2SI-10B NOT tested (N/A circled in Table 2),
THEN perform the following:

- Initiate notification to perform test during current quarter OR as directed by IST Coordinator.
- Annotate on status board.
- Annotate in Work Exceptions section of WR/WO.

3.8 Pump Data recorded in database AND reviewed by SRO.

3.9 IF this surveillance performed as PMT,
THEN complete Unit 2 IST Data Collection (1015.016O).

Comments _____

Performed By Jimmy Reactor Date TODAY

Sammy Reactor

SUPPLEMENT 2

4.0 SUPERVISOR REVIEW AND ANALYSIS

4.1 Do all measured values recorded in ACCEPTANCE CRITERIA fall within specified LIMITING RANGE FOR OPERABILITY? YES NO

4.2 Do all measured values recorded in ACCEPTANCE CRITERIA fall within ACCEPTABLE NORMAL RANGE? (N/A if all results outside normal range also outside limiting range.) YES NO N/A

4.3 IF NO answered to 4.1,
THEN perform the following corrective actions:

- Verify LCO Tracking Record initiated per Conduct of Operations (1015.001).
- Verify Condition Report initiated.

4.4 IF NO circled in 4.2,
THEN perform the following corrective actions:

- Verify WR/WO has been initiated.
- Complete Surveillance Test Schedule Change Request (1000.009D) to double test frequency.

Comments _____
_____
_____
_____

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

Supervisor _____ Date _____

ADMINISTRATIVE JOB PERFORMANCE MEASURE

UNIT: 2 **REV #:** 000 **DATE:** _____

SYSTEM/DUTY AREA: Radiation Control A4

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

LP#: ASLP-RO-RADP

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

APPROVED FOR ADMINISTRATION TO: RO: X **SRO:** _____

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

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE: _____ **SIMULATOR:** _____ **Classroom:** Perform

POSITION EVALUATED: RO: _____ **SRO:** _____

ACTUAL TESTING ENVIRONMENT: SIMULATOR: _____ **PLANT SITE:** _____ **Classroom:** _____

TESTING METHOD: SIMULATE: _____ **PERFORM:** _____

APPROXIMATE COMPLETION TIME IN MINUTES: 15 Minutes

REFERENCE(S): 1903.033 and 1903.033A form

EXAMINEE'S NAME: _____ **BADGE#:** _____

EVALUATOR'S NAME: _____

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

SATISFACTORY: _____ **UNSATISFACTORY:** _____

PERFORMANCE CHECKLIST COMMENTS:

_____

_____

Start Time _____ **Stop Time** _____ **Total Time** _____

SIGNED: _____ **DATE:** _____

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

ADMINISTRATIVE JOB PERFORMANCE MEASURE

THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:

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

JPM INITIAL TASK CONDITIONS:

The plant is tripped from 100% power.

300 gpm LOCA in progress.

Loss of Offsite power is in progress.

LOCA EOP is being implemented.

RDACS indicates an off site release in progress.

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

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

Site Area Emergency has been declared.

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

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

Your ERIMS dose to date 943 mR.

.

TASK STANDARD:

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

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

Determined that 10CFR20 limits would not be exceeded.

TASK PERFORMANCE AIDS:

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

SIMULATOR SETUP:

NA

EXAMINER'S NOTES:

ADMINISTRATIVE JOB PERFORMANCE MEASURE

INITIATING CUE:

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

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

ADMINISTRATIVE JOB PERFORMANCE MEASURE

EXAMINER'S COPY

JPM INITIAL TASK CONDITIONS:

Given the following Plant conditions:

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

INITIATING CUE:

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

Your estimated TEDE dose: ____4443 - 4793_____ mR

Applicable dose limits (circle one): ANO Administrative / (Federal 10CFR20)

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

ADMINISTRATIVE JOB PERFORMANCE MEASURE

EXAMINEE'S COPY

JPM INITIAL TASK CONDITIONS:

Given the following Plant conditions:

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

INITIATING CUE:

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

Your estimated TEDE dose: _____ mR

Applicable dose limits (circle one): ANO Administrative / Federal 10CFR20

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

ADMINISTRATIVE JOB PERFORMANCE MEASURE

UNIT: 2 **REV #:** 000 **DATE:** _____

SYSTEM/DUTY AREA: Conduct of Operations A5

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

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

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

APPROVED FOR ADMINISTRATION TO: **RO:** _____ **SRO:** X

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

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE: Perform **SIMULATOR:** Perform **LAB:** _____

POSITION EVALUATED: **RO:** _____ **SRO:** _____

ACTUAL TESTING ENVIRONMENT: **SIMULATOR:** _____ **PLANT SITE:** _____ **LAB:** _____

TESTING METHOD: **SIMULATE:** _____ **PERFORM:** _____

APPROXIMATE COMPLETION TIME IN MINUTES: 15 Minutes

REFERENCE(S): OP 2107.001 Attachment P

EXAMINEE'S NAME: _____ **SSN:** _____

EVALUATOR'S NAME: _____

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

SATISFACTORY: _____ **UNSATISFACTORY:** _____

PERFORMANCE CHECKLIST COMMENTS:

_____

_____

Start Time _____ **Stop Time** _____ **Total Time** _____

SIGNED: _____ **DATE:** _____

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

ADMINISTRATIVE JOB PERFORMANCE MEASURE

THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:

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

JPM INITIAL TASK CONDITIONS:

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

Startup Transformer #3 is supplying all AC electrical busses.

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

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

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

Auto-transformer is out of service for the next 12 hours due to emergency forced outage, design engineering expects to finish evaluation in the next 8 hours.

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

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

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

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

Data from Feeder breaker 2A112: Vab = 4102VAC; Vbc=4150VAC; Vca=4120VAC

Data from Feeder breaker 2A113: Ia=1810amps; Ib=1820amps; Ic=1810amps

Data from Feeder breaker 2A212: Vab = 4102VAC; Vbc=4150VAC; Vca=4120VAC

Data from Feeder breaker 2A213: Ia=1600amps, Ib=1610amps;Ic=1620amps

TASK STANDARD: Identify at least 4 of the following 5 errors in OP 2107.001 section 11.0:

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

Procedure step 11.8.1 was marked as complete when the initial conditions stated that the auto-transformer was out of service.

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

Procedure step 11.8.3 was marked as complete when initial conditions stated that 3 condensate pumps were running.

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

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

TASK PERFORMANCE AIDS: OP 2107.001 limits and precautions (section 5), completed section 11.0, and completed Attachment 'P'.

EXAMINER'S NOTES:

ADMINISTRATIVE JOB PERFORMANCE MEASURE

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

START TIME: _____

PERFORMANCE CHECKLIST			STANDARDS	(Circle One)
(C)	1.	Reviewed procedure OP 2107.001 section 11.0 and Attachment 'P' for errors.	Identified 4 of the following 5 errors: 1) Procedure step 11.6 was marked as NA when the initial conditions stated that the auto-transformer was out of service. 2) Procedure step 11.8.1 was marked as complete when the initial conditions stated that the auto-transformer was out of service. 3) Procedure step 11.8.2 was marked as complete when initial conditions stated that unit 1 breaker A111 (A1) was not in pull to lock but in normal after stop. 4) Procedure step 11.8.3 was marked as complete when initial conditions stated that 3 condensate pumps were running. 5) Procedure step 11.8.5 was marked as complete when the loading of 2A1 and 2A2 exceeded the limit and precaution value for 4160VAC winding loading of 21 MVA with forced air and oil available (Calculation done on Attachment 'P is correct)	N/A SAT UNSAT
(C)	2.	Determined that SU#2 availability.	Determined that SU#2 could not be placed in service in current configuration.	N/A SAT UNSAT
END				

STOP TIME: _____

ADMINISTRATIVE JOB PERFORMANCE MEASURE

EXAMINER's COPY

INITIAL PLANT CONDITIONS

- Mode 4; 250 EFPD. All ESF systems are in normal alignment.
- Startup Transformer #3 is supplying all AC electrical busses.
- 'A', 'C' and 'B' Condensate Pump are running for post maintenance testing and 'D' Condensate Pump is in pull to lock.
- 'B' Circulating Water Pump is running and 'A' Circulating Water Pump is in pull to lock.
- 'B' and 'D' Reactor Coolant Pumps are running and 'A' and 'C' Reactor Coolant Pumps are secured.
- Auto-transformer is out of service for the next 12 hours due to emergency forced outage, design engineering expects to finish evaluation in the next 8 hours.
- Unit 1 is at 100% and all busses energized from their Unit Auxiliary Transformer and with no equipment out of service.
- Unit 1 SU#2 feeder to A1 (A111) is in normal after stop.
- SU#2 Voltage Regulator is NOT in voltage reduction mode.
- 2H2 loading is 4MVA, 2H1 loading is 5 MVA
- Data from Feeder breaker 2A112: Vab = 4102VAC; Vbc=4150VAC; Vca=4120VAC
- Data from Feeder breaker 2A113: Ia=1810amps; Ib=1820amps; Ic=1810amps
- Data from Feeder breaker 2A212: Vab = 4102VAC; Vbc=4150VAC; Vca=4120VAC
- Data from Feeder breaker 2A213: Ia=1600amps, Ib=1610amps;Ic=1620amps

Initiating CUE:

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

List any errors identified below:

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Can Startup Transformer #2 be placed in service given the initial condition information? _____

ADMINISTRATIVE JOB PERFORMANCE MEASURE

EXAMINEE's COPY

INITIAL PLANT CONDITIONS

- Mode 4; 250 EFPD. All ESF systems are in normal alignment.
- Startup Transformer #3 is supplying all AC electrical busses.
- 'A', 'C' and 'B' Condensate Pump are running for post maintenance testing and 'D' Condensate Pump is in pull to lock.
- 'B' Circulating Water Pump is running and 'A' Circulating Water Pump is in pull to lock.
- 'B' and 'D' Reactor Coolant Pumps are running and 'A' and 'C' Reactor Coolant Pumps are secured.
- Auto-transformer is out of service for the next 12 hours due to emergency forced outage, design engineering expects to finish evaluation in the next 8 hours.
- Unit 1 is at 100% and all busses energized from their Unit Auxiliary Transformer and with no equipment out of service.
- Unit 1 SU#2 feeder to A1 (A111) is in normal after stop.
- SU#2 Voltage Regulator is NOT in voltage reduction mode.
- 2H2 loading is 4MVA, 2H1 loading is 5 MVA
- Data from Feeder breaker 2A112: Vab = 4102VAC; Vbc=4150VAC; Vca=4120VAC
- Data from Feeder breaker 2A113: Ia=1810amps; Ib=1820amps; Ic=1810amps
- Data from Feeder breaker 2A212: Vab = 4102VAC; Vbc=4150VAC; Vca=4120VAC
- Data from Feeder breaker 2A213: Ia=1600amps, Ib=1610amps;Ic=1620amps

Initiating CUE:

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

List any errors identified below:

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Can Startup Transformer #2 be placed in service given the initial condition information? _____

ADMINISTRATIVE JOB PERFORMANCE MEASURE

UNIT: 2 **REV #:** 002 **DATE:** _____

SYSTEM/DUTY AREA: Conduct of Operations A6

TASK: Review Time to Boil Calculation

JTA#: ANO2-RO-NORM-4

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

APPROVED FOR ADMINISTRATION TO: **RO:** _____ **SRO:** X

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

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE: _____ **SIMULATOR:** Perform **Classroom:** Perform

POSITION EVALUATED: **RO:** _____ **SRO:** X

ACTUAL TESTING ENVIRONMENT: **SIMULATOR:** _____ **PLANT SITE:** _____ **Classroom:** _____

TESTING METHOD: **SIMULATE:** _____ **PERFORM:** _____

APPROXIMATE COMPLETION TIME IN MINUTES: 20 Minutes

REFERENCE(S): 1015.008 Attachment E

EXAMINEE'S NAME: _____ **SSN:** _____

EVALUATOR'S NAME: _____

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

SATISFACTORY: _____ **UNSATISFACTORY:** _____

PERFORMANCE CHECKLIST COMMENTS:

_____

_____

Start Time	Stop Time	Total Time
_____	_____	_____

SIGNED: _____ **DATE:** _____

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

ADMINISTRATIVE JOB PERFORMANCE MEASURE

THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:

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

JPM INITIAL TASK CONDITIONS:

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

Time after shutdown = 35 hours; one (1) PZR code safety valve is removed; PZR manway is installed; ECCS vent valves are de-energized OPEN; NO RCP seal work inprogress; NO RCS cold or hot leg openings; RCS Temperature is 115°F.

TASK STANDARD:

Identify Three (3) of the following four (4) errors in the original Time to boil calculation :

1) 2 code safety valves were recorded as removed and only one was removed in initial conditions.

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

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

4) Time after shutdown was recorded as 3 days 5 hours instead of the correct 1 day and 11 hours (35 hours).

AND

Identify that the RCS cannot be drained to reduced inventory due to TTTCU is less than 2 hours.

TASK PERFORMANCE AIDS:

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

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

SIMULATOR SETUP:

NA

EXAMINER'S NOTES:

ADMINISTRATIVE JOB PERFORMANCE MEASURE

INITIATING CUE:

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

PERFORMANCE CHECKLIST			STANDARDS	(Circle One)
	1.	Compare time to boil (TTB) calculation using LOSDC2 program.	Computer program independently run and calculations compared to	N/A SAT UNSAT
(C)	2.	Identified 3 of the 4 errors	1) 2 code safety valves were recorded as removed instead of 1 code safety valve removed. 2) Initial RCS water level was recorded as 42" above the bottom of the hot leg instead of the correct 24". 3) Current RCS temperature was recorded as 80°F instead of the correct 115°F. 4) Time after shutdown was recorded as 3 days 5 hours instead of the correct 1 day 11 hours (35 hours).	N/A SAT UNSAT
(C)	3.	Determined that the actual Time until core uncovery: is less than 2 hours	Determined that the RCS cannot be drained to reduced inventory.	N/A SAT UNSAT
EXAMINER'S NOTE: Prompt the Examinee that the file should not be printed or saved.				
END				

ADMINISTRATIVE JOB PERFORMANCE MEASURE

EXAMINER'S COPY

JPM INITIAL TASK CONDITIONS:

Given the following Plant conditions:

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

INITIATING CUE:

CRS/SM directs: "CRS/SM directs: "Perform a supervisory review of the given time to boil and time to core uncovery calculation using LOSDC2 program and identify at LEAST 3 errors and determine if conditions are met to drain the RCS to reduced inventory."

Do not print data or save LOSCD2 file.

List the errors identified below:

_____

_____

_____

_____

_____

_____

_____

_____

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

ADMINISTRATIVE JOB PERFORMANCE MEASURE

EXAMINEE'S COPY

JPM INITIAL TASK CONDITIONS:

Given the following Plant conditions:

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

CRS/SM directs: "CRS/SM directs: "Perform a supervisory review of the given time to boil and time to core uncovery calculation using LOSDC2 program and identify at LEAST 3 errors and determine if conditions are met to drain the RCS to reduced inventory."

Do not print data or save LOSCD2 file.

List any errors identified below:

_____

_____

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

ADMINISTRATIVE JOB PERFORMANCE MEASURE

UNIT: 2 **REV #:** 002 **DATE:** _____

SYSTEM/DUTY AREA: Equipment Control A7

TASK: Supervisory review of maintenance activities for configuration control

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

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

APPROVED FOR ADMINISTRATION TO: **RO:** _____ **SRO:** X

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

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE: _____ **SIMULATOR:** Perform **Classroom:** Perform

POSITION EVALUATED: **RO:** _____ **SRO:** X

ACTUAL TESTING ENVIRONMENT: **SIMULATOR:** _____ **PLANT SITE:** _____ **Classroom:** _____

TESTING METHOD: **SIMULATE:** _____ **PERFORM:** _____

APPROXIMATE COMPLETION TIME IN MINUTES: 10 Minutes

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

EXAMINEE'S NAME: _____ **SSN:** _____

EVALUATOR'S NAME: _____

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

SATISFACTORY: _____ **UNSATISFACTORY:** _____

PERFORMANCE CHECKLIST COMMENTS:

_____

_____

Start Time _____ **Stop Time** _____ **Total Time** _____

SIGNED: _____ **DATE:** _____

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

ADMINISTRATIVE JOB PERFORMANCE MEASURE

THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:

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

JPM INITIAL TASK CONDITIONS:

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

The troubleshooting required isolating AND draining the radiation monitor.

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

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

TASK STANDARD:

Identified 4 of the following 6 errors.

1) 2SW-1525A ‘As Found’ position is listed as CLOSED when required to be OPEN.

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

3) 2SW-1525M ‘Require position for Maintenance’ is listed as CLOSED when required to be OPEN to drain the system.

4) 2SW-1525H ‘Restoration’ position is listed as OPEN when required to be CLOSED.

5) 2SW-1525J Restorer and Verifier initials are the same.

6) The SRO prior approval signature is blank.

TASK PERFORMANCE AIDS:

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

Copy of OP 2104.029 or computer.

SIMULATOR SETUP:

NA

EXAMINER'S NOTES:

ADMINISTRATIVE JOB PERFORMANCE MEASURE

INITIATING CUE:

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

PERFORMANCE CHECKLIST			STANDARDS	(Circle One)
Evaluator's Note: Provide examinee with a copy of 1025.003, Maintenance Configuration Tracking Log Sheet.				
	1.	Review the Maintenance Configuration Tracking Log Sheet	Examinee reviewed the Maintenance Configuration Tracking Log Sheet and compared it to the normal lineup in 2104.029, Attachment E.	N/A SAT UNSAT
(C)	2.	Identified 4 of the 6 errors.	Identified 4 of the following 6 errors. 1) 2SW-1525A 'As Found' and position is listed as CLOSED when required to be OPEN. 2) 2SW-1525A 'Restoration' position is listed as CLOSED when required to be OPEN. 3) 2SW-1525M 'Require position for Maintenance' is listed as CLOSED when required to be OPEN to drain the system. 4) 2SW-1525H 'Restoration' position is listed as OPEN when required to be CLOSED. 5) 2SW-1525J Restorer and Verifier initials are the same. 6) The SRO prior approval signature is blank.	N/A SAT UNSAT
END				

ADMINISTRATIVE JOB PERFORMANCE MEASURE

EXAMINER'S COPY

JPM INITIAL TASK CONDITIONS:

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

The troubleshooting required isolating AND draining the radiation monitor.

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

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

INITIATING CUE:

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

_____

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ADMINISTRATIVE JOB PERFORMANCE MEASURE

EXAMINEE'S COPY

JPM INITIAL TASK CONDITIONS:

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

The troubleshooting required isolating AND draining the radiation monitor.

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

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

INITIATING CUE:

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

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ADMINISTRATIVE JOB PERFORMANCE MEASURE

UNIT: 2 **REV #:** 000 **DATE:** _____

SYSTEM/DUTY AREA: Radiation Control A8

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

LP#: ASLP-RO-RADP

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

APPROVED FOR ADMINISTRATION TO: RO: _____ **SRO:** X

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

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE: _____ **SIMULATOR:** _____ **Classroom:** Perform

POSITION EVALUATED: RO: _____ **SRO:** _____

ACTUAL TESTING ENVIRONMENT: SIMULATOR: _____ **PLANT SITE:** _____ **Classroom:** _____

TESTING METHOD: SIMULATE: _____ **PERFORM:** _____

APPROXIMATE COMPLETION TIME IN MINUTES: 15 Minutes

REFERENCE(S): 1903.033 and 1903.033A form

EXAMINEE'S NAME: _____ **BADGE#:** _____

EVALUATOR'S NAME: _____

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

SATISFACTORY: _____ **UNSATISFACTORY:** _____

PERFORMANCE CHECKLIST COMMENTS:

_____

_____

Start Time	Stop Time	Total Time
_____	_____	_____

SIGNED: _____ **DATE:** _____

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

ADMINISTRATIVE JOB PERFORMANCE MEASURE

THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:

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

JPM INITIAL TASK CONDITIONS:

The plant is tripped from 100% power.

300 gpm LOCA in progress.

Loss of Offsite power is in progress.

LOCA EOP is being implemented.

RDACS indicates an off site release in progress.

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

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

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

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

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

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

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

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

TASK STANDARD:

Determine that 10CFR20 limits can be exceeded for protection of Large populations by

calculating Joe Mechanics and Ralph RP's dose and complete 1903.033A form for entry.

TASK PERFORMANCE AIDS:

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

SIMULATOR SETUP:

NA

EXAMINER'S NOTES:

ADMINISTRATIVE JOB PERFORMANCE MEASURE

INITIATING CUE:

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

PERFORMANCE CHECKLIST			STANDARDS	(Circle One)
(C)	1.	Calculate Joe Mechanic's estimated dose	Calculated Joe Mechanic's estimated dose to in the following range: 9082 to 9882 mR	N/A SAT UNSAT
(C)	2.	Calculate Ralph RP's estimated dose	Calculated Ralph RP's estimated dose to in the following range: 10053 to 10853 mR	N/A SAT UNSAT
(C)	3.	Determine if Joe Mechanic's is allowed to make the entry to stop the release.	Determined that Joe Mechanic is allowed to make the entry for protection of Large populations.	N/A SAT UNSAT
(C)	4.	Determine if Ralph RP's is allowed to make the entry to stop the release.	Determined that Ralph RP is allowed to make the entry for protection of Large populations.	N/A SAT UNSAT
(C)	5.	Complete 1903.033A	Completed section 1 of 1903.033A, selected box 2 for protection of large populations (dose < 25 Rem) Completed section 2 of 1903.033A included Joe Mechanic and Ralph RP as exceeding 10CFR20 dose limits.	N/A SAT UNSAT
Examiner Note: If the applicant fills out the 1903.033A but does not sign the form for the TSC director or for the briefing being complete this is still considered they completed the task correctly.				
END				

ADMINISTRATIVE JOB PERFORMANCE MEASURE

EXAMINER'S COPY

JPM INITIAL TASK CONDITIONS:

Given the following Plant conditions:

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

INITIATING CUE:

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

Joe Mechanic's estimated TEDE dose: _____ mR

Ralph RP's estimated TEDE dose: _____ mR

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

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

ADMINISTRATIVE JOB PERFORMANCE MEASURE

EXAMINEE'S COPY

JPM INITIAL TASK CONDITIONS:

Given the following Plant conditions:

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

INITIATING CUE:

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

Joe Mechanic's estimated TEDE dose: _____ mR

Ralph RP's estimated TEDE dose: _____ mR

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

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

UNIT: 2 **REV #:** 001 **DATE:** _____

SYSTEM/DUTY AREA: Emergency Plan A9

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

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

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

APPROVED FOR ADMINISTRATION TO: RO: _____ **SRO:** X

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

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE: _____ **SIMULATOR:** Perform **CLASSROOM:** _____

POSITION EVALUATED: RO: _____ **SRO:** _____

ACTUAL TESTING ENVIRONMENT: SIMULATOR: _____ **PLANT SITE:** _____ **CLASSROOM:** _____

TESTING METHOD: SIMULATE: _____ **PERFORM:** _____

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

REFERENCE(S): 1903.010

EXAMINEE'S NAME: _____ **BADGE:** _____

EVALUATOR'S NAME: _____

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

SATISFACTORY: _____ **UNSATISFACTORY:** _____

PERFORMANCE CHECKLIST COMMENTS:

_____

_____

Start Time _____ **Stop Time** _____ **Total Time** _____

SIGNED: _____ **DATE:** _____

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

THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:

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

JPM INITIAL TASK CONDITIONS:

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

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

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

TASK PERFORMANCE AIDS: 1903.010, Emergency Action Levels

INITIATING CUE:

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

START:_____

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

STOP:_____

Examiner's Copy

JPM is TIME CRITICAL

JPM INITIAL TASK CONDITIONS:

- Unit 2 has been operating at 100% for 230 consecutive days.
- A plant trip has occurred due to a loss of offsite power with a concurrent Loss of Coolant Accident estimated to be 1500 gpm.
- 4 hours following the trip, High Range containment radiation monitors read 74,450 R/hr and 77,730 R/hr respectively and trending up.
- RCS average Core Exit Thermocouples are reading 430°F
- PZR pressure is 325 psia
- Containment Pressure is 20 psia and slowly trending down
- RDACS indicates NO offsite release in progress
- All safety systems are responding as designed

INITIATING CUE:

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

ANSWER:

EAL classification and event number:	GE, EAL 1.5, Containment Radiation readings which indicate LOCA and >50% fuel overheat

Examinee's Copy

JPM is TIME CRITICAL

JPM INITIAL TASK CONDITIONS:

- Unit 2 has been operating at 100% for 230 consecutive days.
- A plant trip has occurred due to a loss of offsite power with a concurrent Loss of Coolant Accident estimated to be 1500 gpm.
- 4 hours following the trip, High Range containment radiation monitors read 74,450 R/hr and 77,730 R/hr respectively and trending up.
- RCS average Core Exit Thermocouples are reading 430°F
- PZR pressure is 325 psia
- Containment Pressure is 20 psia and slowly trending down
- RDACS indicates NO offsite release in progress
- All safety systems are responding as designed

INITIATING CUE:

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

ANSWER:

EAL classification and event number: _____

JOB PERFORMANCE MEASURE

UNIT: 2 **REV #:** 003 **DATE:** _____

SYSTEM/DUTY AREA: Emergency Core Cooling System S1

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

JTA#: ANO2ROEOPAOPEMER13

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

APPROVED FOR ADMINISTRATION TO: RO: X **SRO:** X

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

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE: _____ **SIMULATOR:** Perform **LAB:** _____

POSITION EVALUATED: RO: _____ **SRO:** _____

ACTUAL TESTING ENVIRONMENT: SIMULATOR: _____ **PLANT SITE:** _____ **LAB:** _____

TESTING METHOD: SIMULATE: _____ **PERFORM:** _____

APPROXIMATE COMPLETION TIME IN MINUTES: 15 Minutes

REFERENCE(S): 2202.010 ; OP 2104.001

EXAMINEE'S NAME: _____ **Badge #:** _____

EVALUATOR'S NAME: _____

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

SATISFACTORY: _____ **UNSATISFACTORY:** _____

PERFORMANCE CHECKLIST COMMENTS:

_____

_____

Start Time _____ **Stop Time** _____ **Total Time** _____

SIGNED: _____ **DATE:** _____

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

JOB PERFORMANCE MEASURE

THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:

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

JPM INITIAL TASK CONDITIONS:

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

TASK STANDARD:

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

TASK PERFORMANCE AIDS:

EOP 2202.010 Attachment 36; OP 2104.001 Section 7.0

SIMULATOR SETUP:

PZR pressure ~ 650psia.
SIT outlet valves have had breakers closed.
SIAS and CIAS have been RESET.
Safety Injection Tank (2T2D) isolation valve (2CV-5063-2) is set to fail intermediate.
Set Event trigger 4 to NE4G0632 (this will trigger T4 when 2CV5063-2 is started closed. T4=CV50632 =.85

JOB PERFORMANCE MEASURE

INITIATING CUE:

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

START Time: _____

PERFORMANCE CHECKLIST			STANDARDS	(Circle One)
	1. (Step 2)	Contact NLO to Locally remove danger tags, unlock, and close the following breakers: 2B51-F2 - 2CV5003-1 2B51-H1 - 2CV5023-1 2B61-F2 - 2CV5043-2 2B61-H1 - 2CV5063-2 **Examiner Cue:** **When contacted state that the above tags and locks are removed and breakers are closed.**	Contacted NLO to Locally remove danger tags, unlock, and close the following breakers: 2B51-F2 - 2CV5003-1 2B51-H1 - 2CV5023-1 2B61-F2 - 2CV5043-2 2B61-H1 - 2CV5063-2	N/A SAT UNSAT
(C)	2. (Step 3)	Close SIT 2T2A Outlet valve (2CV-5003-1).	On panel 2C17, placed handswitch for 2CV-5003-1 in "CLOSE". Observed green light ON; red light OFF above handswitch.	N/A SAT UNSAT
(C)	3. (Step 3)	Close SIT 2T2B outlet valve (2CV-5023-1).	On panel 2C17, placed handswitch for 2CV-5023-1 in "CLOSE". Observed green light ON; red light OFF above handswitch.	N/A SAT UNSAT
(C)	4. (Step 3)	Close SIT 2T2C outlet valve (2CV-5043-2).	On panel 2C16, closed 2CV-5043-2. Observed green light ON; red light OFF above handswitch.	N/A SAT UNSAT
(C)	5. (Step 3)	Close SIT 2T2D outlet valve (2CV-5063-2). **Examiner Cue:** **If requested as NLO report that breaker 2B-61 H1 is in the trip free position**	On panel 2C16, placed handswitch for 2CV-5063-2 in "CLOSE". Observed green light ON; red light ON above handswitch. Reported to the SM/CRS that SIT 2T2D outlet valve did NOT close.	N/A SAT UNSAT

JOB PERFORMANCE MEASURE

		PERFORMANCE CHECKLIST	STANDARDS	(Circle One)
EXAMINER'S NOTE: **Provide the following cue upon receiving the report that 2T2D outlet valve will NOT close:** **The SM/CRS directs Continue standard attachment 36, SIT isolation and vent 2T-2D from the control room using the normal vent line.**				
	6. (Step 4)	IF ANY SIT can NOT be isolated, THEN vent or drain affected SIT using 2104.001, Safety Injection Tank Operation.	Transitioned to 2104.001 section 12.	N/A SAT UNSAT
	7. (Step 12.1)	IF 18-Month Remote Position Indication (Supplement 4 of Cold Shutdown Valve Testing, 2305.006) required, THEN perform in conjunction with this activity. **Examiner Cue: State that the 18 month remote position indication check is not required.**	Asked CRS/SM or determined if the 18-Month Remote Position Indication is required.	N/A SAT UNSAT
	8. (Step 12.2.1)	IF Containment ventilation available, THEN verify Containment ventilation in service per Containment Atmosphere Control (2104.033). **Examiner Cue: State that Containment ventilation is not available.**	Asked CRS/SM or determined if the 18-Month Remote Position Indication is required.	N/A SAT UNSAT
	9. (Step 12.2.2)	IF Equipment Hatch or Temporary Equipment Hatch open, THEN verify air flow into Containment Building. **Examiner Cue: State that Equipment Hatch is closed.**	Asked CRS/SM or determined that the Equipment Hatch is closed.	N/A SAT UNSAT
	10. (Step 12.2.3)	IF personnel in CNTMT, THEN perform the following: **Examiner Cue: State that there are no personnel in CNTMT.**	Asked CRS/SM or determined that the personnel are not in CNTMT.	N/A SAT UNSAT

JOB PERFORMANCE MEASURE

PERFORMANCE CHECKLIST			STANDARDS	(Circle One)
(C)	11. (Step 12.2.7)	IF venting SIT (2T-2D), THEN open ONE of the following: SIT D Vent (2SV-5066) SIT D Vent Bypass (2SI-50)	Opened SIT D vent 2SV-5066. (critical portion) Observed Red light On and Green light OFF above the HS for 2SV-5066. Observed 'D' SIT pressure lowering.	N/A SAT UNSAT
EXAMINER'S NOTE: This JPM can be stopped once the vent path is established (2SV-5066 open).				
END				

STOP Time: _____

EXAMINER'S COPY

JPM INITIAL TASK CONDITIONS:
A LOCA is in progress. SIAS has been reset. EOP 2202.010 Attachment 36 is complete through Step 1.

INITIATING CUE:

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

EXAMINEE'S COPY

JPM INITIAL TASK CONDITIONS:
A LOCA is in progress. SIAS has been reset. EOP 2202.010 Attachment 36 is complete through Step 1.

INITIATING CUE:

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

JOB PERFORMANCE MEASURE

UNIT: 2 **REV #:** 000 **DATE:** _____

SYSTEM/DUTY AREA: AC Electrical Distribution S2

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

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

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

APPROVED FOR ADMINISTRATION TO: RO: X **SRO:** X

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

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE: _____ **SIMULATOR:** Perform **CLASSROOM:** _____

POSITION EVALUATED: RO: _____ **SRO:** _____

ACTUAL TESTING ENVIRONMENT: SIMULATOR: _____ **PLANT SITE:** _____ **CLASSROOM:** _____

TESTING METHOD: SIMULATE: _____ **PERFORM:** _____

APPROXIMATE COMPLETION TIME IN MINUTES: 10 Minutes

REFERENCE(S): OP-2107.001 Electrical System Operations

EXAMINEE'S NAME: _____ **Badge #:** _____

EVALUATOR'S NAME: _____

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

SATISFACTORY: _____ **UNSATISFACTORY:** _____

PERFORMANCE CHECKLIST COMMENTS:

_____

_____

Start Time _____ **Stop Time** _____ **Total Time** _____

SIGNED: _____ **DATE:** _____

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

JOB PERFORMANCE MEASURE

THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:

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

JPM INITIAL TASK CONDITIONS:

Maintenance is complete on 2A-113

SU#2 powering 2A-1 and SU#3 is available to 2A-1.

Steps 10.1 and 10.2 are complete.

TASK STANDARD:

Energized 2A-1 from SU#3

TASK PERFORMANCE AIDS:

OP 2107.001 Electrical System Operations.

SIMULATOR SETUP:

JOB PERFORMANCE MEASURE

INITIATING CUE:

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

START TIME:_____

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

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

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

STOP TIME:_____

EXAMINER's COPY

JPM INITIAL TASK CONDITIONS:

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

INITIATING CUE:

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

EXAMINEE's COPY

JPM INITIAL TASK CONDITIONS:

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

INITIATING CUE:

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

JOB PERFORMANCE MEASURE

UNIT: 2 **REV #:** 000 **DATE:** _____

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

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

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

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

APPROVED FOR ADMINISTRATION TO: RO: X **SRO:** X

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

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE: _____ **SIMULATOR:** Perform **CLASSROOM:** _____

POSITION EVALUATED: RO: _____ **SRO:** _____

ACTUAL TESTING ENVIRONMENT: SIMULATOR: _____ **PLANT SITE:** _____ **CLASSROOM:** _____

TESTING METHOD: SIMULATE: _____ **PERFORM:** _____

APPROXIMATE COMPLETION TIME IN MINUTES: 12 Minutes

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

EXAMINEE'S NAME: _____ **Badge #:** _____

EVALUATOR'S NAME: _____

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

SATISFACTORY: _____ **UNSATISFACTORY:** _____

PERFORMANCE CHECKLIST COMMENTS:

_____

_____

Start Time _____ **Stop Time** _____ **Total Time** _____

SIGNED: _____ **DATE:** _____

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

JOB PERFORMANCE MEASURE

THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:

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

JPM INITIAL TASK CONDITIONS:

Reactor tripped and the input to the SDBCS failed low.

TASK STANDARD:

Steam Generator pressure controlled > 751 psia (MSIS setpoint) and all Main Steam safety valves closed (S/G pressure < 1078 psia).

TASK PERFORMANCE AIDS:

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

SIMULATOR SETUP:

SDBCS input XMSHDRPRS = 650.
Condenser Air inleakage set on trigger 1 value = 5500 SCFM,
Event trigger 1 set for 'A' S/G pressure (SGPD(2)) < 1050 psia.

JOB PERFORMANCE MEASURE

INITIATING CUE:

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

START TIME:_____

PERFORMANCE CHECKLIST			**STANDARDS**	(Circle One)
	1. (Step 1)	IF BOTH MSIV's closed, THEN GO TO step 5.0. **Examiner note: Step 1 in N/A.**	On panel 2C16 and 2C17 determined MSIV's 2CV-1010-1 and 2CV-1060-2 open. Observed red light ON above hand switches	N/A SAT UNSAT
	2. (Step 2.1)	Perform the following to determine availability of SDBCS valves: IF the following conditions satisfied, THEN SDBCS Master controller (2PIC-0300) available: • SDBCS controlling S/G pressure at setpoint in automatic • Emergency OFF (2K02-A14) clear • Instrument air available • IF using Turbine Bypass valves, THEN Condenser Interlock (2K02-B14) clear	On panel 2C02, determined that the SDBCS Master controller 2PIC-0300 is not available by the fact it is not controlling at setpoint. Observed setpoint is ~1040 psig and input is ~ 650 psig with all SDBCS valves closed. Or observed that steam generator pressure is approximately 1100 psia with all SDBCS valves closed with a setpoint of ~1040 psig on 2PIC-0300.	N/A SAT UNSAT

	PERFORMANCE CHECKLIST		**STANDARDS**	(Circle One)
	3. (Step 2.2)	IF the following conditions satisfied, THEN SDBCS Downstream ADV/Turbine Bypass valves available: • Instrument air available • Emergency OFF (2K02-A14) clear • Power available to selected controllers/valves • IF using Turbine Bypass valves, THEN Condenser Interlock (2K02-B14) clear	On panel 2C-14 or PMS verified ~ 100 psig Instrument air pressure. On 2K02 verified Emergency OFF (2K02-A14) clear. (light out) On panel 2C-02 verified power available for the selected controllers from the following list: 2HIC-0301, 2HIC-0302, 2HIC-0303, 2HIC-0306, 2HIC-0305. On 2K02 verified Condenser Interlock (2K02-B14) clear. (light out)	N/A SAT UNSAT
Examiner Note: **Step # 3 is not applicable.**				
Procedure Note: The SDBCS Master controller can not be set less than 650 psi. Computer points FR1030 and FR1130 can be useful to monitor steam flow.				
(C)	4. (Step 4.1)	IF SDBCS Downstream ADV/Turbine Bypass valves operation in manual desired, THEN perform the following: Place selected HIC(s) in MANUAL: • 2HIC-0301 Downstream Atmospheric Dump valve • 2HIC-0305 Downstream Atmospheric Dump valve • 2HIC-0302 Turbine Bypass valve • 2HIC-0303 Turbine Bypass valve • 2HIC-0306 Turbine Bypass valve	On panel 2C02, placed hand indicating controller for selected turbine bypass valves in manual. • 2HIC-0302 Turbine Bypass valve • 2HIC-0303 Turbine Bypass valve • 2HIC-0306 Turbine Bypass valve Observed M on selected controllers placed in manual.	N/A SAT UNSAT

PERFORMANCE CHECKLIST			STANDARDS	(Circle One)
	5. (Step 4.2)	Adjust output on selected HIC(s) as desired **.**	Adjusted hand indicating controller output to zero for selected controllers. • 2HIC-0302 Turbine Bypass valve • 2HIC-0303 Turbine Bypass valve • 2HIC-0306 Turbine Bypass valve Observed zero demand on the controller selected for manual operation.	N/A SAT UNSAT
(C)	6. (Step 4.3)	Place the selected permissive(s) handswitch to MANUAL: • 2CV-0301 Downstream Atmospheric Dump valve (2HS-0301) • 2CV-0305 Downstream Atmospheric Dump valve (2HS-0305) • 2CV-0302 Turbine Bypass valve (2HS-0302) • 2CV-0303 Turbine Bypass valve (2HS-0303) • 2CV-0306 Turbine Bypass valve (2HS-0306)	Placed permissive handswitch for the selected turbine bypass valves to MANUAL. • 2CV-0302 Turbine Bypass valve (2HS-0302) • 2CV-0303 Turbine Bypass valve (2HS-0303) • 2CV-0306 Turbine Bypass valve (2HS-0306)	N/A SAT UNSAT
(C)	7. (Step 4.4)	* Adjust output on selected HIC as desired.	Adjusted output on selected controllers to lower steam generator pressure into the directed steam generator pressure band of 950 psig to 1050 psig. Observed selected valve(s) open indication of red light and green light on. Also, observed Steam generator pressure lowering.	N/A SAT UNSAT
EXAMINER'S NOTE: **The following is the alternate path portion of this JPM. When S/G pressure reaches 1050 psia an inadvertent Condenser interlock will occur. The following steps are for the Condenser interlock Annunciator Corrective Action**				
Procedure Note: This interlock blocks opening of Turbine Bypass valves 2CV-0302, 2CV-0303, and 2CV-0306.				

PERFORMANCE CHECKLIST			STANDARDS	(Circle One)
	8. (Step 2.1)	Verify SDBCS Atmospheric Dumps opening as required: • 2CV-0301 Downstream Atmospheric Dump valve • 2CV-0305 Downstream Atmospheric Dump valve **Examiner CUE:** **When the applicant start to operate ADVs or If requests from direction from the CRS state "Restore Steaming to the condenser and control S/G pressure 950 to 1050 psia"**	Used Exhibit 3 of 2105.008 to control S/G pressure and operated selected Atmospheric dump valves.	N/A SAT UNSAT
	9. (Step 2.2)	Refer to 2203.019, Loss Of Condenser Vacuum. **Examiner CUE:** **If ask as the CRS to refer to Loss of Condenser Vacuum, state that you will refer to the Loss of Condenser Vacuum AOP.**	Informed the CRS to refer to Loss of Condenser Vacuum.	N/A SAT UNSAT
	10. (Step 2.3)	Refer to 2105.008, Steam Dump And Bypass Control System Operations. **Examiner CUE:** **If ask as the CRS to refer to Steam Dump and Bypass Control System operations, state that you will refer to the Steam Dump and Bypass Control System procedure.**	Informed the CRS to refer to Steam Dump and Bypass Control System Operations.	N/A SAT UNSAT
	11. (Step 3.1)	IF ALL the following conditions met, THEN alarm will automatically clear when vacuum < 5.15 inches HgA: Master controller in AUTO. Bypass Valve Hand Indicating controllers in AUTO. Bypass Valve Permissive switches NOT in OFF.	Determine that Bypass Valve Hand Indicating controllers are in manual and the Condenser Interlock will not reset automatically.	N/A SAT UNSAT

PERFORMANCE CHECKLIST			STANDARDS	(Circle One)
(C)	12. (Step 3.2)	IF SDBCS in manual control AND vacuum < 5.15 inches HgA, THEN depress SDBCS Vacuum/Emergency Off Reset pushbutton at 2C02, 2C29, or 2C80.	IF SDBCS in manual control AND vacuum < 5.15 inches HgA, THEN depress SDBCS Vacuum/Emergency Off Reset pushbutton at 2C02, 2C29, or 2C80.	N/A SAT UNSAT
EXAMINER'S NOTE: **The following step is from 2105.008 exhibit 3 and is a continuous action.**				
(C)	13. (Step 4.4)	* Adjust output on selected HIC as desired.	Adjusted output on selected controllers to lower steam generator pressure into the directed steam generator pressure band of 950 psig to 1050 psig. Observed selected valve(s) open indication of red light and green light on. Also, observed Steam generator pressure lowering. **Examiner note: It is critical to control S/G pressure above MSIS setpoint (751 psia) and once control is established below the safety valve setpoint (~1100 PSIA). 2K04 G9 MSSV alarm should remain clear once control is established using the ADVs.**	N/A SAT UNSAT
END				

STOP TIME:_____

EXAMINER's COPY

JPM INITIAL TASK CONDITIONS:

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

INITIATING CUE:

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

EXAMINEE's COPY

JPM INITIAL TASK CONDITIONS:

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

INITIATING CUE:

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

JOB PERFORMANCE MEASURE

UNIT: 2 **REV #:** 008 **DATE:** _____

SYSTEM/DUTY AREA: Component Cooling Water System S4

TASK: Secure CCW system (Using EOP)

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

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

APPROVED FOR ADMINISTRATION TO: RO: X **SRO:** X

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

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE: _____ **SIMULATOR:** Perform **LAB:** _____

POSITION EVALUATED: RO: _____ **SRO:** _____

ACTUAL TESTING ENVIRONMENT: SIMULATOR: _____ **PLANT SITE:** _____ **LAB:** _____

TESTING METHOD: SIMULATE: _____ **PERFORM:** _____

APPROXIMATE COMPLETION TIME IN MINUTES: 15 Minutes

REFERENCE(S): 2202.010 Standard Attachments

EXAMINEE'S NAME: _____ **SSN:** _____

EVALUATOR'S NAME: _____

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

SATISFACTORY: _____ **UNSATISFACTORY:** _____

PERFORMANCE CHECKLIST COMMENTS:

_____

_____

Start Time _____ **Stop Time** _____ **Total Time** _____

SIGNED: _____ **DATE:** _____

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

JOB PERFORMANCE MEASURE

THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:

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

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

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

TASK PERFORMANCE AIDS: EOP 2202.010 Standard Attachment 6

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

JOB PERFORMANCE MEASURE

INITIATING CUE:

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

Start Time: _____

PERFORMANCE CHECKLIST			STANDARDS	(Circle One)
(C)	1. (Step 1.A)	Secure all RCP's.	On panel 2C04, placed the following hand switches in PULL TO LOCK or STOP: • 2HS-4620 (2P32A), • 2HS-4621 (2P32B), • 2HS-4720 (2P32C) • 2HS-4721 (2P32D) Observed green lights ON; red lights OFF above RCP hand switches.	N/A SAT UNSAT
	2. (Step 1.B)	Place both spray valves in MANUAL.	On panel 2C04, placed spray valve man/auto select hand switches 2HS-4651B ("A" Spray Line) and 2HS-4652B ("B" Spray Line) in MANUAL.	N/A SAT UNSAT
	3. (Step 1.B)	Verify both spray valves closed.	On panel 2C04, observed green light ON above spray valve hand switches for 2CV-4651 and 2CV-4652. OR Held spray valve hand switches for 2CV-4651 and/or 2CV-4652 in CLOSE until the green light was ON above associated hand switches.	N/A SAT UNSAT

JOB PERFORMANCE MEASURE

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

JOB PERFORMANCE MEASURE

PERFORMANCE CHECKLIST			STANDARDS	(Circle One)
	7. (Step 1.F)	Locally close "SU/BD DI TO EFW PUMP SUCT" valve (2EFW-0706). **<u>Examiner Cue:</u> If requested report that, 2CV-0706 has been locally verified locked closed.**	Either directed AO to verify 2CV-0706 closed or verified 2CV-0706 closed on 2C-33. On panel 2C33, observed green light ON; red light OFF for SU/BD DI Effluent to EFW 2EFW-0706.	N/A SAT UNSAT
	8. (Step 1.G)	Verify ALL Condensate Pump hand switches in PTL. **Examiner Cue: Due to the location of the other JPM if the applicant attempts to check the condensate pumps, inform them that all condensate pumps are in PTL.**	From the initial Cue determined that all Condensate pump HS are in PTL.	N/A SAT UNSAT
	9. (Step 1.H)	Locally secure BOTH Waste Gas compressors by placing the following hand switches in OFF: • "2C75A CONTROL SWITCH" (2HS-2402A) • "2C75B CONTROL SWITCH" (2HS-2402B) **<u>Examiner Cue:</u> Report that, 2C75A and 2C75B Waste Gas compressors have been verified secured.**	Directed the WCO to secure both waste gas compressors by placing hand switches 2HS-2402A and 2HS-2402B in OFF on panels 2C194A/B.	N/A SAT UNSAT

JOB PERFORMANCE MEASURE

PERFORMANCE CHECKLIST			STANDARDS	(Circle One)
	10. (Step 1.I)	Notify Chemistry to secure ALL unnecessary sample flows to the following sample panels: • 2C116 Sample System Control panel • 2C337 SG Secondary Sample panel • 2C145-I Secondary Sample panel • 2C145-II Secondary Sample panel **<u>Examiner Cue:</u> Chemistry reports sampling is secured to the following panels:** **2C116** **2C337** **2C145-I** **2C145-II**	Notified chemistry to secure all unnecessary sample flows to the following panels: • 2C116 Sample System Control Panel. • 2C337 SG Secondary Sample Panel. • 2C145-I Secondary Sample Panel. • 2C145-II Secondary Sample Panel.	N/A SAT UNSAT
	11. (Step 1.J.1)	Verify closed ALL RCP CCW Isolation valves: • 2CV-5255-1 • 2CV-5254-2 • 2CV-5236-1	On Panel 2C17/2C16 closed the following valves by placing the hand switches to close: • 2CV-5255-1 • 2CV-5236-1 • 2CV-5254-2 Observed the Red light OFF and Green light ON.	N/A SAT UNSAT
(C)	12. (Step 1.J.2)	Place all CCW pump hand switches in PULL TO LOCK.	Placed the following hand switches in PULL TO LOCK on panel 2C14: • 2HS-5225 (2P33A) • 2HS-5228 (2P33B) • 2HS-5234 (2P33C) Observed green lights ON and red lights OFF above hand switches.	N/A SAT UNSAT
Examiner note: Due to the location of the other JPM, this JPM should be stopped when all CCW pumps are placed in PTL.				
END				

Stop Time: _____

JOB PERFORMANCE MEASURE

EXAMINER'S COPY

JPM INITIAL TASK CONDITIONS

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

INITIATING CUE:

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

JOB PERFORMANCE MEASURE

EXAMINEE'S COPY

JPM INITIAL TASK CONDITIONS

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

INITIATING CUE:

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

JOB PERFORMANCE MEASURE

UNIT: 2 **REV #:** 000 **DATE:** _____

SYSTEM/DUTY AREA: Containment S5

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

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

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

APPROVED FOR ADMINISTRATION TO: RO: X **SRO:** X

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

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE: _____ **SIMULATOR:** Perform **CLASSROOM:** _____

POSITION EVALUATED: RO: _____ **SRO:** _____

ACTUAL TESTING ENVIRONMENT: SIMULATOR: _____ **PLANT SITE:** _____ **CLASSROOM:** _____

TESTING METHOD: SIMULATE: _____ **PERFORM:** _____

APPROXIMATE COMPLETION TIME IN MINUTES: 10 Minutes

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

EXAMINEE'S NAME: _____ **Badge #:** _____

EVALUATOR'S NAME: _____

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

SATISFACTORY: _____ **UNSATISFACTORY:** _____

PERFORMANCE CHECKLIST COMMENTS:

_____

_____

Start Time _____ **Stop Time** _____ **Total Time** _____

SIGNED: _____ **DATE:** _____

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

JOB PERFORMANCE MEASURE

THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:

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

JPM INITIAL TASK CONDITIONS:

Containment Sump level ~76%

TASK STANDARD:

2CV-2060-1 closed and Aux building sump level did not trend ≥100%.

TASK PERFORMANCE AIDS:

OP 2104.014 Section 20

SIMULATOR SETUP:

Any mode, Containment Sump level ~76%

CV20612 value = 1, ramp = 8 sec, set on a Conditional trigger set for rw_2061o.

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

JOB PERFORMANCE MEASURE

INITIATING CUE:

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

START TIME:_____

PERFORMANCE CHECKLIST			**STANDARDS**	(Circle One)
Procedure Note: • Containment sump level must be > 71% prior to closing the Inside Sump Isolations during Plant Cooldown (2102.010). • If oil or foreign debris is suspected to be in the sump, then sump level should be maintained > 71%. CR-ANO-1-2005-01994 • 2102.002, Plant Heatup requires > 35% in sump prior to heatup from Mode 5. • RADS can be used to monitor dose rate changes and formation of hot spots. (CR-ANO-2-2011-1976)				
Procedure Caution: Containment Sump drainage flow rate is greater than both Aux Building Sump pumps (2P-51A and 2P-51B) flow capacity.				
Procedure Note: Draining Containment Sump will cause rate of change hi alarm (2K01-H9).				
(C)	1. (Step 20.1.3)	Open the following valves to drain CNTMT sump: Containment Sump Isolation 2CV-2060-1 (2HS-2060-1) Containment Sump Isolation 2CV-2061-2 (2HS-2061-2)	On panel 2C17 placed CMNT sump isolation valve handswitch 2HS-2060-1 to open. On panel 2C16 placed CMNT sump isolation valve handswitch 2HS-2061-2 to open. Observed red lights ON above handswitchs	N/A SAT UNSAT
	2. (Step 20.1.4)	Using level indication or corresponding computer points, monitor the following to prevent overflow: Aux Building sump (2LIS-2000 or 2LIS-2000B) In service Waste tank: - 2T-20A (2LIS-2010) - 2T-20B (2LIS-2012)	On panel 2C14, monitored Aux Building sump level (2LIS-2000 or 2LIS-2000B), and 2T-20A (2LIS-2010) waste tank. OR Monitor Aux Building Sump level and 2T-20A waste tank level using PMS computer	N/A SAT UNSAT

JOB PERFORMANCE MEASURE

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

STOP TIME:_____

EXAMINER's COPY

JPM INITIAL TASK CONDITIONS:

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

INITIATING CUE:

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

JOB PERFORMANCE MEASURE

EXAMINEE's COPY

JPM INITIAL TASK CONDITIONS:

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

INITIATING CUE:

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

JOB PERFORMANCE MEASURE

UNIT: 2 REV #: 11 DATE: _____

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

TASK: Perform control element assembly exercise.

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

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

APPROVED FOR ADMINISTRATION TO: RO: X SRO: X

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

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE: _____ SIMULATOR: Perform LAB: _____

POSITION EVALUATED: RO: _____ SRO: _____

ACTUAL TESTING ENVIRONMENT: SIMULATOR: _____ PLANT SITE: _____ LAB: _____

TESTING METHOD: SIMULATE: _____ PERFORM: _____

APPROXIMATE COMPLETION TIME IN MINUTES: 15 Minutes

REFERENCE(S): OP 2105.009 CEDM Control System Operations

EXAMINEE'S NAME: _____ Badge #: _____

EVALUATOR'S NAME: _____

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

SATISFACTORY: _____ UNSATISFACTORY: _____

PERFORMANCE CHECKLIST COMMENTS:

_____

_____

Start Time _____ Stop Time _____ Total Time _____

SIGNED: _____ DATE: _____

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

JOB PERFORMANCE MEASURE

THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:

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

JPM INITIAL TASK CONDITIONS:

260 EFPD. OP 2105.009 Supplement 2, "CEA Exercise Test" is completed successfully through step 2.5.12 for all CEA's except CEA #46. No T-alt installed on either RSPT.

TASK STANDARD:

CEA #46 has been inserted seven (7) steps (5.25 inches) and withdrawn to the programmed insertion limit.

TASK PERFORMANCE AIDS:

OP 2105.009 Supplement 2. Complete Table 2 except for CEA 6-46.

SIMULATOR SETUP:

CEA's withdrawn to Programmed insertion limit

JOB PERFORMANCE MEASURE

INITIATING CUE:

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

Start Time: _____

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

JOB PERFORMANCE MEASURE

PERFORMANCE CHECKLIST			STANDARDS	(Circle One)
(C)	6. (Step 3.2.5.F)	Place the mode select switch to MANUAL INDIVIDUAL.	On panel 2C03, placed mode select switch to MI. Observed MI (MANUAL INDIVIDUAL) light ON.	N/A SAT UNSAT
(C)	7. (Step 3.2.5.G)	Verify CEA #46 at upper electrical limit (UEL).	On insert 2JC-9058, moved CEA 46 to UEL by going to WITHDRAW on CEA insert until #46 upper electrical limit (UEL) red light on. Observed UEL red light ON.	N/A SAT UNSAT
Procedure Note: • CEA insertion is verified to be > 5" by observation of RSPTs. Observing 5.25" change in pulse counter position does NOT mean CEA has moved > 5". • If all CEAs in the subgroup of CEA being inserted are above upper alarm deadband of 140.83 inches, the CEAC 1 or 2 CEA Deviation annunciators (2K04 J-5/2K04 J-6) will NOT actuate • Use of CEAC #1 and CEAC #2 standard OM Module to monitor raw input signal is recommended to ensure CEA movement of 5 inches. CEAC group display uses process CEA positions that are rounded off to nearest inch. • Due to scheduling or component malfunction it is acceptable for CEAs to be inserted to other than Power Operations (2102.004) Attachment D Programmed Insertion Limit.				
(C)	8. (Step 3.2.5.H)	Insert CEA #46 seven steps (>5”).	Inserted CEA seven steps (>5”). Observed insertion of 5.0 inches or greater on CEAC's #1 and #2 displays.	N/A SAT UNSAT
(C)	9. (Step 3.2.5.I)	Return CEA to UEL.	CEA #46 withdrawn to UEL.	N/A SAT UNSAT
	10. (Step 3.2.5.J)	Verify CEA returned to position required by Power Operation (2102.004), Programmed CEA Insertion to Minimize CEA Finger Wear (ATTACHMENT D).	Using Power Operation (2102.004) attachment D to position CEA to minimize Finger wear.	N/A SAT UNSAT
Examiner note: The following steps are from Power Operation (2102.004) attachment D.				
	11. (Step 1.0)	IF a Reactivity Management Brief has NOT been conducted, THEN perform a Reactivity Management Brief per COPD-030 with an SRO.	Determines that a reactivity brief has been conducted per COPD-30	N/A SAT UNSAT

JOB PERFORMANCE MEASURE

<table>
<tr><th colspan="3">PERFORMANCE CHECKLIST</th><th>STANDARDS</th><th>(Circle One)</th></tr>
<tr><td></td><td>12.
(Step 2.0)</td><td>CEAs are positioned at or just below Upper Electrical Limit (UEL) using the following table as a guide.<table><tr><th>CYCLE BURNUP (EFPD)</th><th>POSITION OF FULLY WITHDRAWN CEAs</th></tr><tr><td>> 250</td><td>UEL MINUS TWO STEPS</td></tr></table></td><td>Determine CEAs should be at UEL minus Two steps.</td><td>N/A SAT UNSAT</td></tr>
<tr><td></td><td>13.
(Step 3.1)</td><td>Withdraw CEA to its UEL light in Manual Individual (MI) control using CEDM Control System Operation (2105.009).</td><td>Verify CEA #46 is withdrawn to the UEL.</td><td>N/A SAT UNSAT</td></tr>
<tr><td></td><td>14.
(Step 3.2)</td><td>With CEA positioned at UEL, VERIFY Pulse Counter reset to 150 using Plant Computer Operations (1105.010).</td><td>Verified PMS computer is indicating 150 inches withdrawn for CEA #46</td><td>N/A SAT UNSAT</td></tr>
<tr><td></td><td>15.
(Step 3.3)</td><td>Using Pulse Counter indication, insert CEA to comply with Table 1 above using CEDM Control System Operation (2105.009).</td><td>CEA #46 inserted to programmed insertion limit (UEL - 2 steps).

Observed CEA #46 at 148.5” on Pulse counter (149” on CEAC’s)</td><td>N/A SAT UNSAT</td></tr>
<tr><td></td><td>16.
(Step 3.2.5.K)</td><td>Record results.</td><td>Using OP 2105.009 Supplement A Table 1, recorded the results of CEA #46 exercise.</td><td>N/A SAT UNSAT</td></tr>
<tr><td colspan="5">Examiner note:

The CEDMCS control may be left in any mode of operation.</td></tr>
<tr><td></td><td>17.
(Step 3.2.5.L)</td><td>WHEN all required CEA movements complete, THEN verify Mode Select switch in OFF.</td><td>On insert 2JC-9058, selected off mode of operation.</td><td>N/A SAT UNSAT</td></tr>
<tr><td colspan="5">END</td></tr>
</table>

Stop Time: _____

JOB PERFORMANCE MEASURE

EXAMINER'S COPY

JPM INITIAL TASK CONDITIONS:

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

INITIATING CUE:

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

JOB PERFORMANCE MEASURE

EXAMINEE'S COPY

JPM INITIAL TASK CONDITIONS:

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

INITIATING CUE:

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

JOB PERFORMANCE MEASURE

UNIT: 2 REV #: 11 DATE: _____

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

TASK: Perform control element assembly exercise.

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

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

APPROVED FOR ADMINISTRATION TO: RO: X SRO: X

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

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE: _____ SIMULATOR: Perform LAB: _____

POSITION EVALUATED: RO: _____ SRO: _____

ACTUAL TESTING ENVIRONMENT: SIMULATOR: _____ PLANT SITE: _____ LAB: _____

TESTING METHOD: SIMULATE: _____ PERFORM: _____

APPROXIMATE COMPLETION TIME IN MINUTES: 15 Minutes

REFERENCE(S): OP 2105.009 CEDM Control System Operations

EXAMINEE'S NAME: _____ Badge #: _____

EVALUATOR'S NAME: _____

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

SATISFACTORY: _____ UNSATISFACTORY: _____

PERFORMANCE CHECKLIST COMMENTS:

_____

_____

Start Time _____ Stop Time _____ Total Time _____

SIGNED: _____ DATE: _____

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

JOB PERFORMANCE MEASURE

THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:

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

JPM INITIAL TASK CONDITIONS:

260 EFPD. OP 2105.009 Supplement 2, "CEA Exercise Test" is completed successfully through step 2.5.12 for all CEA's except CEA #46. No T-alt installed on either RSPT.

TASK STANDARD:

CEA #46 has been inserted seven (7) steps (5.25 inches) and withdrawn to the programmed insertion limit.

TASK PERFORMANCE AIDS:

OP 2105.009 Supplement 2. Complete Table 2 except for CEA 6-46.

SIMULATOR SETUP:

CEA's withdrawn to Programmed insertion limit

JOB PERFORMANCE MEASURE

INITIATING CUE:

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

Start Time: _____

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

JOB PERFORMANCE MEASURE

PERFORMANCE CHECKLIST			STANDARDS	(Circle One)
(C)	6. (Step 3.2.5.F)	Place the mode select switch to MANUAL INDIVIDUAL.	On panel 2C03, placed mode select switch to MI. Observed MI (MANUAL INDIVIDUAL) light ON.	N/A SAT UNSAT
(C)	7. (Step 3.2.5.G)	Verify CEA #46 at upper electrical limit (UEL).	On insert 2JC-9058, moved CEA 46 to UEL by going to WITHDRAW on CEA insert until #46 upper electrical limit (UEL) red light on. Observed UEL red light ON.	N/A SAT UNSAT
Procedure Note: • CEA insertion is verified to be > 5" by observation of RSPTs. Observing 5.25" change in pulse counter position does NOT mean CEA has moved > 5". • If all CEAs in the subgroup of CEA being inserted are above upper alarm deadband of 140.83 inches, the CEAC 1 or 2 CEA Deviation annunciators (2K04 J-5/2K04 J-6) will NOT actuate • Use of CEAC #1 and CEAC #2 standard OM Module to monitor raw input signal is recommended to ensure CEA movement of 5 inches. CEAC group display uses process CEA positions that are rounded off to nearest inch. • Due to scheduling or component malfunction it is acceptable for CEAs to be inserted to other than Power Operations (2102.004) Attachment D Programmed Insertion Limit.				
(C)	8. (Step 3.2.5.H)	Insert CEA #46 seven steps (>5”).	Inserted CEA seven steps (>5”). Observed insertion of 5.0 inches or greater on CEAC's #1 and #2 displays.	N/A SAT UNSAT
(C)	9. (Step 3.2.5.I)	Return CEA to UEL.	CEA #46 withdrawn to UEL.	N/A SAT UNSAT
	10. (Step 3.2.5.J)	Verify CEA returned to position required by Power Operation (2102.004), Programmed CEA Insertion to Minimize CEA Finger Wear (ATTACHMENT D).	Using Power Operation (2102.004) attachment D to position CEA to minimize Finger wear.	N/A SAT UNSAT
Examiner note: The following steps are from Power Operation (2102.004) attachment D.				
	11. (Step 1.0)	IF a Reactivity Management Brief has NOT been conducted, THEN perform a Reactivity Management Brief per COPD-030 with an SRO.	Determines that a reactivity brief has been conducted per COPD-30	N/A SAT UNSAT

JOB PERFORMANCE MEASURE

<table>
<tr><th colspan="3">PERFORMANCE CHECKLIST</th><th>STANDARDS</th><th>(Circle One)</th></tr>
<tr><td></td><td>12.
(Step 2.0)</td><td>CEAs are positioned at or just below Upper Electrical Limit (UEL) using the following table as a guide.<table><tr><th>CYCLE BURNUP (EFPD)</th><th>POSITION OF FULLY WITHDRAWN CEAs</th></tr><tr><td>> 250</td><td>UEL MINUS TWO STEPS</td></tr></table></td><td>Determine CEAs should be at UEL minus Two steps.</td><td>N/A SAT UNSAT</td></tr>
<tr><td></td><td>13.
(Step 3.1)</td><td>Withdraw CEA to its UEL light in Manual Individual (MI) control using CEDM Control System Operation (2105.009).</td><td>Verify CEA #46 is withdrawn to the UEL.</td><td>N/A SAT UNSAT</td></tr>
<tr><td></td><td>14.
(Step 3.2)</td><td>With CEA positioned at UEL, VERIFY Pulse Counter reset to 150 using Plant Computer Operations (1105.010).</td><td>Verified PMS computer is indicating 150 inches withdrawn for CEA #46</td><td>N/A SAT UNSAT</td></tr>
<tr><td></td><td>15.
(Step 3.3)</td><td>Using Pulse Counter indication, insert CEA to comply with Table 1 above using CEDM Control System Operation (2105.009).</td><td>CEA #46 inserted to programmed insertion limit (UEL - 2 steps).

Observed CEA #46 at 148.5” on Pulse counter (149” on CEAC’s)</td><td>N/A SAT UNSAT</td></tr>
<tr><td></td><td>16.
(Step 3.2.5.K)</td><td>Record results.</td><td>Using OP 2105.009 Supplement A Table 1, recorded the results of CEA #46 exercise.</td><td>N/A SAT UNSAT</td></tr>
<tr><td colspan="5">Examiner note:

The CEDMCS control may be left in any mode of operation.</td></tr>
<tr><td></td><td>17.
(Step 3.2.5.L)</td><td>WHEN all required CEA movements complete, THEN verify Mode Select switch in OFF.</td><td>On insert 2JC-9058, selected off mode of operation.</td><td>N/A SAT UNSAT</td></tr>
<tr><td colspan="5">END</td></tr>
</table>

Stop Time: _____

JOB PERFORMANCE MEASURE

EXAMINER'S COPY

JPM INITIAL TASK CONDITIONS:

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

INITIATING CUE:

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

JOB PERFORMANCE MEASURE

EXAMINEE'S COPY

JPM INITIAL TASK CONDITIONS:

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

INITIATING CUE:

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

JOB PERFORMANCE MEASURE

UNIT: 2 **REV #:** 000 **DATE:** _____

SYSTEM/DUTY AREA: Pressurizer Spray operation S8

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

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

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

APPROVED FOR ADMINISTRATION TO: **RO:** X **SRO:** X

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

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE: _____ **SIMULATOR:** Perform **CLASSROOM:** _____

POSITION EVALUATED: **RO:** _____ **SRO:** _____

ACTUAL TESTING ENVIRONMENT: **SIMULATOR:** _____ **PLANT SITE:** _____ **CLASSROOM:** _____

TESTING METHOD: **SIMULATE:** _____ **PERFORM:** _____

APPROXIMATE COMPLETION TIME IN MINUTES: 6 Minutes

REFERENCE(S): OP-2203.028 PZR System Malfunctions

EXAMINEE'S NAME: _____ **Badge #:** _____

EVALUATOR'S NAME: _____

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

SATISFACTORY: _____ **UNSATISFACTORY:** _____

PERFORMANCE CHECKLIST COMMENTS:

_____

_____

Start Time _____ **Stop Time** _____ **Total Time** _____

SIGNED: _____ **DATE:** _____

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

JOB PERFORMANCE MEASURE

THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:

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

JPM INITIAL TASK CONDITIONS:

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

TASK STANDARD:

Reactor tripped and 2P-32A secured.

TASK PERFORMANCE AIDS:

OP 2203.028 Step 2

SIMULATOR SETUP:

All RCPs running. Mode 1
CV4651 value = 1.
Trigger1: CV4656 value = .9, DO_HS_4656_G = off, & DO_HS_4656_R = off
Conditional trigger 1 set gh4g4656.
Have all backup htrs on.

JOB PERFORMANCE MEASURE

INITIATING CUE:

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

START TIME:_____

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

PERFORMANCE CHECKLIST			STANDARDS	(Circle One)
	1. (Step 2.A)	IF ANY PZR Spray valve failed open, THEN perform the following: A. Place affected PZR Spray valve in MANUAL and close: • 2CV-4651 • 2CV-4652	On panel 2C04 placed PZR spray valve 2HS-4651B in manual Placed 2CV-4651 handswitch in closed. Observed red and green lights flash above handswitch and the red light remains on.	N/A SAT UNSAT
	2. (Step 2.B.1)	IF affected PZR Spray valve did NOT close, THEN perform the following: Place associated PZR Spray valve handswitch to OPEN for 1 second: • 2CV-4651 • 2CV-4652 .	On panel 2C04, placed handswitch for 2CV-4651 in open for 1 sec. Observed red light ON above handswitch	N/A SAT UNSAT
	3. (Step 2.B.2)	WHEN 5 seconds have elapsed, THEN place handswitch in CLOSE until green indicating light flashes.	On panel 2C04 and 5 sec have elapsed, placed handswitch for 2CV-4651 in close until lights flash. Observed red and green lights flash above handswitch and the red light remains on.	N/A SAT UNSAT
	4. (Step 2.C)	IF affected PZR Spray valve is 2CV-4651 <u>AND</u> will NOT close, THEN close associated energized Block valves: • 2CV-4655 • 2CV-4656	On panel 2C04, placed 2CV-4655/2CV-4656 handswitch to close. Observed 2CV-4656 lights out and PZR pressure lowering.	N/A SAT UNSAT

JOB PERFORMANCE MEASURE

	PERFORMANCE CHECKLIST		STANDARDS	(Circle One)
EXAMINER'S NOTE: The following is the alternate path portion of this JPM				
	5. (Step 2.E)	IF both of the following are true, Affected PZR spray valve open. Associated energized PZR Spray Block valve will NOT close, THEN verify ALL PZR heaters ON.	On panel 2C04, observed all pzr heater on as indicated by red lights above the handswitches.	N/A SAT UNSAT
(C)	6. (Step 3.A)	IF RCS pressure lowers to 2000 psia, THEN perform the following: IF plant in mode 1 or 2, THEN trip Reactor. **Examiner CUE:** **If desired to speed up JPM then inform examinee that RCS pressure is 2000 psia.**	When, RCS pressure is observed at 2000 psia or informed by evaluator RCS is 2000 psia, Tripped the reactor.	N/A SAT UNSAT
(C)	7. (Step 3.B)	Stop RCP in loop with failed PZR Spray valve.	Secured 2P-32A Reactor Coolant pump.	N/A SAT UNSAT
	8. (Step 3.C)	IF only one RCP affected AND desired to balance reactor coolant loop temperatures, THEN verify one RCP secured in each loop.	If desired then Secured either 2P-32C or 2P-32D.	N/A SAT UNSAT
END				

STOP TIME:_____

EXAMINER's COPY

JPM INITIAL TASK CONDITIONS:

Mode 1
2CV-4651 PZR spray valve has failed open during boron equalization.

INITIATING CUE:

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

JOB PERFORMANCE MEASURE

EXAMINEE's COPY

JPM INITIAL TASK CONDITIONS:

Mode 1
2CV-4651 PZR spray valve has failed open during boron equalization.

INITIATING CUE:

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

JOB PERFORMANCE MEASURE

UNIT: 2 **REV #:** 05 **DATE:** _____

SYSTEM/DUTY AREA: Emergency Diesel Generator System

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

JTA#: ANO2AOEDGOFFNORM5

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

APPROVED FOR ADMINISTRATION TO: RO: X **SRO:** X

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

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE: Simulate **SIMULATOR:** _____ **LAB:** _____

POSITION EVALUATED: RO: _____ **SRO:** _____

ACTUAL TESTING ENVIRONMENT: SIMULATOR: _____ **PLANT SITE:** _____ **LAB:** _____

TESTING METHOD: SIMULATE: _____ **PERFORM:** _____

APPROXIMATE COMPLETION TIME IN MINUTES: 20 Minutes

REFERENCE(S): OP 2104.036

EXAMINEE'S NAME: _____ **Badge #:** _____

EVALUATOR'S NAME: _____

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

SATISFACTORY: _____ **UNSATISFACTORY:** _____

PERFORMANCE CHECKLIST COMMENTS:

_____

_____

Start Time _____ **Stop Time** _____ **Total Time** _____

SIGNED: _____ **DATE:** _____

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

THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:

The examiner shall review the "Briefing Checklist - System Walkthrough" portion of OP 1064.023 Attachment 6 with the examinee.

JPM INITIAL TASK CONDITIONS:

The plant is in Mode 3 following an automatic reactor trip. A Station Blackout exists. There is no green DC power available.

TASK STANDARD:

2DG2 [2K-4B] has been started with normal voltage and frequency.

TASK PERFORMANCE AIDS:

OP 2104.036 Exhibit 2

JOB PERFORMANCE MEASURE

INITIATING CUE:

The SM/CRS directs, "Perform a loss of DC start of 2DG2 using OP 2104.036, Exhibit 2."

START TIME: _____

		PERFORMANCE CHECKLIST	STANDARDS	(Circle One)
Procedure Caution: Fault condition that caused loss of DC may still be present and should be removed if known.				
Procedure Note: • This procedure assumes no AC or DC power available. • Electrical Safety equipment will be required for closing of the EDG output breaker and the SW pump supply breaker.				
	1. (Step 1.0)	IF NOT directed to perform this exhibit per Alternate Shutdown (2203.014), THEN obtain arc flash PPE (suit, hood, and voltage rated or leather gloves) for Manual Operation of 4160/6900V AC Breaker with Door Open. **Examiner Cue:** **Arc flash PPE has been obtained.**	Obtains Arc flash PPE and Electrical PPE on at PPE cabinet. **Examiner Note: The examinee should show where to obtain to PPE but do not require them to bring it for simulation of this JPM.**	N/A SAT UNSAT
	2. (Step 2.0)	Open one of the following sets of breakers: - 2C108 breaker (2D24-2) - 2E21 breaker (2D24-6) - 2C108 breaker (2D24-8) OR - 2E21 breaker (D2E21NA6) (located in 2E22) - 2C108 breaker (D2C108NA8) - 2C108 breaker (D2C108NA2) **Examiner Cue:** (For each breaker) **Breaker indicates NOT OPEN.**	For the listed breaker, opened panel door and moved breaker handle to OFF.	N/A SAT UNSAT
TRANSITION NOTE: **Go to 2A4 switchgear room**.				
EXAMINERS NOTE: For the 4160v breakers in Steps 2 and 3, do NOT open the breaker cubicle doors. Use the provided pictures. Have the candidate explain the indications he would use to determine the following. 1. Breaker position 2. Closing Spring Status Standard: 1. The student must use mechanical breaker position indication 2. The student must use mechanical closing spring status indication. 3. Both of these indicators are located on the breaker.				

		PERFORMANCE CHECKLIST	STANDARDS	(Circle One)
		Procedure Note: Instructions for manual operation of 4160 VAC Breakers are contained in Electrical System Operations (2107.001), Exhibits 1 and 2.		
		Examiners Note: The following breakers are listed with their respective conditions for the plant conditions that exist.		
(C)	3. (Step 3.0)	Verify the following breakers OPEN WITH closing springs charged. SW Pump 2P4C (2A-402) • This breaker will be **closed** with closing springs charged SW Pump 2P4B (2A-403) • This breaker will be open with closing springs charged 2DG2 Output breaker (2A-408) • This breaker will be open with closing springs charged **Examiner Cue:** **2A402 opens when the mechanical trip button is pushed.**	At bus 2A4 at cubicle 2A411, opened cubicle door. Observed indications for the following. • Mechanical breaker position • Mechanical closing spring indication Operator opened any closed breaker by pushing the mechanical breaker trip button on the breaker	N/A SAT UNSAT
(C)	4. (Step 4.0)	Verify the following breakers OPEN. CS Pump 2P35B (2A-404) ♦ Breaker is open LPSI Pump 2P60B (2A-405) ♦ Breaker is open HPSI Pump 2P89B (2A-406) ♦ Breaker is open HPSI Pump 2P89C (2A-407) ♦ Breaker is open 2A4 Supply breaker (2A-409) ♦ Breaker is **closed** 2A3-2A4 Tie (2A-410) ♦ Breaker is open **Examiner Cue:** **2A409 opens when the mechanical trip button is pushed.**	For each listed breaker, verified the breaker to be open with the mechanical breaker indication.	N/A SAT UNSAT

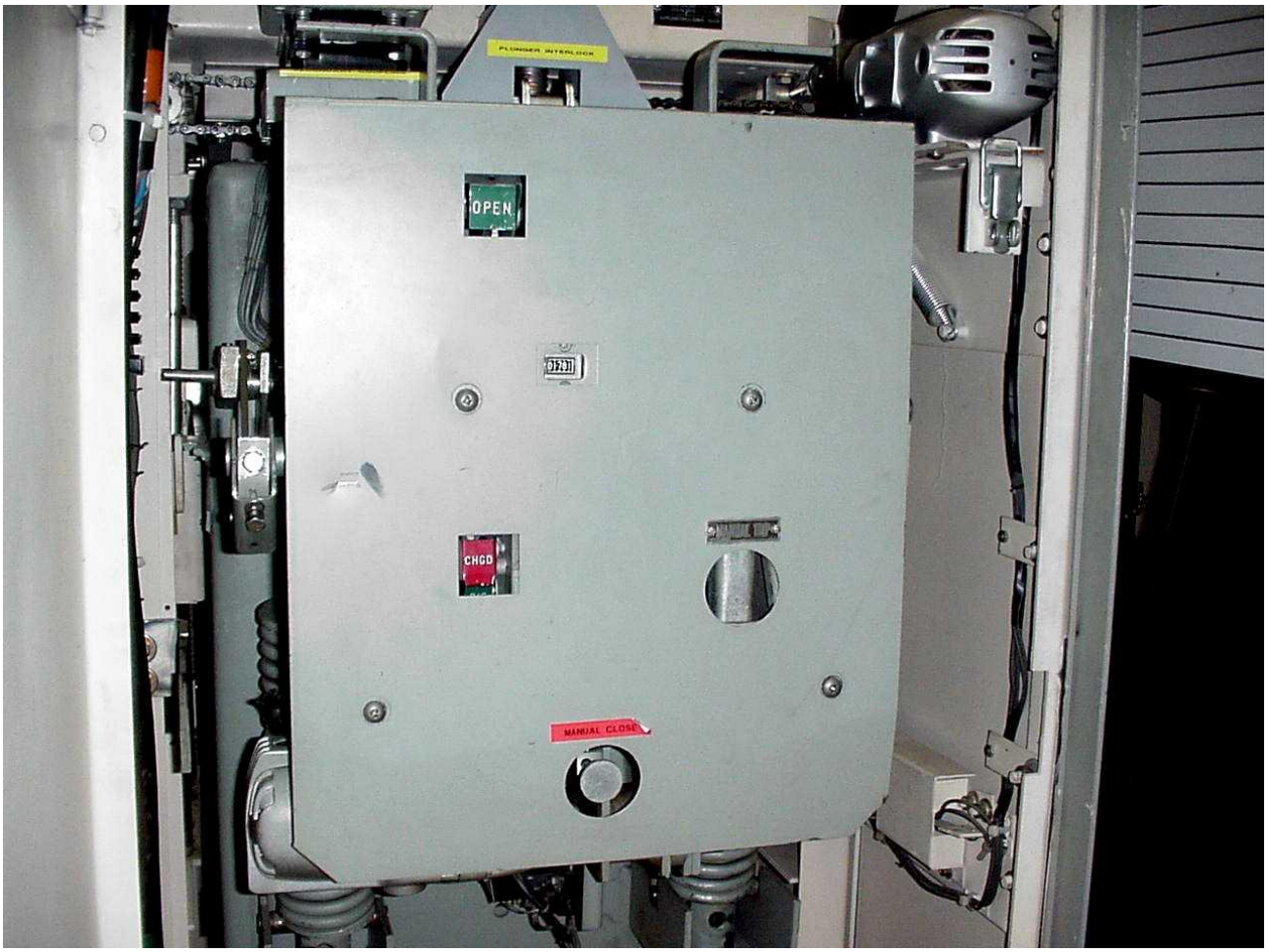
EXAMINERS NOTE: - **2CV-1504-2 requires DC power to open automatically.** - **After operator requests 2CV-1504-2 opened or if he states he is going to open 2CV-1504-2 , provide Cue of step 5.**				
(C)	5. (Step 5.0)	Verify 2DG2 service water outlet (2CV-1504-2) open using local ratchet. **Examiner Cue:** **WCO reports Service Water Valve (2CV-1504-2) is OPEN.**	Using radio or telephone communications, instructed WCO to OPEN 2CV-1504-2 locally using manual operator. OR Using radio or telephone communications, contacted Control Room personnel to have WCO to OPEN 2DG2 Service Water valve (2CV-1504-2) using the manual operator locally.	N/A SAT UNSAT
TRANSITION NOTE: **Go to 2DG2 room.**				
	6. (Step 6.0)	Place Exciter Regulator Local/Remote HS in LOCAL. **Examiner Cue:** **The exciter regulator handswitch indicates LOCAL.**	On panel 2E22, rotated Exciter Regulator handswitch to LOCAL.	N/A SAT UNSAT
	7. (Step 7.0)	Unlock local Engine Control switch (2HS-2835-2). **Examiner Cue:** **Engine Control switch is unlocked.**	On panel 2E21, inserted key in Engine Control Switch. Rotated key clockwise to unlock.	N/A SAT UNSAT
	8. (Step 8.0)	Place 2HS-2835-2 in START. **Examiner Cue:** **The Engine Control handswitch indicates START.**	Rotated Engine Control handswitch through LOCKOUT to START.	N/A SAT UNSAT
Procedure Caution: Protective circuits are NOT functional with control power off.				
TRANSITION NOTE: **Go to Alternate Shutdown Locker located just outside U2 CR Extension**				
	9. (Step 9.1)	Obtain FNM 10 amp fuses from CRS bag in Alternate Shutdown file cabinet. **Examiner Cue:** **Fuses in hand.**	At the Alternate Shutdown file cabinet, obtained at least two FNM 10 amp fuses from the CRS bag.	N/A SAT UNSAT
TRANSITION NOTE: **Go to 2DG2 room.**				
Examiner Note: **Step 9.2 for doning arc flash PPE is not required to be performed for this JPM. Inform the examinee**				

that the PPE does not need to be doned.

(C)	10. (Step 9.3)	Manually operate EITHER Air Start Solenoid by slowly rotating manual operator stem clockwise: 2SV-2829-2 2SV-2830-2 **Examiner Cue:** **Engine noise indicates start.**	Rotated manual operator stem on either Air Start Solenoid clockwise.	N/A SAT UNSAT
	11. (Step 9.4)	WHEN engine starts, THEN disengage manual operator by rotating stem counter-clockwise.	Upon 2DG2 start, disengaged manual solenoid operator by rotating counter-clockwise.	N/A SAT UNSAT
EXAMINER'S NOTE: **The negative cue in the following step is REQUIRED to implement the Alternate Success Path.**				
Procedure Note: Manual voltage adjust is NOT available in this mode of operation. Voltage Regulator maintains 4160 volts as set prior to last shutdown.				
	12. (Step 9.5)	Check generator voltage 3800 to 4400 volts. **Examiner Cue:** **2DG2 voltage is ~ 0 volts.**	On panel 2E21, checked 2DG2 voltage between 3800 and 4400 volts on V-2DG2-3, 2DG2 local AC voltmeter.	N/A SAT UNSAT
Examiner Note: Do not open the local EDG panel. Use the first Open Panel EDG picture to have them describe the location of the Exciter Field Shutdown Contactor (K1). After they locate it show them the close up picture to describe operating the slide switch. Use provided pictures to have the examinee show how they would operate the K1 slide switch and install the fuses for the back up field flash.				
	13. (Step 9.6)	IF generator has NO Output Voltage, THEN manually reset Exciter Relay as follows by operating red slide switch on Exciter Field Shutdown Contactor (K1) in 2E22. **Examiner Cue:** **Red slide switch moves up.** **2DG2 voltage is ~ 0 volts.**	Inside panel 2E22, pushed the red slide switch up on the Exciter Field Shutdown Contactor (K1).	N/A SAT UNSAT
Examiner Note: Do not open the local EDG panel. Have the examinee describe the location of the fuse holder for the backup field flash fuses (Bottom half of 2E22 on left side) Use provided picture to have the examinee show how they would install the fuses for the back up field flash.				

(C)	14. (Step 9.7.1)	IF generator output voltage < 3800 volts, THEN perform the following: Install FNM 10 amp fuses in fuse block in 2E22 labeled: FUSES SHALL NOT BE INSTALLED DURING NORMAL OPERATION. **Examiner Cue:** **Fuses installed.**	Inside panel 2E22, installed **two** FNM 10 amp fuses in fuse block labeled "Fuses Shall Not Be Installed During Normal Operation".	N/A SAT UNSAT
(C)	15. (Step 9.7.2)	Place Flashing Power Select Switch (DG2F/SS) to BACKUP. **Examiner Cue:** **Switch indicates BACKUP.**	On panel 2E22, placed DG2F/SS to BACKUP.	N/A SAT UNSAT
(C)	16. (Step 9.7.3)	Place Flashing Power Control Switch (DG2F/CS) to BACKUP. **Examiner Cue:** **Voltage indicates ~ 4160 volts.**	On panel 2E22, held DG2F/CS in BACKUP until voltage builds up. On panel 2E21, observed 2DG2 voltage between 3800 and 4400 volts on V-2DG2-3, 2DG2 local AC voltmeter. Released DG2F/CS.	N/A SAT UNSAT
	17. (Step 9.7.4)	WHEN voltage builds up, THEN release switch.	On panel 2E22, released DG2F/CS when voltage builds up.	N/A SAT UNSAT
	18. (Step 9.8)	Verify generator frequency 59.5 to 60.5 Hz AND maintain as loads are added. **Examiner Cue:** **2DG2 frequency is ~ 60 Hz.**	On panel 2E21, verified 2DG2 frequency between 59.5 and 60.5 Hz and maintained as loads are added.	N/A SAT UNSAT
Examiner Note: The JPM should be ended after step 9.8 is completed.				
END				

STOP TIME: _____


PLUNGER INTERLOCK
OPEN
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MANUAL CLOSE


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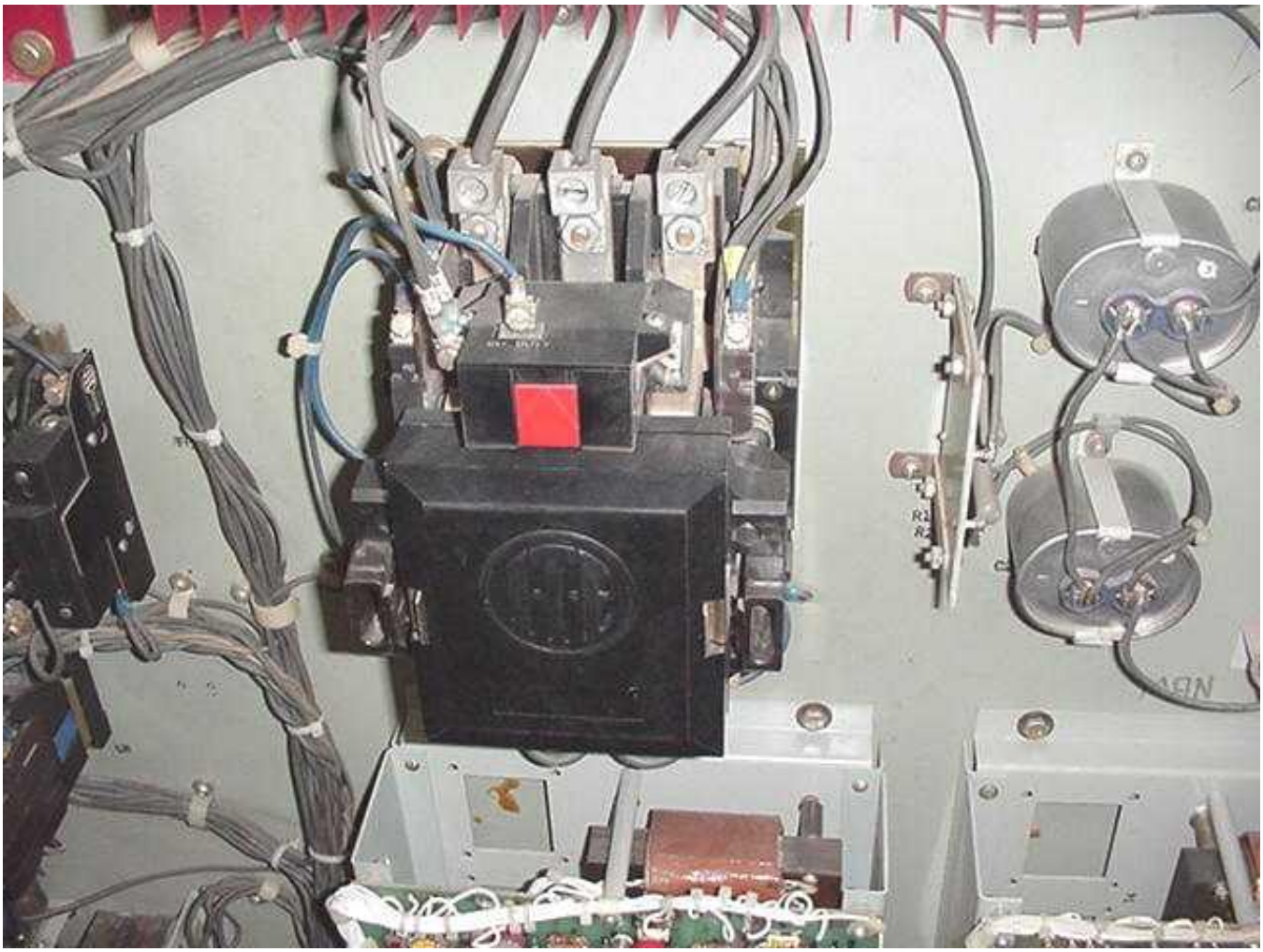
CHCD




PORTEC INC.
ELECTRIC PRODUCTS CONTROLS DIV.
FUSES SHALL NOT BE INSTALLED DURING NORMAL OPERATION
FIELD FLASHING POWER
FUSES SHALL NO
BE INSTALLED
DURING NORMA
OPERATION
T1
TS2

Examiner's Copy

JPM INITIAL TASK CONDITIONS:

The plant is in Mode 3, post reactor trip, no AC or green DC power is available.
2DG1 [2K-4A] is red tagged out for maintenance with its oil pump removed.

INITIATING CUE:

The SS/CRS directs, "Perform a loss of DC start of 2DG2 using OP 2104.036, Exhibit 2."

Examinee's Copy

JPM INITIAL TASK CONDITIONS:

The plant is in Mode 3, post reactor trip, no AC or green DC power is available.
2DG1 [2K-4A] is red tagged out for maintenance with its oil pump removed.

INITIATING CUE:

The SS/CRS directs, "Perform a loss of DC start of 2DG2 using OP 2104.036, Exhibit 2."

JOB PERFORMANCE MEASURE

UNIT: 2 **REV #:** 010 **DATE:** _____

SYSTEM/DUTY AREA: Control Element Drive Mechanism Control System

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

JTA#: ANO2-AO-CEDM-NORM2

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

APPROVED FOR ADMINISTRATION TO: RO: X **SRO:** X

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

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE: Simulate **SIMULATOR:** _____ **LAB:** _____

POSITION EVALUATED: RO: _____ **SRO:** _____

ACTUAL TESTING ENVIRONMENT: SIMULATOR: _____ **PLANT SITE:** _____ **LAB:** _____

TESTING METHOD: SIMULATE: _____ **PERFORM:** _____

APPROXIMATE COMPLETION TIME IN MINUTES: 15 Minutes

REFERENCE(S): OP 2105.009

EXAMINEE'S NAME: _____ **BADGE #:** _____

EVALUATOR'S NAME: _____

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

SATISFACTORY: _____ **UNSATISFACTORY:** _____

PERFORMANCE CHECKLIST COMMENTS:

_____

_____

Start Time _____ **Stop Time** _____ **Total Time** _____

SIGNED: _____ **DATE:** _____

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

JOB PERFORMANCE MEASURE

THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:

The examiner shall review the "Briefing Checklist - System Walkthrough" portion of OP 1064.023 Attachment 6 with the examinee.

JPM INITIAL TASK CONDITIONS: The following conditions exist.

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

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

TASK PERFORMANCE AIDS: OP 2105.009 Section 7.0 ;

JOB PERFORMANCE MEASURE

INITIATING CUE:

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

START TIME: _____

	PERFORMANCE CHECKLIST		STANDARDS	(Circle One)
Procedure Note: DSS panels (2C407/2C408) are powered from 2Y26 240V System Output breaker (CB7). (CR-ANO-2-2005-1277)				
	1. (Step 7.1.1)	DSS Contactor OR DSS Bypass Breaker closed. • 29-1/DSS OR 52-1/DSS (MG Set #1) **Examiner Cue:** **The DSS contactor indicates red light on and green light off.**	In the control room and verified DSS contactor or contactor bypass breaker closed by indication on panel 2C14; OR At panel 2C407, verified the DSS contact CLOSED by observing the red closed indicating lamp illuminated or verified the contactor bypass breaker closed by observing the red mechanical indicating flag on the breaker indicating closed OR At panel 2C-409 just inside the CEDMCS Room, observed the DSS contactor closed by observing the red closed lamp illuminated.	N/A SAT UNSAT
TRANSITION NOTE: Go to the 2B53 room, elevation 368' TB				
	2. (Step 7.1.2)	Check MG set #1 power supply breaker (2B-722) closed. **Examiner Cue:** **Breaker status mechanical indicator shows red for "breaker closed" and yellow "springs discharged".**	At MCC 2B7 cubicle 2B-722, observed red "breaker closed" mechanical indicator and yellow "springs discharged" mechanical indicator.	N/A SAT UNSAT
TRANSITION NOTE: Go to CEDM MG Set room				
	3. (Step 7.1.3)	Motor Input circuit breaker open (handswitch in OFF) **Examiner Cue:** **Circuit breaker is in OPEN and Control switch is in OFF.**	At panel 2C163, verified motor input Breaker OPEN (control switch in OFF).	N/A SAT UNSAT

	PERFORMANCE CHECKLIST		STANDARDS	(Circle One)
	4. (Step 7.1.4)	Neutral Interrupter open (handswitch in OFF). **Examiner Cue:** **Neutral interrupter pointing to OFF.**	At panel 2C163, verified neutral interrupter pointing to OFF.	N/A SAT UNSAT
EXAMINER'S NOTE: The breaker may be inaccessible if motor input/neutral interrupter handle(s) are installed. Therefore, the candidate may be required to explain the indications available to verify generator output breaker OPEN.				
	5. (Step 7.1.5)	Generator Output circuit breaker for selected MG set open (inside lower right section of cabinet): **Examiner Cue:** **Generator Output circuit breaker is OPEN.**	Inside panel 2C163 in the lower right section, verified green flag visible on breaker. OR Contacted the control room to verify the generator output breaker green OPEN indicating lamp on 2C14 is lit. OR At panel 2C163 verified the green "load off" lamp illuminated.	N/A SAT UNSAT
	6. (Step 7.1.6)	Verify motor control selector switch in LOCAL. **Examiner Cue:** **Selector switch in LOCAL.**	At panel 2C163, verified motor control selector switch pointing to LOCAL.	N/A SAT UNSAT
Examiner note: **Step 7.2.1 is only verifying step 7.1 is complete which the candidate just performed.**				
	7. (Step 7.2.2)	Verify Reactor Trip circuit breakers 1 through 8 open. **Examiner Cue:** **Green light on red light off for all reactor trip circuit breakers. Or telling them that the TCBs are open if they contact the control room.**	Verified Reactor trip circuit breakers 1 through 8 are open by any of the following: Initial conditions Observing locally Calling the control room.	

JOB PERFORMANCE MEASURE

PERFORMANCE CHECKLIST			STANDARDS	(Circle One)
(C)	8. (Step 7.2.3)	Manually close Motor Input circuit breaker by taking handswitch to ON. **Examiner Cue:** **Input circuit breaker HS is pointing to on.**	At panel 2C163, closed the motor input circuit breaker by rotating the control handle CW from "OFF" to "ON".	N/A SAT UNSAT
(C)	9. (Step 7.2.4)	Close Neutral Interrupter by taking handswitch to ON. **Examiner Cue:** **Input circuit breaker HS is pointing to on.**	At panel 2C163, closed the neutral interrupter by rotating the control handle CW from OFF to the ON position.	N/A SAT UNSAT
	10. (Step 7.2.5)	Check Load Off light illuminated. **Examiner Cue:** **"Load off" light ON.**	At panel 2C163, observed the green "load off" light illuminated.	N/A SAT UNSAT
(C)	11. (Step 7.2.6)	Depress Motor On pushbutton to start motor. **Examiner Cue:** **The red "motor on" lamp is illuminated.**	At panel 2C163, depressed "MOTOR ON" push-button. Observed the red "motor on" lamp lit.	N/A SAT UNSAT
Procedure Note: If voltage band of 240-243 VAC not obtained in step 7.2.7, then Push to Buildup button should be released and substep A. should be performed.				
(C)	12. (Step 7.2.7)	WHEN Push Voltage Buildup light is illuminated, AND at least 30 seconds have elapsed, THEN depress and hold Push to Buildup Gen Voltage push button until 240 to 243 VAC is reached. **Examiner Cue:** **State that the push voltage buildup button light is illuminated.** **Examiner Cue:** **While button being depressed cue the applicant that Voltage indicates 241 VAC**	At panel 2C163 performed the following. With "push voltage buildup" light on depressed VOLTAGE BUILDUP push-button until voltage is between 240 and 243 VAC. Released push-button.	N/A SAT UNSAT

JOB PERFORMANCE MEASURE

PERFORMANCE CHECKLIST			STANDARDS	(Circle One)
	13. (Step 7.2.8)	Push Reset pushbutton to clear any remaining alarms. **Examiner Cue:** **All alarms are clear.**	At panel 2C163, cleared any alarms by depressing and releasing RESET push-button. Observed alarms cleared.	N/A SAT UNSAT
(C)	14. (Step 7.2.9)	Close Generator Output breaker for selected MG set by pushing Load On pushbutton: • 2C163 2CB (MG set #1) **Examiner Cue:** **Load on Light illuminated and Load off light extinguished.**	At panel 2C163, depressed LOAD ON push-button (2CB) and released. Observed red "load on" light lit, green "load off" light extinguished.	N/A SAT UNSAT
END				

STOP TIME: _____

JOB PERFORMANCE MEASURE

EXAMINER'S COPY

JPM INITIAL TASK CONDITIONS:

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

INITIATING CUE:

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

JOB PERFORMANCE MEASURE

EXAMINEE'S COPY

JPM INITIAL TASK CONDITIONS:

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

INITIATING CUE:

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

JOB PERFORMANCE MEASURE

UNIT: 2 **REV #:** 010 **DATE:** _____

SYSTEM/DUTY AREA: Spent Fuel Pool Cooling System

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

JTA#: ANO2-WCO-SFP-EMER1

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

APPROVED FOR ADMINISTRATION TO: **RO:** X **SRO:** X

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

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE: Simulate **SIMULATOR:** _____ **CLASSROOM:** _____

POSITION EVALUATED: **RO:** _____ **SRO:** _____

ACTUAL TESTING ENVIRONMENT: **SIMULATOR:** _____ **PLANT SITE:** _____ **CLASSROOM:** _____

TESTING METHOD: **SIMULATE:** _____ **PERFORM:** _____

APPROXIMATE COMPLETION TIME IN MINUTES: 20 Minutes

REFERENCE(S): **OP-2104.006 Fuel Pool Systems**

EXAMINEE'S NAME: _____ **Badge #:** _____

EVALUATOR'S NAME: _____

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

SATISFACTORY: _____ **UNSATISFACTORY:** _____

PERFORMANCE CHECKLIST COMMENTS:

_____

_____

Start Time _____ **Stop Time** _____ **Total Time** _____

SIGNED: _____ **DATE:** _____

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

JOB PERFORMANCE MEASURE

THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:

The examiner shall review the "Briefing Checklist - System Walkthrough" portion of OP 1064.023 Attachment 6 with the examinee.

JPM INITIAL TASK CONDITIONS:

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

Neither fuel pool cooling pump is available.

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

Fuel pool level is low.

2P66 is aligned to the RWT and running.

TASK STANDARD:

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

TASK PERFORMANCE AIDS:

OP 2104.006 Section 14.3

SIMULATOR SETUP:

N/A

JOB PERFORMANCE MEASURE

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

START TIME:_____

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

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

Procedure Caution:

- If SFP overfilled, water can spill through SFP Cooling/SFP Purification pipe chase (SFP, ~ 402', SW corner) and contaminate SFP valve gallery (AB 354') and hall near 2F-3A/B (AB 335')
- If flow introduced with level > 401' 7", some overflow can occur due to wave motion of water.

Procedure Note:

If CLP (2LI-5400) used as SFP level indication during SFP drain and fill evolutions, SFP and CLP levels will differ slightly until water levels equalize through seal area.

	10. (Step 14.3.7. A)	IF two Operators available, THEN establish and maintain the following: Operator stationed at SFP to continuously monitor level: SFP (2LI-5401) CLP (2LI-5400) if gate removed or deflated **Examiner CUE:** **Operator is stationed at SFP to monitor level. responds to radio communications.**	Verified that an Operator was stationed to monitor SFP level	N/A SAT UNSAT
	11. (Step 14.3.7. B)	Operator stationed at SFP SW Hdr 1 Emerg Feed Isol to SF Pool (2SW-138) for valve adjustment	Examinee positions self at 2SW-138.	N/A SAT UNSAT
	12. (Step 14.3.7. C)	Communications between stationed Operators. **Examiner CUE:** **Operator that stationed at SFP to monitor level responds to radio communications.**	Examinee establishes communication with Operator stationed at the Spent Fuel Pool	N/A SAT UNSAT
	13. (Step 14.3.7. D)	*IF level being maintained without frequent valve adjustment, THEN the following may be performed: Secure Operator at 2SW-138. Reassign remaining Operator to continuously monitor SFP level EXCEPT when 2SW-138 adjustment needed.	Examinee assesses level being maintained. **Examiner Note: Examinee will determine if level can be maintained without frequent valve adjustment after makeup is established.**	N/A SAT UNSAT

EXAMINERS NOTE:

- Final valve position is at discretion of examinee to ensure level is raised/maintained.

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

STOP TIME: _____

Examiner's Copy

JPM INITIAL TASK CONDITIONS:

(2K11-K5) "FUEL POOL TEMP HI" is in alarm.
Neither fuel pool cooling pump is available.
An operator is stationed at the spent fuel pool to monitor spent fuel pool level.
Fuel pool level is low.
2P66 is aligned to the RWT and running.

INITIATING CUE:

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

Examinee's Copy

JPM INITIAL TASK CONDITIONS:

(2K11-K5) "FUEL POOL TEMP HI" is in alarm.
Neither fuel pool cooling pump is available.
An operator is stationed at the spent fuel pool to monitor spent fuel pool level.
Fuel pool level is low.
2P66 is aligned to the RWT and running.

INITIATING CUE:

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

Facility: ANO-2	Scenario No.: 1 (New)	Op-Test No.: 2012-1

Examiners:	Operators:

Initial Conditions:
~94% power due to Main Steam Line high vibs, MOL, All Engineered Safety Features systems are in standby. #3 and #4 MTG control valve steam lead valves failed closed. Voltage regulator auto tracking circuit is disabled. RED Train Maintenance Week.

Turnover:
~94% power due to Main Steam Line high vibs, 260 EFPD. EOOS indicates 'Minimal Risk'. RED Train Maintenance Week. #3 and #4 MTG control valve steam lead valves failed closed. Voltage regulator auto tracking circuit is disabled.
Scheduled Evolution: Swap running Electro Hydraulic (EH) pumps.

Event No.	Malf. No.	Event Type*	Event Description
1		N (BOP) N (SRO)	Shift Electro Hydraulic (EH) pumps
2	XSI2PT5602		Containment pressure transmitter fails high. Tech Spec for SRO.
3	CWS2P3AFLT	C (BOP) R (ATC) C (SRO)	'A' Circulating Water pump trip.
4	CV48731	C (ATC) C (SRO)	VCT outlet valve fails to close.
5	XRCCHAPLVL	I (ATC) I (SRO)	'A' Pressurizer Level Channel Fails Low. Tech Spec for SRO
6	K01-A07 BUS2A1 BUS2A3 A309	M (ALL)	2A-1 bus negative sequence and lockout causing a reactor trip. Also, 2A-3 bus will lockout and the feeder breaker (2A-309) will remain closed.
7	500LOSE500 500LOSE161 EFW2P7OS	M (ALL)	Loss of Offsite Power and 2P-7A EFW pump overspeed trips causing a complete loss of feedwater.
8	HPI2P89FAL	C (BOP) C (SRO)	2P-89B High Pressure Safety Injection pump fails to start SIAS

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

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

Scenario #1 Objectives

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

SCENARIO #1 NARRATIVE

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

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

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

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

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

SCENARIO #1 NARRATIVE (continued)

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

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

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

Simulator Instructions for Scenario 1

Reset simulator to MOL 94% power IC stead state.
Ensure that AACG is secured and annunciators clear.
Place MINIMAL RISK, Green Train Protected and RED Train Maintenance Week signs on 2C11.
2P-89C aligned to green train.
T1, T2, T3, T4, & T5 set to false.
T5 = Reactor trip

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

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

Cue: If contacted as the WCO, report that 2P-7A has a governor valve casing is cracked, and there is no oil in the turbine casing.		
		2P-89B High Pressure Safety Injection pump fails to start SIAS
Cue: If requested as IAO, then report that 2P-89B HPSI pump breaker looks normal and has no drop flags. **Cue: If requested as WCO, then report that 2P-89B HPSI pump post start checks are satisfactory.**		

Op-Test No.: 2012-1	Scenario No.: 1	Event No.: 1
Event Description: Shift Electro Hydraulic (EH) pumps		

Time	Position	Applicant's Actions or Behavior
		Procedure Note: • When performing first pump swap after system startup, a larger than normal pressure drop could occur when running pump is secured if pressure compensator for oncoming pump was adjusted with turbine offline. • Throttling Pressure Compensator Control valve CLOSED will RAISE pressure. • Throttling Pressure Compensator Control valve OPEN will LOWER pressure.
	ANY	8.1 Station operator with hand held radio locally to monitor system AND prepared to raise pressure if required.
Cue: If requested as IAO, report that you are standing by at the EH pump ready to raise pressure as required.		
	BOP	8.3 IF starting 2P-14B and securing 2P-14A, THEN perform the following: 8.3.1 Start EHC Pump 2P-14B (2HS-9651).
Cue: When 2P-14B is started wait ~ 15 sec, report that 2P-14B is running sat with discharge pressure is 1650 psi.		
	BOP	8.3.2 IF pressure adjustment required to obtain 2P-14B discharge pressure (2PI-9679) > 1550 psig, THEN adjust using 2P-14B Pressure Compensator (2EH-30). **Examiner note: Pressure adjustment not required.**
	BOP	8.3.3 Secure EHC Pump 2P-14A (2HS-9650).
Cue: When 2P-14A is secured wait ~ 15 sec, report that 2P-14A secured sat.		
	BOP	8.3.4 IF pressure adjustment required to obtain EH Header pressure (2PI-9674) 1580 to 1620 psig, THEN adjust using 2P-14B Pressure Compensator (2EH-30).
Cue: When requested report that 2PI-9674 is reading 1600 psi.		
Termination criteria: EH pumps shifted or at lead examiner's discretion.		

Op-Test No.: 2012-1	Scenario No.: 1	Event No.: 2
Event Description: Containment pressure transmitter fails high. Tech Spec for SRO.		

Time	Position	Applicant's Actions or Behavior
Cued by lead examiner	ANY	Announce annunciators: 2K04-A5 CH B RPS/ESF/PRETRIP/TRIP 2K04-B3 PPS Channel TRIP
	ANY	Report Hi containment pressure and Hi/Hi Containment pressure pretrip/trip on PPS insert. Also, report channel 2 Containment pressure reading 27 psia.
	BOP	Compare all four channels of Containment pressure.
	SRO	Implement Annunciator Corrective Action 2203.012D. 2K04-A5 CH B RPS/ESF/PRETRIP/TRIP applicable actions: 2.1 Refer to PPS insert on 2C03 to determine cause. 2.2 Compare all Channels to validate alarm. 2.6 IF channel failed, THEN refer to Tech Specs 3.3.1.1, 3.3.2.1, 3.3.3.5, 3.3.3.6, and TRM 3.3.1.1. 2K04-B3 PPS Channel TRIP applicable actions: 2.1 Determine which RPS or ESFAS trips have occurred on PPS inserts. 2.3 IF channel failed, THEN refer to Tech Specs 3.3.1.1 and 3.3.2.1 and TRM 3.3.1.1.
	SRO	Enter Tech **3.3.1.1, and 3.3.2.1.** **Examiner Note: SRO must enter Tech Spec 3.3.1.1 action 2 and Tech Spec 3.3.2.1 action 10.**
	SRO	Direct BOP to bypass bistable points for the associated functional units: Containment Pressure Hi (Bistable 13, 16, and 17).

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

Op-Test No.: 2012-1 Scenario No.: 1 Event No.: 3 & 4

Event Description: 'A' Circulating Water pump trip. Also the VCT outlet valve fails to close.

Time	Position	Applicant's Actions or Behavior
Cued by Lead Examiner	ANY	Announce annunciator: 2K12-A9 CIRC WTR SYS POTENTIAL FAILURE.
	ANY	Report 2P-3A is tripped and the discharge valve is closing / closed.
	SRO	Enter and implement 2203.019 Loss of Condenser Vacuum AOP.
	SRO	1. Open Placekeeping page. 2. Notify Control Board Operators to monitor floating steps. 3. Check procedure entered due to loss of OR reduced Circulating Water flow.
	ANY	4. Verify Circ Water pump operation as follows: • At least ONE Circ Water pump (2P3A/B) running. • ANY stopped Circ Water Pump associated Discharge valve closed: 2P-3A 2CV-1224 2P-3B 2CV-1215
Cue: When contacted as the OAO, then report that 2P-3A has an acrid odor. **Cue: When contacted as the IAO, then report the 2P-3A has over current drop flags.**		
	ANY	■5. Check Condenser Vacuum less than 7 inches HG Abs.
	ANY	■6. Check condenser Vacuum less than 5.3 inches HG Abs. **Examiner note:** Condenser Vacuum will trend > 5.3 inches HG Abs. (perform contingency)
	SRO	Direct Step 6 Contingencies. ■6. IF Condenser pressure greater than 5.3 inches HG Abs, THEN perform the following:
	ATC	A. Commence Emergency Boration using 2202.010 Exhibit 1.

Op-Test No.: 2012-1	Scenario No.: 1	Event No.: 3 & 4
Event Description: 'A' Circulating Water pump trip. Also the VCT outlet valve fails to close.		

Emergency Boration	ATC	1. Select ONE of the following Emergency Boration flowpaths: **FLOWPATH** — **ACTIONS REQUIRED** A. Gravity Feed — A. Verify at least ONE BAM Tank Gravity Feed valve open: • 2CV-4920-1 • 2CV-4921-1 B. BAM pumps pump. — B. 1) Start at least ONE BAM 2) Open Emergency Borate valve (2CV-4916-2). 3) Verify Boric Acid Makeup Flow Control valve (2CV-4926) closed. C. RWT to Charging pumps — C. Open Charging Pump Suction Source From RWT valve (2CV-4950-2). **Examiner Note: Gravity Feed is the normal method used for a Circulating water pump trip.**
	ATC	2. Close VCT Outlet valve (2CV-4873-1). **Examiner Note: The VCT outlet valve will not close and ATC should perform step 3.**
	ATC	Recognize the VCT outlet valve does not close.
	ATC	3. IF VCT Outlet valve does NOT close, THEN verify BAM Pumps Emergency Boration flowpath selected.
	ATC	4. Verify Reactor Makeup Water Flow Control valve (2CV-4927) closed. 5. Verify at least ONE Charging pump running and charging header flow greater than 40 gpm. 6. Verify charging header flow greater than 40 gpm by either of the following: • 2FIS-4863 Disch Flow (2C09) • Computer Point F4863 (PDS, PMS or SPDS)

Op-Test No.: 2012-1	Scenario No.: 1	Event No.: 3 & 4
Event Description: 'A' Circulating Water pump trip. Also the VCT outlet valve fails to close.		
Cue: If contacted as the WCO, then report that 2CV-4873-1 motor is turning but the stem does not moving to be moving. **Cue: When contacted as the WWM, then report that a planner will begin planning work on 2P-3A.**		
	BOP	B. Reduce Turbine Load to maintain Condenser Pressure within acceptable region of Attachment A, Backpressure Limits.
	BOP	C. Maintain RCS Tc less than 554.7°F, refer to TS 3.2.6 Reactor Coolant System Cold Leg temperature.
	ATC	D. IF CEA insertion necessary to maintain Tc less than 554.7°F, THEN insert Group 6 or Group P CEAs using 2105.009 Exhibit 3 while maintaining CEAs in Acceptable region of COLR.
	ATC	E. WHEN Condenser Vacuum improving and maintained within Acceptable region of Attachment A, Backpressure Limits, THEN secure Emergency Boration.
Steps to secure Emergency Boration	ATC	NOTE Reactor Engineering assistance may be required to determine shutdown margin. 7. WHEN boron concentration greater than minimum required for shutdown margin, THEN perform the following: A. Verify VCT level ≥ 20%. B. Place VCT Outlet valve (2CV-4873-1) in AUTOMATIC. C. WHEN 2CV-4873-1 open, THEN perform the following: 1) Verify BOTH BAM pumps secured. 2) Verify the following valves closed: • 2CV-4920-1 • 2CV-4921-1 • 2CV-4916-2 3) IF 2CV-4950-2 was opened, THEN place handswitch in AUTOMATIC and check that valve closes.
	ATC	F. Commence a power reduction using 2102.004 power operations until condenser pressure is less than 5.15 inches HG Abs.
	SRO	*7. Check RCS pressure 2025 to 2275 psia.
	ANY	*8. Check RCS TC 542 to 554.7°F using CPC PID 5, 6, 160, or 161.

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

Op-Test No.: 2012-1	Scenario No.: 1	Event No.: 5
Event Description: 'A' Pressurizer Level Channel Fails Low. Tech Spec for SRO.		

Time	Position	Applicant's Actions or Behavior
Cued by examiner	ANY	Announce alarm 2K10-G6 CNTRL CH 1 LEVEL Lo and 2K10-F6 CNTRL CH 1 LEVEL LO LO. Report 2LI-4627-2 and 2LR-4625 indicate normal.
	SRO	Enter and implement AOP 2203.028, PZR Systems Malfunctions.
	SRO	7. Check the following PZR level annunciators clear: • "CNTRL CH 1/2 LEVEL LO" 2K10-G6/G7 (Annunciators not clear, implement contingency) • "CNTRL CH 1/2 LEVEL HI" 2K10-J6/J7
	ANY	7. Perform the following: A. Compare PZR level instruments to determine the affected channel.
	ATC	C. IF selected control channel failed, THEN perform the following: 1) Perform the following for Letdown Flow controller (2HIC-4817): a) Place controller in MANUAL. b) Adjust output to control PZR level within 5% of setpoint.
	ATC	2) Place PZR Level Channel Select switch (2HS-4628) to unaffected channel. **(Channel 2)**
	ATC	3) Place PZR Low Level Cutoff select switch (2HS-4642) to unaffected channel. **(Channel B)**
	ANY	4) Verify PZR heaters and Normal Spray operating to restore RCS pressure 2025 to 2275 psia.
	ATC	5) WHEN Letdown Flow controller (2HIC-4817) automatic AND manual signals match, THEN place Letdown Flow controller in AUTO.
	SRO	E. Refer to TS 3.3.3.5, Remote Shutdown Instrumentation and 3.3.3.6, Post-Accident Instrumentation. **Examiner Note: SRO must enter Tech Spec 3.3.3.6 action 1 for Post Accident Instrumentation.**
	SRO	Contact work management.
Cue: When contacted as the WWM, then report that I & C planner will begin planning work on failed level instrument.		
Termination Criteria: PZR level control selected to channel 2 or at lead examiner's discretion.		

Op-Test No.: 2012-1 Scenario No.: 1 Event No.: 6, 7 & 8

Event Description: 2A-1 bus negative sequence and lockout causing a reactor trip. Also, 2A-3 bus will lockout and the feeder breaker (2A-309) will remain closed. Loss of Offsite Power and 2P-7A EFW pump overspeed trips causing a complete loss of feedwater. 2P-89B High Pressure Safety Injection pump fails to start SIAS

Time	Position	Applicant's Actions or Behavior
Cued by examiner	ANY	Report 2A-1 bus negative sequence alarm.
	BOP/SRO	Refer to 2K-01 A7 Annunciator Corrective Action
	ANY	2.1 Check all three phase currents for EACH pump on 2A1: • A Phase to B Phase • A Phase to C Phase • B Phase to C Phase
	ANY	Report 2A-1 and 2A-3 bus lockout **Examiner note: The SRO may discuss Tech Spec 3.8.2.1**
Cue: If contacted as the IAO, then wait ~ 1 minute report the 2A-1 bus lockout relay is tripped and there is an acrid odor but no fire or smoke present. **Cue: If contacted as the IAO, then wait ~ 1 minute report the 2A-3 bus lockout relay is tripped and there is an acrid odor but no fire or smoke present.**		
	SRO	Direct tripping the reactor due to inability to maintain S/G levels
	SRO	Enter and implement EOP 2202.001, Standard Post Trip Actions.
	SRO	1. Notify Control Board Operators to monitor safety functions using Exhibit 7, CBO Reactor Trip Checklist. 2. Open Safety Function Tracking page.
Reactivity control safety function	ATC	3. Check Reactivity Control established as follows: A. Reactor power lowering. _____B. ALL CEAs fully inserted by observing ANY of the following: 1) CEA Rod bottom lights illuminated. 2) CEAC 1 indicates ALL CEAs fully inserted. 3) CEAC 2 indicates ALL CEAs fully inserted.
Vital Auxiliaries safety function	BOP	4. Check Maintenance of Vital Auxiliaries satisfied: A. Check Main Turbine tripped by BOTH of the following: • ALL Main Stop Valves closed. • Generator megawatts indicate zero. B. Generator Output breakers open. C. Exciter Field breaker open.

Op-Test No.: 2012-1 Scenario No.: 1 Event No.: 6, 7 & 8

Event Description: 2A-1 bus negative sequence and lockout causing a reactor trip. Also, 2A-3 bus will lockout and the feeder breaker (2A-309) will remain closed. Loss of Offsite Power and 2P-7A EFW pump overspeed trips causing a complete loss of feedwater. 2P-89B High Pressure Safety Injection pump fails to start SIAS

Time	Position	Applicant's Actions or Behavior
Vital Auxiliaries safety function	BOP	D. Check the following valves closed: • MSR 2E-12A Steam Supply From SG A (2CV-0400) **(Not met, perform contingency)** • MSR 2E-12B Steam Supply From SG B (2CV-0460) **(Not met, perform contingency)** Step D. contingency actions. D. Close MSIVs: • 2CV-1010-1 • 2CV-1060-2
Vital Auxiliaries safety function	BOP	E. At least ONE 6900v AC bus energized. **(Not met)** F. At least ONE 4160v Non-vital AC bus energized. **(Not met)** G. BOTH 4160v Vital AC buses energized. **(2A-4 Vital bus will be energized but 2A-3 will not be energized due to the feeder breaker failure.)** H. BOTH DGs secured. (**Both DGs will be running, Service water will be aligned to #2 EDG and after #1 EDG will not have service water aligned.)** **Examiner note: Service Water pressure low alarm will be in for #2 EDG the crew may elect to throttle service water to component cooling water or service water to auxiliary cooling water.** **Examiner note: The SRO may discuss Tech Spec 3.8.1.1 for offsite power sources.**
Critical Step: Secure #1 EDG prior to completion of the Drill.	BOP/SRO	Step H. contingency actions. H. IF ANY DG running AND SW NOT aligned, THEN locally stop DG by unlocking and placing "ENGINE CONTROL" handswitch in LOCKOUT: • 2E11 • 2E21 **Examiner note #1 EDG must be locally placed in Lockout.**
Cue: If contacted as the IAO to secure #1 EDG, then acknowledge the request and have the booth operator place #1 EDG in local lockout.		

Op-Test No.: 2012-1 Scenario No.: 1 Event No.: 6, 7 & 8

Event Description: 2A-1 bus negative sequence and lockout causing a reactor trip. Also, 2A-3 bus will lockout and the feeder breaker (2A-309) will remain closed. Loss of Offsite Power and 2P-7A EFW pump overspeed trips causing a complete loss of feedwater. 2P-89B High Pressure Safety Injection pump fails to start SIAS

Time	Position	Applicant's Actions or Behavior
Vital Auxiliaries safety function	BOP	I. At least ONE 125v Vital DC bus energized: • 2D01 - SPDS point E2D01 • 2D02 - SPDS point E2D02
RCS Inventory Control Safety function	ATC	5. Check RCS Inventory Control established as follows: A. PZR level: • 10 to 80%. • Trending to setpoint. B. RCS MTS 30°F or greater.
RCS Pressure Control Safety function	ATC	6. Check RCS Pressure Control: —— • 1800 to 2250 psia. —— • Trending to setpoint. • Normal PZR Spray and heaters controlling pressure. **(Not met, perform contingency)** • Valid CNTMT Spray NOT in progress.
	SRO	Direct the following actions as necessary: 6. Perform as necessary: D. IF RCP 2P32A or 2P32B stopped, THEN verify associated PZR Spray valve in MANUAL and closed. **(Should be performed, RCPs are secured.)** G. IF ALL RCPs stopped AND RCS pressure control required, THEN initiate Aux spray using 2202.010 Attachment 48, RCS Pressure Control.
Core Heat Removal safety function.	ATC	7. Check Core Heat Removal by forced circulation: A. At least ONE RCP running. **(RCPs will be secured due LOOP and CRS should perform the contingency)**
	SRO	Verify the contingency for step 7. A
	ATC	A. IF ALL RCPs stopped, THEN perform the following: 1) Verify BOTH PZR Spray valves in MANUAL and closed. 2) GO TO Step 8.

Op-Test No.: 2012-1 Scenario No.: 1 Event No.: 6, 7 & 8

Event Description: 2A-1 bus negative sequence and lockout causing a reactor trip. Also, 2A-3 bus will lockout and the feeder breaker (2A-309) will remain closed. Loss of Offsite Power and 2P-7A EFW pump overspeed trips causing a complete loss of feedwater. 2P-89B High Pressure Safety Injection pump fails to start SIAS

Time	Position	Applicant's Actions or Behavior
RCS Heat Removal Safety Function	ANY	8. Check RCS Heat Removal: A. Check SG available by BOTH of the following: • At least ONE SG level 10 to 90%. • FW maintaining SG level. **(Not met, perform contingency)** C. Check Feedwater line intact by the following: • SG level stable or rising. • NO unexplained step changes or erratic FW flow. • NO unexplained step changes or erratic Condensate flow. D. Check SG pressure 950 to 1050 psia. **(Not Met, perform Contingency)** F. Check RCS TC 540 to 555°F.
	ANY	Perform step 8 contingency actions that are applicable: A. Perform the following: 1) IF SG level lowering, THEN verify EFAS actuated. 5) IF FW NOT available, THEN perform the following: a) Verify maximum of ONE RCP running in each loop. b) Close SG Blowdown Isolation valves: • 2CV-1016-1 • 2CV-1066-1 c) GO TO Step 8.C **Examiner note: EFAS is actuated but does not function. SRO may discuss Tech Spec 3.0.3 for no EFW trains.**
Cue: If contacted as the WCO, report that 2P-7A has a governor valve body is cracked, and there is no oil in the turbine casing.		

Op-Test No.: 2012-1 Scenario No.: 1 Event No.: 6, 7 & 8

Event Description: 2A-1 bus negative sequence and lockout causing a reactor trip. Also, 2A-3 bus will lockout and the feeder breaker (2A-309) will remain closed. Loss of Offsite Power and 2P-7A EFW pump overspeed trips causing a complete loss of feedwater. 2P-89B High Pressure Safety Injection pump fails to start SIAS

Time	Position	Applicant's Actions or Behavior
RCS Heat Removal Safety Function	ANY	E. Perform as necessary: 2) Verify SDBCS restoring SG pressure 950 psia to 1050 psia using 2105.008 Exhibit 3, SDBCS Emergency Operation. 4) IF SG pressure greater than 1050 psia, THEN check MSSVs operating to control SG pressure 1050 psia to 1100 psia.
Containment Safety Function		9. Check CNTMT parameters: A. Temperature and Pressure: • Temperature less than 140°F. • Pressure less than 16 psia. B. Check CNTMT Spray pumps secured. C. NO CNTMT radiation alarms or unexplained rise in activity: 1) CAMS alarms: • "CNTMT PART/GAS RAD HI/LO" annunciator (2K10-B6) clear. 2) RCS leakage alarms: • "AREA RADIATION HI/LO" annunciator (2K11-B10) clear. • "PROC LIQUID RADIATION HI/LO" annunciator (2K11-C10) clear. 3) Check the following radiation monitors trend stable: • CNTMT Area • CAMS • Process Liquid D. NO secondary system radiation alarms or unexplained rise in activity: 1) "SEC SYS RADIATION HI" annunciator (2K11-A10) clear. 2) Secondary Systems Radiation monitors trend stable: • Main Steam lines • SG Sample • Condenser Off Gas

Op-Test No.: 2012-1 Scenario No.: 1 Event No.: 6, 7 & 8

Event Description: 2A-1 bus negative sequence and lockout causing a reactor trip. Also, 2A-3 bus will lockout and the feeder breaker (2A-309) will remain closed. Loss of Offsite Power and 2P-7A EFW pump overspeed trips causing a complete loss of feedwater. 2P-89B High Pressure Safety Injection pump fails to start SIAS

Time	Position	Applicant's Actions or Behavior
	SRO	10. Notify STA to report to control room. 11. Direct NLOs to perform 2202.010 Attachment 47, Field Operator Post Trip Actions. 12. Verify Reactor trip announced on Plant page. 13. Notify SM to refer to Technical Specifications and 1903.010, Emergency Action Level Classification.
Cue: If contacted as the STA to report to the control room, acknowledge the request. Cue: If contacted as a NLO to perform Attachment 47 Field Operator Post Trip Actions, acknowledge request.		
	SRO	14. Direct control board operators to acknowledge ALL annunciators and announce ALL critical alarms.
	SRO	15. Check ALL safety function acceptance criteria satisfied. **(All safety functions are not satisfied, perform contingency)** 15. IF ANY safety function acceptance criteria NOT satisfied, THEN perform the following: A. Notify control room staff of safety functions NOT satisfied. B. GO TO Exhibit 8, Diagnostic Actions.
	SRO	Diagnose Loss of Feedwater EOP 2202.006.
	SRO	Enter and implement Loss of Feedwater EOP 2202.006.
	SRO	Direct STA to perform the following: *1. Confirm diagnosis of Loss Of Feedwater by checking SFSC acceptance criteria satisfied every 15 minutes.
	SRO	*2. Notify SM to refer to Technical Specifications and 1903.010, Emergency Action Level Classification.
	SRO	3. Open Placekeeping page.
	SRO	4. Notify Control Board Operators to monitor floating steps.
	ATC	5. Reduce RCS heat input as follows: A. Stop ALL RCPs. B. Verify BOTH PZR Spray valves in MANUAL and closed. **Examiner note: These actions should already be complete.**

Op-Test No.: 2012-1 Scenario No.: 1 Event No.: 6, 7 & 8

Event Description: 2A-1 bus negative sequence and lockout causing a reactor trip. Also, 2A-3 bus will lockout and the feeder breaker (2A-309) will remain closed. Loss of Offsite Power and 2P-7A EFW pump overspeed trips causing a complete loss of feedwater. 2P-89B High Pressure Safety Injection pump fails to start SIAS

Time	Position	Applicant's Actions or Behavior
	BOP	6. Conserve SG inventory as follows: A. Verify SG Blowdown Isolation valves closed: • 2CV-1016-1 • 2CV-1066-1 B. Verify SG Sample valves closed. • 2CV-5850 • 2CV-5858 • 2CV-5852-2 • 2CV-5859-2
	BOP	■ 7. Check ALL AC and Vital DC buses energized. **Examiner note: not all buses are energized the SRO should go to the contingency.**
	BOP/SRO	■ 7. Perform the following: A. IF BOTH 4160v Non-vital buses 2A1 and 2A2 NOT energized from offsite power, THEN verify MSIVs closed. B. IF ANY AC bus de-energized, THEN commence power restoration using 2202.010 Attachment 11, Degraded Power. C. IF ANY Vital DC bus de-energized, THEN commence power restoration using 2203.037, Loss of 125v DC. **Examiner note: The SRO should review attachment 11 but power can not be restored.**
Critical Task: Maintain RCS pressure within PT limit 30 to 200 degrees MTS.	ATC	*8. Maintain RCS pressure 1800 psia to 2250 psia using 2202.010 Attachment 48, RCS Pressure Control. **Examiner note: RCS pressure must be maintain within the PT limits 30 to 200 degrees Margin To Sat. (MTS) and less than 2500 PSIA until once through cooling is established.**

Op-Test No.: 2012-1 Scenario No.: 1 Event No.: 6, 7 & 8

Event Description: 2A-1 bus negative sequence and lockout causing a reactor trip. Also, 2A-3 bus will lockout and the feeder breaker (2A-309) will remain closed. Loss of Offsite Power and 2P-7A EFW pump overspeed trips causing a complete loss of feedwater. 2P-89B High Pressure Safety Injection pump fails to start SIAS

Time	Position	Applicant's Actions or Behavior
	SRO	The SRO should direct the following action to be completed. 9. Locally remove danger tags and close the following breakers: • 2B51-E4 "LTOP RELIEF ISOL 2CV-4730-1" • 2B51-K2 "LTOP RELIEF ISOL 2CV-4741-1" **Examiner note: Closing the above breaker will not energize the valves because 2B51 is de-energized from the 2A-3 lockout.**
Cue: When contacted as a NLO to close the LTOP relief isol valves, after 2 min have the booth operator close the LTOP breakers, then report the 2B51-E4, and 2B51-K2 are closed.		
	SRO	11. IF EFW Pump 2P7B available, THEN establish EFW flow to SGs from 2P7B as follows: **Examiner note: 2P-7B is not available due to the 2A-3 lockout.**
Cue: If contacted as a NLO to assess 2A-309, report that 2A-309 is closed and the breaker has been damaged. **Cue: If requested as a NLO to locally operate 2A-309, report that it will not open and can not be racked down.**		
	SRO	11. GO TO Step 12.
	SRO	12. IF EFW Pump 2P7A available, THEN establish EFW flow to SGs from 2P7A as follows: **Examiner note: 2P-7B is not available due to the 2A-3 lockout.**
	SRO	12. GO TO Step 13.
	SRO	13. IF AFW Pump 2P75 available, THEN establish AFW flow to SGs from 2P75 as follows: **Examiner note: 2P-75 is not available due to the 2A-1 lockout.**
	SRO	13. IF AFW Pump 2P75 unavailable, THEN perform EITHER of the following: • GO TO Step 13.A if unavailability is due to electrical power supply. OR • GO TO Step 14. **Examiner note: The SRO should go to step 14 due to the 2A-1 bus lockout Step 13.A will not restore power during a lockout.**

Op-Test No.: 2012-1 Scenario No.: 1 Event No.: 6, 7 & 8

Event Description: 2A-1 bus negative sequence and lockout causing a reactor trip. Also, 2A-3 bus will lockout and the feeder breaker (2A-309) will remain closed. Loss of Offsite Power and 2P-7A EFW pump overspeed trips causing a complete loss of feedwater. 2P-89B High Pressure Safety Injection pump fails to start SIAS

Time	Position	Applicant's Actions or Behavior
	ANY	■14. Check IA pressure greater than 65 psig. **(Not met, perform contingency)**
	ANY	■14. IF IA NOT available, THEN perform the following: A. Inform Unit 1 of IA cross-connect status. C. IF Unit 1 IA pressure lowers to less than 60 psig, THEN perform the following: 1) Close IA Cross-Connect valves. • 2CV-3004 • 2CV-3015 2) Locally verify the following valves closed: • MANUAL X-CONNECT TO UNIT 1 (2IA-47) • MANUAL X-CONNECT TO UNIT 1 (2IA-48) • 2F-37 INLET FROM DRY HDR (2IA-192)
	ANY	15. Check MSIVs open. **(Not met, perform contingency)**
	ANY	15. Perform the following: A. IF MSIS actuated, THEN reset MSIS using 2202.010 Attachment 14,MSIS Reset **(MSIS is not actuated)** B. IF CSAS actuated, THEN reset CSAS using 2202.010 Attachment 45, CSAS Reset. **(CSAS is not actuated)** C. IF MSIS AND CSAS can NOT be reset, THEN GO TO Step 16. D. Open MSIV Bypass valves. E. WHEN SG and Main Steam pressure equalize within 50 psi, THEN open MSIVs. **Examiner note: The MSIVs can not be opened due to the LOOP and crew should not attempt to open them.**
	ANY	16. Check at least ONE Condensate pump running. **(Not met, perform contingency)**

Op-Test No.: 2012-1 Scenario No.: 1 Event No.: 6, 7 & 8

Event Description: 2A-1 bus negative sequence and lockout causing a reactor trip. Also, 2A-3 bus will lockout and the feeder breaker (2A-309) will remain closed. Loss of Offsite Power and 2P-7A EFW pump overspeed trips causing a complete loss of feedwater. 2P-89B High Pressure Safety Injection pump fails to start SIAS

Time	Position	Applicant's Actions or Behavior
	ANY	16. Manually start ONE Condensate pump as follows: **Examiner note: Condensate pumps are not available for start due to a loss power.**
	ANY	17. Establish MFW flow to SGs as follows: **Examiner note: Main Feedwater can not be restored to the SG.**
	ANY	18. Establish Condensate flow to SGs as follows: **Examiner note: Condensate can not be restored to the SG.**
	SRO	■19. IF level lowers to 70 inches in a SG AND feedwater NOT restored to EITHER SG, THEN perform the following: A. Isolate SG using 2202.010 Attachment 10, SG Isolation. B. Maintain isolated SG pressure 950 psia to 1050 psia using upstream ADV or upstream ADV isolation MOV. C. Continue efforts to restore feed to at least one SG.
	SRO	■20. IF EITHER of the following conditions exist: • BOTH SGs with level less than 70 inches. • RCS TC rising in an uncontrolled manner. THEN establish Heat Removal via Once Through Cooling as follows:
	ANY	A. Close MSIVs from Control Room. **Examiner note: MSIVs are already closed**
	BOP/ATC	B. Manually actuate SIAS and CCAS.
	BOP	C. Verify ALL HPSI Cold Leg Injection MOVs open.
	ATC	D. Verify ALL available Charging pumps running.
	ANY	E. Check 4160v Vital buses 2A3 AND 2A4 energized from offsite power. **(Not met, perform contingency)**

Op-Test No.: 2012-1 Scenario No.: 1 Event No.: 6, 7 & 8

Event Description: 2A-1 bus negative sequence and lockout causing a reactor trip. Also, 2A-3 bus will lockout and the feeder breaker (2A-309) will remain closed. Loss of Offsite Power and 2P-7A EFW pump overspeed trips causing a complete loss of feedwater. 2P-89B High Pressure Safety Injection pump fails to start SIAS

Time	Position	Applicant's Actions or Behavior
	BOP	E. Perform the following: 1) IF EITHER 4160v Vital bus energized from offsite power, THEN perform the following: **(Not met)** a) Commence aligning third HPSI pump to associated bus. b) WHEN third HPSI pump alignment complete, THEN verify third HPSI pump running. 2) IF ANY 4160v Vital bus energized from DG, THEN perform the following: a) Verify ONE HPSI pump running on train supplied by DG. **(Not met, BOP should start 2P-89C or 2P-89B)** b) GO TO Step 20.G. **Examiner note: The SRO may discuss Tech Spec 3.5.2 for HPSI.**
Critical Step: Establish Once Through cooling prior to S/G dry out with one HPSI pump running	BOP/ATC	*G. Verify at least ONE HPSI pump running. H. Open ECCS PZR Vent valve (2CV-4698-1). I. Open LTOP/ECCS Relief Isolation valve (2CV-4740-2).
	ANY	J. Maintain BOTH SG pressures 950 psia to 1050 psia using upstream ADVs or upstream ADV isolation MOVs.
	ANY	K. GO TO 2202.009, Functional Recovery.
	SRO	2. Record present time: • Time _____.
	SRO	* 3. Notify SM to refer to Technical Specifications and 1903.010, Emergency Action Level Classification.

Op-Test No.: 2012-1 Scenario No.: 1 Event No.: 6, 7 & 8

Event Description: 2A-1 bus negative sequence and lockout causing a reactor trip. Also, 2A-3 bus will lockout and the feeder breaker (2A-309) will remain closed. Loss of Offsite Power and 2P-7A EFW pump overspeed trips causing a complete loss of feedwater. 2P-89B High Pressure Safety Injection pump fails to start SIAS

Time	Position	Applicant's Actions or Behavior
	ANY	* 4. Check RCS pressure greater than 1400 psia.
	ANY	These actions have already been performed. * 4. Perform the following: B. IF NPSH requirements violated OR RCS MTS less than 30°F, THEN perform the following: 1) Stop ALL RCPs. 2) Verify BOTH PZR Spray valves in MANUAL and closed. 3) GO TO Step 6.
	ANY	* 6. IF SIAS or MSIS actuated, THEN perform the following: A. Verify at least ONE SW pump running on EACH loop. **(Only one SW pump will be running)**
	ANY	B. Check EITHER DG running.
	ANY	C. Verify running DG SW Outlet valve open: • 2CV-1503-1 • 2CV-1504-2
	ANY	D. Verify SW pump suction aligned to Lake.
	ANY	E. Check 4160v Non-vital bus 2A1 OR 2A2 energized from offsite power. **(Not met, perform contingency)**
	ANY	E. GO TO Step 7.

Op-Test No.: 2012-1 Scenario No.: 1 Event No.: 6, 7 & 8

Event Description: 2A-1 bus negative sequence and lockout causing a reactor trip. Also, 2A-3 bus will lockout and the feeder breaker (2A-309) will remain closed. Loss of Offsite Power and 2P-7A EFW pump overspeed trips causing a complete loss of feedwater. 2P-89B High Pressure Safety Injection pump fails to start SIAS

Time	Position	Applicant's Actions or Behavior
	ANY	7. IF CCW in service to provide SG Sample Cooler cooling, THEN perform the following: A. IF SG "A" has indicated water level, THEN verify the following SG 'A' Sample Valves open: • 2CV-5850 • 2CV-5852-2 B. IF SG "B" has indicated water level, THEN verify the following SG 'B' Sample Valves open: • 2CV-5858 • 2CV-5859-2 C. Notify Chemistry to sample available SGs for activity. **Examiner note: Neither S/G has water level that should be sampled and CCW is not in service.**
	ANY	8. Check ALL available Hydrogen Analyzers in service; refer to 2104.044, Containment Hydrogen Control Operations – Exhibit 1, Hydrogen Analyzer Auto Start. **(perform contingency)**
	ANY	8. Verify all available Hydrogen Analyzers in service within 70 minutes from start of event. • Record time from Entry Section step 2: Time_____ **Examiner note: This step may not be performed due to 70 minute allowance for start.**
	ANY	9. Open Functional Recovery Success Path Tracking page.
	SRO	10. Notify Control Board Operators to perform the following: A. Monitor floating steps. B. Verify actuated ESFAS components using 2202.010 Exhibit 9, ESFAS Actuation.

Op-Test No.: 2012-1 Scenario No.: 1 Event No.: 6, 7 & 8

Event Description: 2A-1 bus negative sequence and lockout causing a reactor trip. Also, 2A-3 bus will lockout and the feeder breaker (2A-309) will remain closed. Loss of Offsite Power and 2P-7A EFW pump overspeed trips causing a complete loss of feedwater. 2P-89B High Pressure Safety Injection pump fails to start SIAS

Time	Position	Applicant's Actions or Behavior
Exhibit 9 ESFAS actuation.	BOP	*1.0 IF any abnormalities noted for affected ESFAS actuation, THEN notify CRS. 2.0 IF SIAS, THEN verify the following: ☐ Red Train RWT Outlet (2CV-5630-1) open. ☐ Red Train HPSI Pump in service with proper discharge pressure and flow. ☐ Red Train HPSI Injection MOVs open. ☐ Red Train Service Water Pump in service with proper discharge pressure. ☐ Red Train LPSI Pump (2P60A) in service with proper discharge pressure and flow. ☐ Red Train LPSI Injection MOVs open. ☐ Green Train RWT Outlet (2CV-5631-2) open. ☐ Green Train HPSI Pump in service with proper discharge pressure and flow. ☐ Green Train HPSI Injection MOVs open. ☐ Green Train Service Water Pump in service with proper discharge pressure. ☐ Green Train LPSI Pump (2P60B) in service with proper discharge pressure and flow. ☐ Green Train LPSI Injection MOVs open. ☐ Available Charging Pumps in service with proper discharge pressure and flow. ☐ Service Water Outlet Valves open for #1 and #2 EDGs. 3.0 IF CCAS, THEN verify the following: ☐ Red Train CNTMT Coolers in service. ☐ Service Water aligned to Red Train CNTMT Coolers. ☐ Red Train Bypass Dampers open. ☐ Green Train CNTMT Coolers in service. ☐ Service Water aligned to Green Train CNTMT Coolers. ☐ Green Train Bypass Dampers open.

Op-Test No.: 2012-1 Scenario No.: 1 Event No.: 6, 7 & 8

Event Description: 2A-1 bus negative sequence and lockout causing a reactor trip. Also, 2A-3 bus will lockout and the feeder breaker (2A-309) will remain closed. Loss of Offsite Power and 2P-7A EFW pump overspeed trips causing a complete loss of feedwater. 2P-89B High Pressure Safety Injection pump fails to start SIAS

Time	Position	Applicant's Actions or Behavior
Exhibit 9 ESFAS actuation.	BOP	4.0 IF CSAS, THEN verify the following: ☐ Red Train CSS Pump (2P35A) in service with proper discharge pressure and flow. ☐ Red Train CSS Header Isolation (2CV-5612-1) open. ☐ Green Train CSS Pump (2P35B) in service with proper discharge pressure and flow. ☐ Green Train CSS Header Isolation (2CV-5613-2) open. ☐ Main Feedwater Block valves closed. ☐ MSIVs closed. ☐ Main Feed pumps tripped. ☐ Condensate pumps secured. ☐ Heater Drain pumps secured. 5.0 IF MSIS, THEN verify the following: ☐ MSIVs closed. ☐ Main Feedwater Block valves closed. ☐ Red Train Service Water Pump in service with proper discharge pressure. ☐ Green Train Service Water Pump in service with proper discharge pressure. ☐ Main Feed pumps tripped. ☐ Condensate pumps secured. ☐ Heater Drain pumps secured.
	ANY	11. Determine safety function status as follows: A. Check Reactivity Control satisfied by EITHER of the following: • Maximum of ONE CEA NOT fully inserted and Reactor power lowering. • Reactor power less than 10-1% and stable or lowering. **Examiners note: Reactivity will be satisfied.**

Op-Test No.: 2012-1 Scenario No.: 1 Event No.: 6, 7 & 8

Event Description: 2A-1 bus negative sequence and lockout causing a reactor trip. Also, 2A-3 bus will lockout and the feeder breaker (2A-309) will remain closed. Loss of Offsite Power and 2P-7A EFW pump overspeed trips causing a complete loss of feedwater. 2P-89B High Pressure Safety Injection pump fails to start SIAS

Time	Position	Applicant's Actions or Behavior
	ANY	B. Check Vital DC Auxiliaries satisfied: 1) At least ONE 125v Vital DC bus energized: • 2D01-SPDS point E2D01 • 2D02-SPDS point E2D02 2) At least ONE 120v Vital AC bus energized: • 2RS1 - SPDS point E2RS1 or E2RS1RS3 • 2RS2 - SPDS point E2RS2 or E2RS2RS4 • 2RS3 - SPDS point E2RS3 or E2RS1RS3 • 2RS4 - SPDS point E2RS4 or E2RS2RS4 **Examiners note: Vital DC will be satisfied.**
	ANY	C. Check Vital AC Auxiliaries satisfied: 1) At least ONE 4160v Vital AC bus (2A3/2A4) energized. **Examiners note: Vital AC will be satisfied.**
	ANY	D. Check RCS Inventory Control satisfied: 1) CVCS maintaining PZR level 10 to 80% [40 to 70%] and level stable or trending to setpoint. 2) RCS MTS 30°F or greater. 3) RVLMS LVL 03 or higher elevation indicates WET. **Examiners note: Inventory Control will not be satisfied due to MTS.**
	ANY	E. Check RCS Pressure Control satisfied: 1) RCS pressure maintained within P-T limits, refer to Attachment 1, P-T Limits. **Examiners note: P-T limits will not be satisfied.**

Op-Test No.: 2012-1 Scenario No.: 1 Event No.: 6, 7 & 8

Event Description: 2A-1 bus negative sequence and lockout causing a reactor trip. Also, 2A-3 bus will lockout and the feeder breaker (2A-309) will remain closed. Loss of Offsite Power and 2P-7A EFW pump overspeed trips causing a complete loss of feedwater. 2P-89B High Pressure Safety Injection pump fails to start SIAS

Time	Position	Applicant's Actions or Behavior
	ANY	F. Check RCS and Core Heat Removal satisfied: 1) At least ONE intact SG available for Heat Removal by EITHER of the following: • Level 10 to 90% [20 to 90%] with FW available. • Level being restored with total FW flow of 485 gpm or greater. 2) IF ANY RCP operating, THEN RCS ΔT less than 10°F and NOT rising. 3) IF ALL RCPs secured, THEN RCS ΔT less than 50°F and NOT rising. 4) RCS T_C less than 555°F and NOT rising. 5) RCS MTS 30°F or greater. 6) RVLMS LVL 01 indicates WET. **Examiners note: RCS and Core Heat Removal will not be satisfied due to feedwater availability.**
	ANY	G. Check CNTMT Isolation satisfied: 1) CNTMT parameters normal: a) "CNTMT RADIATION HI" annunciator (2K10-A6) clear. b) NO unexplained rise in CNTMT radiation. c) CNTMT pressure less than 18.3 psia. **(Not met, perform contingencies)** 2) "SEC SYS RADIATION HI" annunciator (2K11-A10) clear. 3) NO unexplained rise in Secondary Systems Radiation monitor trends: • Main Steam lines • SG Sample • Condenser Off Gas **Examiners note: CNTMT Isolation will not be satisfied due to once through cooling.**

Op-Test No.: 2012-1 Scenario No.: 1 Event No.: 6, 7 & 8

Event Description: 2A-1 bus negative sequence and lockout causing a reactor trip. Also, 2A-3 bus will lockout and the feeder breaker (2A-309) will remain closed. Loss of Offsite Power and 2P-7A EFW pump overspeed trips causing a complete loss of feedwater. 2P-89B High Pressure Safety Injection pump fails to start SIAS

Time	Position	Applicant's Actions or Behavior
	ANY	1) Verify CNTMT isolation as follows: • CIAS actuated components are properly aligned, using 2202.010 Attachment 5, CIAS Verification. • ONE Emergency Penetration Room Vent fan running. • EACH penetration NOT required to be open has at least ONE isolation valve closed.

Standard Attachment 5

ANY

COMPONENT DESCRIPTION	1.0 NUMBER	2.0 LOCATION	3.0 POSITION	√
REGEN HX INLET	2CV-4821-1	2C09	CLOSED	
REGEN HX OUTLET	2CV-4823-2	2C09	CLOSED	
CNTMT PURGE SUPPLY V1 INSIDE	2CV-8289-1	2C17	CLOSED	
CNTMT PURGE SUPPLY V1 OUTSIDE OUTSIDE	2CV-8283-1	2C17	CLOSED	
CNTMT PURGE EXHAUST V2 INSIDE	2CV-8291-1	2C17	CLOSED	
CNTMT PURGE EXHAUST V2 OUTSIDE OUTSIDE	2CV-8285-1	2C17	CLOSED	
SAMPLE ISOLATION VALVE QUENCH TANK LIQ	2SV-5878-1	2C17	CLOSED	
SAMPLE ISOLATION VALVE RCS	2SV-5833-1*	2C17	CLOSED	
RCP CCW SUPPLY	2CV-5236-1*	2C17	CLOSED	
RCP CCW RETURN	2CV-5255-1*	2C17	CLOSED	
CNTMT CHILL WATER SUPPLY	2CV-3852-1	2C17	CLOSED	
CNTMT CHILL WATER RETURN	2CV-3851-1	2C17	CLOSED	
RX DRAIN TANK DISCH ISOL	2CV-2202-1	2C17	CLOSED	
CNTMT VENT HEADER ISOL	2CV-2401-1	2C17	CLOSED (1)	
CNTMT SUMP DRAIN	2CV-2060-1	2C17	CLOSED	
RCP BLEEDOFF TO VCT	2CV-4846-1	2C17	CLOSED	
CNTMT AIR SAMPLE NORTH INSIDE SUPPLY	2SV-8265-1*	2C17	CLOSED	
CNTMT AIR SAMPLE NORTH INSIDE RETURN	2SV-8259-1*	2C17	CLOSED	
CNTMT AIR SAMPLE SOUTH INSIDE SUPPLY	2SV-8273-1*	2C17	CLOSED	
CNTMT AIR SAMPLE SOUTH INSIDE RETURN	2CV-8233-1*	2C17	CLOSED	
PASS SUMP SAMPLE SUPPLY ISOL	2SV-5634-1*	2C17	CLOSED	
PASS SUMP SAMPLE RETURN ISOL	2SV-5633-1*	2C17	CLOSED	

Op-Test No.: 2012-1 Scenario No.: 1 Event No.: 6, 7 & 8

Event Description: 2A-1 bus negative sequence and lockout causing a reactor trip. Also, 2A-3 bus will lockout and the feeder breaker (2A-309) will remain closed. Loss of Offsite Power and 2P-7A EFW pump overspeed trips causing a complete loss of feedwater. 2P-89B High Pressure Safety Injection pump fails to start SIAS

Time	Position	Applicant's Actions or Behavior
	ANY	H. Check CNTMT Temperature and Pressure Control satisfied: 1) CNTMT pressure less than 16 psia. 2) CNTMT temperature less than 140°F. **Examiners note: CNTMT Temperature and Pressure Control may not be satisfied due to once through cooling.**
	ANY	12. Locally remove danger tags and close the following breakers. • 2B51-E4 "LTOP RELIEF ISOL 2CV-4730-1" • 2B51-K2 "LTOP RELIEF ISOL 2CV-4741-1"
	ANY	*13. Check ALL Safety Function acceptance criteria satisfied.
	SRO	*13. Perform the following: A. Determine appropriate success paths using Success Path Decision Trees. B. Initiate success paths for ALL Safety Functions in the following order: 1) Jeopardized. 2) Challenged. 3) Satisfied. C. IF higher priority Safety Function jeopardized AND lower priority safety function success path in progress, THEN **GO TO** appropriate success path for highest priority safety function in jeopardy. D. WHEN success path implemented for EACH Safety Function, THEN RETURN TO Step 14 of Entry procedure.
Examiner Note: The SRO should complete the safety functions in order of hierarchy that are challenged first, and then the satisfied safety functions.		
	SRO	Diagnose IC-2 as the first Jeopardized Success path.
	ANY	1. Verify SIAS and CCAS actuated on PPS inserts.

Op-Test No.: 2012-1 Scenario No.: 1 Event No.: 6, 7 & 8

Event Description: 2A-1 bus negative sequence and lockout causing a reactor trip. Also, 2A-3 bus will lockout and the feeder breaker (2A-309) will remain closed. Loss of Offsite Power and 2P-7A EFW pump overspeed trips causing a complete loss of feedwater. 2P-89B High Pressure Safety Injection pump fails to start SIAS

Time	Position	Applicant's Actions or Behavior
	ANY	*2. Verify Safety Injection flow to RCS as follows: A. Verify at least ONE HPSI pump running. B. Verify running HPSI Injection MOVs open. C. Verify ALL available Charging pumps running. D. Check RCS pressure less than 1390 psia. E. Check total HPSI flow acceptable using 2202.010 Exhibit 2, HPSI Flow Curve. F. Check total LPSI flow acceptable using 2202.010 Exhibit 3, LPSI Flow Curve.
	ANY	*3. IF CNTMT Spray pumps are running AND ALL of the following are TRUE: • CNTMT pressure less than 73.7 psia (59 psig). • At least two CNTMT Cooling Fans running. • SIAS actuated and flow acceptable per the following: - 2202.010 Exhibit 2, HPSI Flow Curve - 2202.010 Exhibit 3, LPSI Flow Curve THEN perform the following: A. Place EITHER CNTMT Spray pump (2P35A/B) in PTL. B. Verify CNTMT pressure maintained less than 73.7 psia (59 psig).

Termination criteria: When the appropriate success path identified and HPSI flow is verified using exhibit 2 or at examiner's discretion.

Facility: ANO-2	Scenario No.: 2 (New)	Op-Test No.: 2012-1

Examiners:	Operators:

Initial Conditions:
100% MOL; All Engineered Safety Features systems are in standby. #3 and #4 MTG control valve steam lead valves failed closed. 'B' SIT level is high due to inleakage. Voltage regulator auto tracking circuit is disabled. RED Train Maintenance Week.

Turnover:
100%. 260 EFPD. EOOS indicates 'Minimal Risk'. #3 and #4 MTG control valve steam lead valves failed closed. Voltage regulator auto tracking circuit is disabled. RED Train Maintenance Week. Evolution scheduled: Drain of 'B' Safety Injection Tank to clear the High pressure alarm. OPS-B37 log is not required.

Event No.	Malf. No.	Event Type*	Event Description
1		N (BOP) N (SRO)	Drain 'B' Safety Injection Tank.
2	XRC2PT46241		'A' channel wide range pressurizer pressure will fail low. Tech Spec for SRO.
3	SDS0303DEM DI_HS_0303_1 DI_HS_0303_2	C(BOP) C(SRO)	2CV-0303 Turbine bypass demand fails high.
4	SCRUNBACK	R (ATC) C (SRO)	Partial Stator water runback. Tech Spec for SRO.
5	RCP2P32BGRN	M (ALL)	'B' Reactor Coolant Pump (RCP) trip.
6	RPSRXAUTO	C (ATC) C (SRO)	Reactor Protection System auto trip failure.
7	MS1003	M (ALL)	Main Steam Safety valve setpoint drifts causing an ESD.
8	ESF1025 CV1038 MFWPMPBTRP	C (BOP) C (SRO)	EFW valve 2CV-1025-1 fails to auto close, and 2EFW-1038-2 failed open. 'B' Main feedwater pump trips to allow Steam Generator level to lower for Auto EFW actuation.
9	CV4651	C (ATC) C (SRO)	'A' RCP spray valve failed closed. (Not credited as malfunction after EOP entry due to possibly being discovered prior to EOP entry)

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

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

Scenario #2 Objectives

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

SCENARIO #2 NARRATIVE

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

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

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

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

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

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

SCENARIO #2 NARRATIVE (continued)

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

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

Simulator Instructions for Scenario 2

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

Ensure that AACG is secured and annunciators clear.

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

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

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

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

T5 = Reactor Trip

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

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

Op-Test No.: 2012-1 Scenario No.: 2 Event No.: 1

Event Description: Drain 'B' Safety Injection Tank.

Time	Position	Applicant's Actions or Behavior
	BOP	7.1 Draining SITs to RDT in Mode 1, 2, 3, or 4 with SIT Outlet valves Open 7.1.1 IF source of SIT inleakage unknown, THEN initiate SIT Level Change (OPS-B37) as desired.
	BOP	7.1.2 IF OPS-B37 being maintained for SIT to be drained, THEN record pre-drain level on OPS-B37. **Examiner note: Steps 7.1.1 and 7.1.2 are not applicable.**
	BOP	*7.1.3 Monitor all RDT AND SIT levels and pressures during this operation.
	BOP	7.1.4 Open SIT Drain to RDT (2CV-5081).
	BOP	7.1.5 IF desired level drop < 1/2%, THEN close 2CV-5081.
	BOP	*7.1.6 Monitor pressure of SIT Injection header to be drained: • SIS Injection to Loop 2P-32A (2PIS-5000) • SIS Injection to Loop 2P-32B (2PIS-5020) • SIS Injection to Loop 2P-32C (2PIS-5040) • SIS Injection to Loop 2P-32D (2PIS-5060)
	BOP	7.1.8 Open desired SIT Drain valve: • 2T-2A - SIT A Drain valve (2SV-5001-1) • 2T-2B - SIT B Drain valve (2SV-5021-1) • 2T-2C - SIT C Drain valve (2SV-5041-2) • 2T-2D - SIT D Drain valve (2SV-5061-2)
Procedure Note: If SIT drain header pressurized, then SIT Drain valves may be slow to close due to no DP. (CR-ANO-2-2004-0802)		
	BOP	7.1.9 WHEN desired SIT level or pressure reached, THEN close SIT Drain valve opened: • 2T-2A - SIT A Drain valve (2SV-5001-1) • 2T-2B - SIT B Drain valve (2SV-5021-1) • 2T-2C - SIT C Drain valve (2SV-5041-2) • 2T-2D - SIT D Drain valve (2SV-5061-2)
	BOP	7.1.12 Verify 2CV-5081 closed.
Termination criteria: SIT Hi pressure alarm clear or at lead examiner's discretion.		

Op-Test No.: 2012-1	Scenario No.: 2	Event No.: 2
Event Description: 'A' channel wide range pressurizer pressure will fail low. Tech Spec for SRO.		

Time	Position	Applicant's Actions or Behavior
Cued by lead examiner	ANY	Announce annunciators: 2K04-A4 CH A RPS/ESF/PRETRIP/TRIP 2K04-B3 PPS Channel TRIP
	ANY	Report low pressurizer pressure pretrip/trip on PPS insert.
	BOP	Compare all four channels and report 2PT-4624-1 indicates zero.
	SRO	Implement Annunciator Corrective Action 2203.012D. 2K04-A4 CH A RPS/ESF/PRETRIP/TRIP applicable actions: 2.1 Refer to PPS insert on 2C03 to determine cause. 2.2 Compare all Channels to validate alarm. 2.6 IF channel failed, THEN refer to Tech Specs 3.3.1.1, 3.3.2.1, 3.3.3.5, 3.3.3.6, and TRM 3.3.1.1. 2K04-B3 PPS Channel TRIP applicable actions: 2.1 Determine which RPS or ESFAS trips have occurred on PPS inserts. 2.3 IF channel failed, THEN refer to Tech Specs 3.3.1.1 and 3.3.2.1 and TRM 3.3.1.1.
	SRO	Enter Tech Spec **3.3.1.1 action 2, 3.3.2.1 action 10, 3.3.3.5 and 3.3.3.6 action 1.**
	SRO	Direct BOP to bypass bistable points for the associated functional units: A Pressurizer pressure low (Bistable 6)

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

Op-Test No.: 2012-1	Scenario No.: 2	Event No.: 3
Event Description: 2CV-0303 Turbine bypass demand fails high.		

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

	SRO	5. Check the following criteria satisfied: A. Steam leak NOT indicated in CNTMT Building. B. Steam leak NOT indicated in Auxiliary or Turbine Building. C. Main Turbine Control Valves properly positioned for present power level. D. All SDBCS Valves closed. **(Not met, perform contingency)** E. FWCS maintaining SG levels at setpoint. F. MSSV Valve Open (2K04-G9) NOT in alarm. G. Gland Seal System pressure 1.5 to 7.0 psig.
	SRO	D. GO TO Step 9.
	BOP	9. IF any SDBCS valve affected, THEN close affected SDBCS valves using the following as necessary: • Place individual HIC in manual AND close the affected SDBCS valve. • Place individual permissive handswitch for affected SDBCS valve in OFF. **Examiner note: The BOP will have to place the HIC in manual and close the affected SDBCS valve.**
	ATC	13. Check PZR level greater than 29% AND trending to setpoint.
	ATC	14. Check RCS pressure 2025 psia to 2275 psia.
	ANY	15. Check RCS TC 542 to 554.7°F using CPC PID 5, 6, 160, or 161.
	BOP	16. IF cause of overcooling event stopped, THEN GO TO 2102.004, Power Operations, as necessary for power adjustment.
	SRO	Contact Work Week Manager to investigate/ repair Steam bypass valve 2CV-0303.
Cue: When contacted as the WWM, then report that I&C maintenance will investigate 2CV-0303.		
Termination criteria: When 2CV-0303 has been closed or at lead examiner's discretion.		

Op-Test No.: 2012-1	Scenario No.: 2	Event No.: 4
Event Description: Partial Stator water runback. Tech Spec for SRO.		

Time	Position	Applicant's Actions or Behavior
Cued by lead examiner	ANY	Announce alarm Generator protection Circuit energized and Stator cooling water trouble
Cue: After the crew notice the Generator runback has stopped, report as the IAO that near the stator water skid when you heard 2P-25B Stator water pump trip and 2P-25A auto start. State that you were investigating the skid when you heard a check valve slam and 2P-25B then stopped rotating.		
	SRO	Enter and Implement AOP 2203.024, Loss of Turbine Load.
	SRO	1. Open Placekeeping page.
Examiner note: The SRO should implement the floating step for Generator Protection Circuit energized.		
	SRO	■3. Check "Generator Protection Circuit Energized" annunciator (2K02-A4) NOT in alarm.
	ATC	3. Perform the following: A. IF Turbine runback in progress, THEN perform EITHER or BOTH of the following for power reduction: • Emergency Borate per 2202.010, Exhibit 1, Emergency Boration. • Insert Group 6 OR Group P CEAS per 2105.009, CEDM Control System Operation.

Op-Test No.: 2012-1 Scenario No.: 2 Event No.: 4

Event Description: Partial Stator water runback. Tech Spec for SRO.

Time	Position	Applicant's Actions or Behavior
Emergency Boration	ATC	1. Select ONE of the following Emergency Boration flowpaths: **FLOWPATH** — **ACTIONS REQUIRED** A. Gravity Feed A. Verify at least ONE BAM Tank Gravity Feed valve open: • 2CV-4920-1 • 2CV-4921-1 B. BAM pumps pump. B. 1) Start at least ONE BAM 2) Open Emergency Borate valve (2CV-4916-2). 3) Verify Boric Acid Makeup Flow Control valve (2CV-4926) closed. C. RWT to Charging pumps C. Open Charging Pump Suction Source From RWT valve (2CV-4950-2). **Examiner Note: Gravity Feed is the normal method used for a Stator Water Runback.**
	ATC	2. Close VCT Outlet valve (2CV-4873-1).
	ATC	3. IF VCT Outlet valve does NOT close, THEN verify BAM Pumps Emergency Boration flowpath selected. **Examiner Note: This step is N/A**
	ATC	4. Verify Reactor Makeup Water Flow Control valve (2CV-4927) closed. 5. Verify at least ONE Charging pump running and charging header flow greater than 40 gpm. 6. Verify charging header flow greater than 40 gpm by either of the following: • 2FIS-4863 Disch Flow (2C09) • Computer Point F4863 (PDS, PMS or SPDS)

Op-Test No.: 2012-1 Scenario No.: 2 Event No.: 4

Event Description: Partial Stator water runback. Tech Spec for SRO.

Time	Position	Applicant's Actions or Behavior
Steps for CEA insertion	ATC	**NOTE** • CEA SELECTED indicates selected CEA position. • GROUP SELECTED indicates average position of selected group. • If ≥ 6 inch deviation occurs in any regulating group, then rod motion is inhibited by PMS CEA sequencing program. 1.0 IF moving CEAs in group, THEN perform the following at 2C03: 1.1 Place Group Select switch to desired group position. 1.2 IF moving Group P CEAs, THEN place P Group Select switch to P. 1.3 Ensure Individual CEA Selection switches aligned to CEA in group selected to move. 1.4 Place Mode Select switch to MANUAL GROUP (MG) or MANUAL SEQUENTIAL (MS). * 1.5 Observe CEAC and Pulse Counter CEA position indications to verify CEA motion and alignment as CEAs are moved. RAP 1.6 Position groups as desired using Manual Control lever. 1.7 Place Mode Select switch to OFF. 1.8 Verify Pulse Counter and CEAC indications match.
	SRO	B. Record time Turbine runback complete:
	ATC	C. WHEN sufficient boron added, THEN secure Emergency Boration. D. WHEN sufficient CEAS inserted, THEN stop CEA insertion.

Op-Test No.: 2012-1 Scenario No.: 2 Event No.: 4

Event Description: Partial Stator water runback. Tech Spec for SRO.

Time	Position	Applicant's Actions or Behavior
Steps to secure Emergency Boration	ATC	NOTE Reactor Engineering assistance may be required to determine shutdown margin. 7. WHEN boron concentration greater than minimum required for shutdown margin, THEN perform the following: A. Verify VCT level ≥ 20%. B. Place VCT Outlet valve (2CV-4873-1) in AUTOMATIC. C. WHEN 2CV-4873-1 open, THEN perform the following: 1) Verify BOTH BAM pumps secured. 2) Verify the following valves closed: • 2CV-4920-1 • 2CV-4921-1 • 2CV-4916-2 3) IF 2CV-4950-2 was opened, THEN place handswitch in AUTOMATIC and check that valve closes.
	SRO	2. Notify Control Board Operators to monitor floating steps.
	ATC	*4. Reduce Reactor power to match TAVE within 2°F of TREF using 2104.003 Exhibit 3, normal boration.
	ANY	*5. Check RCS pressure 2025 to 2275 psia.
	ANY	*6. Verify SDBCS maintaining SG pressure at setpoint.
		7. IF Main Turbine has NOT tripped, THEN perform the following: • Re-establish Turbine control on Load Limit Pot. • Refer to TRM 3.3.4, Turbine Overspeed Protection.

Op-Test No.: 2012-1 Scenario No.: 2 Event No.: 4

Event Description: Partial Stator water runback. Tech Spec for SRO.

Time	Position	Applicant's Actions or Behavior
	SRO	■9. IF ADVs are open, THEN maintain Hotwell level 30-90% by performing one of the following: • Make up using 2106.016 Exhibit 1, Hotwell Makeup Operations. • Slug feed Hotwell by locally throttling open 2CV-0634 Inlet (2CT-0634-1) and 2CV-0634 Outlet (2CT-0634-2). **Examiner note: ADVs should partially open due to this runback.**
	SRO	*10. Check RCS TC 542 to 554.7°F using CPC PID 5, 6, 160, or 161. **Examiner Note: The SRO must enter TS 3.2.6 for the time when the Tc is/was greater than 554.7°F**
	SRO	*11. Check ASI within limits as specified in Core Operating Limits Report (COLR).
	ANY	*12. Check CEA positions as follows: A. ALL Regulating Group 6 CEAs above 112.5 inches. B. ALL Regulating Group 1 through 5 CEAs fully withdrawn. C. ALL Group P CEAs above 135 inches.
	ANY	*13. Check Reactor NOT tripped.
	BOP	*14. Verify Feedwater Control System restoring SG levels to setpoint.
	ATC	*15. Check PZR level within 5% of setpoint:
	BOP	17. Check Condenser pressure less than 5.3 inches Hg Abs.
	SRO	■18. Verify ALL required actions have been completed based on power level, refer to 2102.004, Power Operation.
	SRO	20. IF Reactor power change greater than 15% in 1 Hr, THEN notify Chemistry to sample RCS for Iodine within 2 hours to 6 hours, refer to TS 4.4.8, RCS Activity.
Cue: If contacted as Chemistry, report that you will sample the RCS for Iodine when requested.		

Op-Test No.: 2012-1	Scenario No.: 2	Event No.: 4

Event Description: Partial Stator water runback. Tech Spec for SRO.

Time	Position	Applicant's Actions or Behavior
	SRO	21. Perform the following as directed by Operations Management: • Reload Turbine Generator using 2106.009, Turbine Generator Operations. • Maintain Plant conditions using 2102.004, Power Operation. • Perform Plant Shutdown.

Termination Criteria: When reactivity manipulations are satisfied and Turbine load has been re-established on the load limit pot or at the discretion of the lead examiner.

Op-Test No.: 2012-1	Scenario No.: 2	Event No.: 5, 6, 7, & 8

Event Description: 'B' Reactor Coolant Pump (RCP) trip, Reactor Protection System auto trip failure, Main Steam Safety valve setpoint drifts causing an ESD, and EFW valve 2CV-1025-1 fails to auto close, and 2EFW-1038-2 failed open. 'B' Main feedwater pump trips to allow Steam Generator level to lower for Auto EFW actuation.

Time	Position	Applicant's Actions or Behavior
Cued by lead examiner	ANY	Report 2K-11 G1 RCP trip alarm, 'B' RCP is tripped but the reactor is not tripped.
	SRO	Direct Reactor trip.
Critical Step **Trip the reactor using the RPS pushbuttons within 1 min of 'B' RCP trip.**	ATC	Trip the Reactor using the RPS push buttons **Examiner note: The SRO may discuss Tech Spec 3.3.1.1 for RPS failure to automatically trip the reactor.**
	SRO	Enter and implement EOP 2202.001, Standard Post Trip Actions.
	SRO	1. Notify Control Board Operators to monitor safety functions using Exhibit 7, CBO Reactor Trip Checklist. 2. Open Safety Function Tracking page.
Reactivity control safety function	ATC	3. Check Reactivity Control established as follows: _____A. Reactor power lowering. _____B. ALL CEAs fully inserted by observing ANY of the following: 1) CEA Rod bottom lights illuminated. 2) CEAC 1 indicates ALL CEAs fully inserted. 3) CEAC 2 indicates ALL CEAs fully inserted.

Op-Test No.: 2012-1 Scenario No.: 2 Event No.: 5, 6, 7, & 8

Event Description: 'B' Reactor Coolant Pump (RCP) trip, Reactor Protection System auto trip failure, Main Steam Safety valve setpoint drifts causing an ESD, and EFW valve 2CV-1025-1 fails to auto close, and 2EFW-1038-2 failed open. 'B' Main feedwater pump trips to allow Steam Generator level to lower for Auto EFW actuation.

Time	Position	Applicant's Actions or Behavior
Vital Auxiliaries safety function	BOP	4. Check Maintenance of Vital Auxiliaries satisfied: A. Check Main Turbine tripped by BOTH of the following: • ALL Main Stop Valves closed. • Generator megawatts indicate zero. B. Generator Output breakers open. C. Exciter Field breaker open. D. Check the following valves closed: • MSR 2E-12A Steam Supply From SG A (2CV-0400) • MSR 2E-12B Steam Supply From SG B (2CV-0460) E. At least ONE 6900v AC bus energized F. At least ONE 4160v Non-vital AC bus energized. G. BOTH 4160v Vital AC buses energized. H. BOTH DGs secured. I. At least ONE 125v Vital DC bus energized: 2D01 - SPDS point E2D01 2D02 - SPDS point E2D02
RCS Inventory Control Safety function	ATC	5. Check RCS Inventory Control established as follows: A. PZR level: • 10 to 80%. • Trending to setpoint. **(Will not be met due to ESD Event, perform contingency)** B. RCS MTS 30°F or greater.

Op-Test No.: 2012-1 Scenario No.: 2 Event No.: 5, 6, 7, & 8

Event Description: 'B' Reactor Coolant Pump (RCP) trip, Reactor Protection System auto trip failure, Main Steam Safety valve setpoint drifts causing an ESD, and EFW valve 2CV-1025-1 fails to auto close, and 2EFW-1038-2 failed open. 'B' Main feedwater pump trips to allow Steam Generator level to lower for Auto EFW actuation.

Time	Position	Applicant's Actions or Behavior
RCS Inventory Control Safety function	SRO	Direct the following as necessary: A. Perform as necessary: 1) IF SIAS actuated on PPS inserts, THEN **GO TO** Step 6. 2) Verify PZR Level Control system restoring level to setpoint.
RCS Pressure Control Safety function	BOP	6. Check RCS Pressure Control: — • 1800 to 2250 psia. — • Trending to setpoint. **(Not met due to ESD Event #7, perform contingency)** • Normal PZR Spray and heaters controlling pressure. • Valid CNTMT Spray NOT in progress.
RCS Pressure Control Safety function	SRO	Direct the following actions as necessary: 6. Perform as necessary: A. IF RCS pressure lowers to less than 1400 psia, THEN trip ONE RCP in EACH loop. D. IF RCP 2P32A or 2P32B stopped, THEN verify associated PZR Spray valve in MANUAL and closed. **(2P-32B spray valve should be verified closed)** E. IF RCS pressure lowers to 1650 psia or less, THEN perform the following: 1) Verify SIAS actuated on PPS inserts. 2) **GO TO** Step 7. F. Verify PZR Pressure Control system restoring pressure to setpoint.

Op-Test No.: 2012-1 Scenario No.: 2 Event No.: 5, 6, 7, & 8

Event Description: 'B' Reactor Coolant Pump (RCP) trip, Reactor Protection System auto trip failure, Main Steam Safety valve setpoint drifts causing an ESD, and EFW valve 2CV-1025-1 fails to auto close, and 2EFW-1038-2 failed open. 'B' Main feedwater pump trips to allow Steam Generator level to lower for Auto EFW actuation.

Time	Position	Applicant's Actions or Behavior
Core Heat Removal safety function.	ATC	7. Check Core Heat Removal by forced circulation: A. At least ONE RCP running. B. CCW flow aligned to RCPs. C. Loop delta T less than 10°F. D. RCS MTS 30°F or greater. E. Check SW aligned to CCW. **(SW will not be aligned due to SIAS and should perform contingency)** F. IF SIAS or MSIS actuated, THEN maintain SW header pressure greater than 85 psig.
	SRO	Direct the contingency for step 7. E
	BOP	E. IF CCW available, THEN restore SW to CCW, refer to 2202.010 Exhibit 5, CCW/ACW/SW Alignment.

Op-Test No.: 2012-1 Scenario No.: 2 Event No.: 5, 6, 7, & 8

Event Description: 'B' Reactor Coolant Pump (RCP) trip, Reactor Protection System auto trip failure, Main Steam Safety valve setpoint drifts causing an ESD, and EFW valve 2CV-1025-1 fails to auto close, and 2EFW-1038-2 failed open. 'B' Main feedwater pump trips to allow Steam Generator level to lower for Auto EFW actuation.

Time	Position	Applicant's Actions or Behavior
Steps to restore SW to CCW	BOP	1. IF SW suction NOT aligned to lake, THEN RETURN TO procedure in effect. 2. IF SW NOT aligned to CCW AND CCW available, THEN perform the following: A. IF RCP seal temperatures less than 180°F, THEN restore SW to CCW by performing the following: 1). Override and open at least ONE SW to CCW/ACW Return valve: • 2CV-1543-1 • 2CV-1542-2 **CAUTION** Supplying ACW flow and CCW cooling from a single SW pump may result in low SW header pressure. 2). Override and throttle open at least ONE SW to CCW /Main Chillers Supply valve: • 2CV-1530-1 • 2CV-1531-2 3). Maintain SW header pressure greater than 85 psig.

Op-Test No.: 2012-1 Scenario No.: 2 Event No.: 5, 6, 7, & 8

Event Description: 'B' Reactor Coolant Pump (RCP) trip, Reactor Protection System auto trip failure, Main Steam Safety valve setpoint drifts causing an ESD, and EFW valve 2CV-1025-1 fails to auto close, and 2EFW-1038-2 failed open. 'B' Main feedwater pump trips to allow Steam Generator level to lower for Auto EFW actuation.

Time	Position	Applicant's Actions or Behavior
RCS Heat Removal Safety Function	BOP/ATC	8. Check RCS Heat Removal: A. Check SG available by BOTH of the following: • At least ONE SG level 10 to 90%. • FW maintaining SG level **(Not Met, Perform contingency)** B. Check MFW in RTO **(Not Met, Perform contingency)** C. Check Feedwater line intact by the following: • SG level stable or rising. • NO unexplained step changes or erratic FW flow. • NO unexplained step changes or erratic Condensate flow. D. Check SG pressure 950 to 1050 psia. **(Not Met, perform Contingency)**
	ANY	Perform step 8 contingency actions that are applicable: A. Perform the following: 1) IF SG level lowering, THEN verify EFAS actuated. **(To the 'B' S/G only)**
	ANY	B. Verify EITHER of the following: • BOTH MFW pumps tripped. • SG levels controlling at setpoint
	ANY	D. Perform as necessary: 1) IF SG pressure 751 psia or less, THEN perform the following: a) Verify MSIS actuated on PPS inserts.
	BOP	b) Verify feed secured to the affected SG. **Examiner note: The BOP must either close 2CV-1025-1 or secure 2P-7B EFW pump.** **Examiner note: The SRO may discuss Tech Spec 3.7.2.1 for EFW trains due valve failure.**

Op-Test No.: 2012-1 Scenario No.: 2 Event No.: 5, 6, 7, & 8

Event Description: 'B' Reactor Coolant Pump (RCP) trip, Reactor Protection System auto trip failure, Main Steam Safety valve setpoint drifts causing an ESD, and EFW valve 2CV-1025-1 fails to auto close, and 2EFW-1038-2 failed open. 'B' Main feedwater pump trips to allow Steam Generator level to lower for Auto EFW actuation.

Time	Position	Applicant's Actions or Behavior
	ALL	b) Maintain RCS post-cooldown conditions as follows: • Maintain RCS pressure within P-T limits with PZR heaters and spray using 2202.010 Attachment 48, RCS Pressure Control. • Maintain RCS temperature by steaming intact SG using Upstream ADV or Upstream ADV Isolation MOV. c) **GO TO** Step 9. **Examiner note: The SRO may discuss Tech Spec 3.7.1.1 for Main Steam Safety valves.**
Steam Dump Exhibit 3		1.0 IF BOTH MSIV's closed, THEN GO TO step 5.0. **Examiner note: MSIVs are closed.** 5.0 Perform the following to determine availability of SDBCS valves: 5.1 IF the following conditions satisfied, THEN Upstream ADV are available: • Instrument air available • Emergency OFF (2K02-A14) clear • Power available to selected controllers/valves **Examiner note: MSIVs are closed.**

Op-Test No.: 2012-1 Scenario No.: 2 Event No.: 5, 6, 7, & 8

Event Description: 'B' Reactor Coolant Pump (RCP) trip, Reactor Protection System auto trip failure, Main Steam Safety valve setpoint drifts causing an ESD, and EFW valve 2CV-1025-1 fails to auto close, and 2EFW-1038-2 failed open. 'B' Main feedwater pump trips to allow Steam Generator level to lower for Auto EFW actuation.

Time	Position	Applicant's Actions or Behavior
Steam Dump Exhibit 3		6.0 IF operation of Upstream Atmospheric Dump valve from the Control Room desired, THEN perform the following: 6.1 Verify selected HIC in MANUAL with ZERO output demand: • 2HIC-1001 Upstream Atmospheric Dump valve • 2HIC-1051 Upstream Atmospheric Dump valve 6.2 Place selected valve(s) permissive handswitch in MANUAL: • 2CV-1001 Upstream Atmospheric Dump valve (2HS-1001) • 2CV-1051 Upstream Atmospheric Dump valve (2HS-1051) 6.3 IF MSIS actuated, THEN override actuation for selected MOV isolation: • 2CV-1002 ADV Upstream Isolation valve • 2CV-1052 ADV Upstream Isolation valve * 6.4 Throttle open selected MOV as desired: • 2CV-1002 ADV Upstream Isolation valve • 2CV-1052 ADV Upstream Isolation valve * 6.5 Place selected HIC to desired demand: • 2HIC-1001 Upstream Atmospheric Dump valve • 2HIC-1051 Upstream Atmospheric Dump valve

Op-Test No.: 2012-1 Scenario No.: 2 Event No.: 5, 6, 7, & 8

Event Description: 'B' Reactor Coolant Pump (RCP) trip, Reactor Protection System auto trip failure, Main Steam Safety valve setpoint drifts causing an ESD, and EFW valve 2CV-1025-1 fails to auto close, and 2EFW-1038-2 failed open. 'B' Main feedwater pump trips to allow Steam Generator level to lower for Auto EFW actuation.

Time	Position	Applicant's Actions or Behavior
Containment Safety Function	ANY	9. Check CNTMT parameters: A. Temperature and Pressure: • Temperature less than 140°F. • Pressure less than 16 psia. B. Check CNTMT Spray pumps secured. C. NO CNTMT radiation alarms or unexplained rise in activity: 1) CAMS alarms: • "CNTMT PART/GAS RAD HI/LO" annunciator (2K10-B6) clear. 2) RCS leakage alarms: • "AREA RADIATION HI/LO" annunciator (2K11-B10) clear. • "PROC LIQUID RADIATION HI/LO" annunciator (2K11-C10) clear. 3) Check the following radiation monitors trend stable: • CNTMT Area • CAMS • Process Liquid D. NO secondary system radiation alarms or unexplained rise in activity: 1) "SEC SYS RADIATION HI" annunciator (2K11-A10) clear. 2) Secondary Systems Radiation monitors trend stable: • Main Steam lines • SG Sample • Condenser Off Gas

Op-Test No.: 2012-1 Scenario No.: 2 Event No.: 5, 6, 7, & 8

Event Description: 'B' Reactor Coolant Pump (RCP) trip, Reactor Protection System auto trip failure, Main Steam Safety valve setpoint drifts causing an ESD, and EFW valve 2CV-1025-1 fails to auto close, and 2EFW-1038-2 failed open. 'B' Main feedwater pump trips to allow Steam Generator level to lower for Auto EFW actuation.

Time	Position	Applicant's Actions or Behavior
	SRO	10. Notify STA to report to control room. 11. Direct NLOs to perform 2202.010 Attachment 47, Field Operator Post Trip Actions. 12. Verify Reactor trip announced on Plant page. 13. Notify SM to refer to Technical Specifications and 1903.010, Emergency Action Level Classification.
Cue: If contacted as the STA to report to the control room, acknowledge the request. Cue: If contacted as a NLO to perform Attachment 47 Field Operator Post Trip Actions, acknowledge request.		
	SRO	14. Direct control board operators to acknowledge ALL annunciators and announce ALL critical alarms.
	SRO	15. Check ALL safety function acceptance criteria satisfied. **(All safety functions are not satisfied, perform contingency)** 15. IF ANY safety function acceptance criteria NOT satisfied, THEN perform the following: A. Notify control room staff of safety functions NOT satisfied. B. GO TO Exhibit 8, Diagnostic Actions.
	SRO	Diagnose Excess Steam Demand EOP 2202.005
	SRO	Enter and implement Excess Steam Demand EOP 2202.005

Op-Test No.: 2012-1 Scenario No.: 2 Event No.: 5, 6, 7, & 8

Event Description: 'B' Reactor Coolant Pump (RCP) trip, Reactor Protection System auto trip failure, Main Steam Safety valve setpoint drifts causing an ESD, and EFW valve 2CV-1025-1 fails to auto close, and 2EFW-1038-2 failed open. 'B' Main feedwater pump trips to allow Steam Generator level to lower for Auto EFW actuation.

Time	Position	Applicant's Actions or Behavior
	SRO	*1. Confirm diagnosis of Excess Steam Demand as follows: A. Check SFSC acceptance criteria satisfied every 15 minutes. B. IF CCW in service to provide SG Sample Cooler cooling, THEN perform the following: 1) IF SG "A" has indicated water level, THEN verify the following SG 'A' Sample Valves open: • 2CV-5850 • 2CV-5852-2 2) IF SG "B" has indicated water level, THEN verify the following SG 'B' Sample Valves open: • 2CV-5858 • 2CV-5859-2 C. Notify Chemistry to sample available SGs for activity.
Cue: When contacted as Chemistry, then report you will sample both S/G for activity and Monitor RDACS for off site dose releases.		
	SRO	2. Notify SM to refer to Technical Specifications and 1903.010, Emergency Action Level Classification.
	SRO	3. Open Placekeeping Page.
	SRO	4. Notify Control Board Operators to monitor floating steps.
	ANY	5. Verify MSIS actuated on PPS inserts.
	ANY	*6. IF SIAS setpoints exceeded by EITHER of the following: • RCS pressure 1650 psia or less. • CNTMT pressure 18.3 psia or greater. THEN verify SIAS and CCAS actuated on PPS inserts.
	ANY	*7. Verify actuated ESFAS components using 2202.010, Exhibit 9, ESFAS Actuation.

Op-Test No.: 2012-1 Scenario No.: 2 Event No.: 5, 6, 7, & 8

Event Description: 'B' Reactor Coolant Pump (RCP) trip, Reactor Protection System auto trip failure, Main Steam Safety valve setpoint drifts causing an ESD, and EFW valve 2CV-1025-1 fails to auto close, and 2EFW-1038-2 failed open. 'B' Main feedwater pump trips to allow Steam Generator level to lower for Auto EFW actuation.

Time	Position	Applicant's Actions or Behavior
Exhibit 9 ESFAS actuation.	BOP	*1.0 IF any abnormalities noted for affected ESFAS actuation, THEN notify CRS. 2.0 IF SIAS, THEN verify the following: ☐ Red Train RWT Outlet (2CV-5630-1) open. ☐ Red Train HPSI Pump in service with proper discharge pressure and flow. ☐ Red Train HPSI Injection MOVs open. ☐ Red Train Service Water Pump in service with proper discharge pressure. ☐ Red Train LPSI Pump (2P60A) in service with proper discharge pressure and flow. ☐ Red Train LPSI Injection MOVs open. ☐ Green Train RWT Outlet (2CV-5631-2) open. ☐ Green Train HPSI Pump in service with proper discharge pressure and flow. ☐ Green Train HPSI Injection MOVs open. ☐ Green Train Service Water Pump in service with proper discharge pressure. ☐ Green Train LPSI Pump (2P60B) in service with proper discharge pressure and flow. ☐ Green Train LPSI Injection MOVs open. ☐ Available Charging Pumps in service with proper discharge pressure and flow. ☐ Service Water Outlet Valves open for #1 and #2 EDGs. 3.0 IF CCAS, THEN verify the following: ☐ Red Train CNTMT Coolers in service. ☐ Service Water aligned to Red Train CNTMT Coolers. ☐ Red Train Bypass Dampers open. ☐ Green Train CNTMT Coolers in service. ☐ Service Water aligned to Green Train CNTMT Coolers. ☐ Green Train Bypass Dampers open.

Op-Test No.: 2012-1 Scenario No.: 2 Event No.: 5, 6, 7, & 8

Event Description: 'B' Reactor Coolant Pump (RCP) trip, Reactor Protection System auto trip failure, Main Steam Safety valve setpoint drifts causing an ESD, and EFW valve 2CV-1025-1 fails to auto close, and 2EFW-1038-2 failed open. 'B' Main feedwater pump trips to allow Steam Generator level to lower for Auto EFW actuation.

Time	Position	Applicant's Actions or Behavior
Exhibit 9 ESFAS actuation.	BOP	4.0 IF CSAS, THEN verify the following: ☐ Red Train CSS Pump (2P35A) in service with proper discharge pressure and flow. ☐ Red Train CSS Header Isolation (2CV-5612-1) open. ☐ Green Train CSS Pump (2P35B) in service with proper discharge pressure and flow. ☐ Green Train CSS Header Isolation (2CV-5613-2) open. ☐ Main Feedwater Block valves closed. ☐ MSIVs closed. ☐ Main Feed pumps tripped. ☐ Condensate pumps secured. ☐ Heater Drain pumps secured. 5.0 IF MSIS, THEN verify the following: ☐ MSIVs closed. ☐ Main Feedwater Block valves closed. ☐ Red Train Service Water Pump in service with proper discharge pressure. ☐ Green Train Service Water Pump in service with proper discharge pressure. ☐ Main Feed pumps tripped. ☐ Condensate pumps secured. ☐ Heater Drain pumps secured.
	SRO	Should elect to pull up the floating step for Maintain Post cooldown conditions. Step 19 if this was not directed in SPTAs.
Maintain post-cooldown conditions **CRITICAL TASK**	ATC/BOP	■19. Maintain RCS post-cooldown conditions as follows: A. Maintain RCS temperature by steaming intact SG using EITHER of the following: • Upstream ADV. • Upstream ADV Isolation MOV. B. Control feedwater flow to intact SG using 2202.010 Attachment 46, Establishing EFW Flow. C. Maintain RCS pressure within P-T limits using 2202.010 Attachment 48, RCS Pressure Control. **Critical task: Use attachment 48 to maintain RCS pressure within the Pressure-Temperature limits of 200°F and 30°F Margin to Saturation.**

Op-Test No.: 2012-1 Scenario No.: 2 Event No.: 5, 6, 7, & 8

Event Description: 'B' Reactor Coolant Pump (RCP) trip, Reactor Protection System auto trip failure, Main Steam Safety valve setpoint drifts causing an ESD, and EFW valve 2CV-1025-1 fails to auto close, and 2EFW-1038-2 failed open. 'B' Main feedwater pump trips to allow Steam Generator level to lower for Auto EFW actuation.

Time	Position	Applicant's Actions or Behavior
	ANY	■8. Restore ESF/Non-ESF systems post-SIAS as follows: A. Verify at least ONE SW pump running on EACH loop.
	ANY	B. Verify DG SW Outlet valves open.
	ANY	C. Verify SW pump suction aligned to Lake.
	ANY	D. Check 4160v Non-vital bus 2A1 or 2A2 energized from offsite power.
	ANY	E. Check 4160v Vital buses 2A3 AND 2A4 energized from offsite power.
	BOP	F. Start SW pumps as needed to maintain SW header pressure.
	ANY	G. Check SW to CCW restored.
	ANY	H. Check ACW restored. **(Not met, perform contingency)**
	BOP	H. Restore SW to ACW, refer to 2202.010 Exhibit 5, CCW/ACW/SW Alignment.
	BOP	I. Maintain SW header pressure greater than 85 psig.
	ANY	*9. Verify Safety Injection flow to RCS as follows: A. Check total HPSI flow acceptable using 2202.010 Exhibit 2, HPSI Flow Curve. B. Check total LPSI flow acceptable using 2202.010 Exhibit 3, LPSI Flow Curve.
	ANY	■10. Check CCW flow aligned to RCPs.
	ANY	■11. Check RCS pressure greater than 1400 psia.
	ANY	■12. WHEN RCS TC less than 510°F, THEN reduce number of running RCPs as follows: A. Verify maximum of ONE RCP running in EACH loop. B. IF RCP 2P32A or 2P32B stopped, THEN verify associated PZR Spray valve in MANUAL and closed.
	ANY	13. Determine most affected SG by comparing the following: • SG steam flows. • SG pressures. • SG levels. • RCS TC.

Op-Test No.: 2012-1 Scenario No.: 2 Event No.: 5, 6, 7, & 8

Event Description: 'B' Reactor Coolant Pump (RCP) trip, Reactor Protection System auto trip failure, Main Steam Safety valve setpoint drifts causing an ESD, and EFW valve 2CV-1025-1 fails to auto close, and 2EFW-1038-2 failed open. 'B' Main feedwater pump trips to allow Steam Generator level to lower for Auto EFW actuation.

Time	Position	Applicant's Actions or Behavior
	ANY	■17. Isolate most affected SG using 2202.010 Attachment 10, SG Isolation. • IF affected SG still pressurized, THEN check MSSVs for affected SG closed by locally checking individual valve tail pipes for leakage.
Cue: If contacted as the AO, then report after 5 min that the local portions of Attachment 10 for 'A' S/G are complete.		
Termination criteria: Post Cooldown conditions maintained or at the discretion of the lead examiner.		

Op-Test No.: 2012-1 Scenario No.: 2 Event No.: 9

Event Description: 'A' RCP spray valve failed closed.

Time	Position	Applicant's Actions or Behavior
	ATC	Recognize that 'A' RCP spray valve is not opening as required to control RCS pressure.
Examiner note: If this failure is recognized during the stator water runback the SRO should refer to PZR Malfunctions AOP if needed to open 2CV-4651. Otherwise the guidance is located in Standard Att. 48 which is directed during Post Cooldown control.		
	ATC/SRO	Determine that auxiliary spray is required due to 2CV-4651 normal Spray valve failure to open.
	ATC	4.0 IF desired to use AUXILIARY Spray, THEN perform the following: A. Verify at least ONE Charging pump running.
	ATC	B. Close Regen HX to RCP B/C valves: • 2CV-4827-2 • 2CV-4831-2
	ATC	C. Verify PZR Spray (2CV-4651/2CV-4652) or PZR Spray Isolation valves (2HS-4655/2HS-4653) closed.
	ATC	D. Throttle Aux Spray valve (2CV-4824-2) as necessary.
	ATC	G. IF Regen HX to RCS (2TI-4825) AND PZR water phase (2TI-4627) differential temperature greater than 200°F, THEN complete Table 1 of this attachment.
	ATC	TABLE 1

TABLE 1

TIME		TEMPERATURE		
SPRAY VALVE OPENED	SPRAY VALVE CLOSED	(PZR WATER PHASE) 2TI-4627	2TIS-4607 2TIS-4608 2TI-4825	DIFFERENCE

Op-Test No.: 2012-1	Scenario No.: 2	Event No.: 9
Event Description: 'A' RCP spray valve failed closed.		

Time	Position	Applicant's Actions or Behavior
	BOP	5.0. IF desired to use PZR Heaters, THEN perform the following: A. Cycle available PZR Backup heaters as necessary to control RCS pressure. B. Cycle available PZR Proportional heaters as necessary to control RCS pressure.
Termination criteria: When RCS pressure is being controlled with in the PT limits or at examiner's discretion.		

Facility: ANO-2	Scenario No.: 3 (New)	Op-Test No.: 2012-1
Examiners:	Operators:	

Initial Conditions:
~4% MOL; All Engineered Safety Features systems are in standby. #3 and #4 MTG control valve steam lead valves failed open. Voltage regulator auto tracking circuit is disabled. RED Train Maintenance Week.

Turnover:
~4%. 260 EFPD. EOOS indicates 'Minimal Risk'. #3 and #4 MTG control valve steam lead valves failed open. Voltage regulator auto tracking circuit is disabled. RED Train Maintenance Week. 2102.004 power operations section 8 complete up to step 8.8. Steps 8.3 and 8.4 continuous actions. Test Team will roll the turbine and sync to the grid at ~10% power. Steam Bypass valve 2CV-0303 is in auto and 2CV-0302 is in manual balancing condenser heat loads.
Evolution scheduled: Commence Power Escalation @ <15%/Hr.

Event No.	Malf. No.	Event Type*	Event Description
1		R (ATC) N (BOP) N (SRO)	Commence Power escalation to 10% power for turbine sync.
2	DI_HS_4966_1 DI_HS_4966_2 DO_HS_4966_G DO_HS_4966_R	C (ATC) C (SRO)	2P-109B reactor makeup water pump trips
3	NIALINEPWR		'A' Nuclear Instrument (NI) fails high. Tech Spec for SRO.
4	XCV2LT4861	I (ATC) I (SRO)	Volume Control Tank (VCT) level transmitter fails high.
5	DI_C40_S72B ESFCIAS1 K04-C01 K07-C01	C(BOP) C(SRO)	Inadvertent Containment Isolation Actuation Signal (CIAS) on the Green Train. Tech Spec for SRO.
6	RCP2P32DUPP RCP2P32DMID RCP2P32DLOW RCLOCATCD	M (ALL)	'D' RCP seals fail and a 180 gpm RCS leak starts.
7	CEA15STUCK CEA31STUCK	C (ATC) C (SRO)	Control Element Assembly's (CEA) 15 and 31 fail to fully insert during the reactor trip.
8	SIS2P89AX	C (BOP) C (SRO)	2P-89A High Pressure Safety Injection (HPSI) pump has degraded performance.

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

Total malfunctions. = 6, Malfunctions after EOP entry = 2, Abnormal events = 3, Major transient = 1,
EOPs with substantive actions =1, EOP Contingencies = 0, Critical tasks = 3.

Scenario #3 Objectives

1) Evaluate individual ability to perform a power escalation.
2) Evaluate individual response to a trip of a reactor makeup water pump.
3) Evaluate individual response to a failure of Nuclear Instrumentation Channel.
4) Evaluate individual response to a failure of a Chemical Volume Control System transmitter failure.
5) Evaluate individual response to an Inadvertent Containment Isolation signal.
6) Evaluate individual response to Reactor Coolant Pump seal failures and a Reactor Coolant System leak.
7) Evaluate individual response to a stuck out CEAs after a Reactor Trip.
8) Evaluate individual ability to monitor operation of Engineered Safety Features equipment and respond to a degraded High Pressure Safety Injection pump.
9) Evaluate individual ability to mitigate a Loss of Coolant Accident.

SCENARIO #3 NARRATIVE

Simulator session begins with the plant at ~4% power.

When the crew has completed their control room walk down and brief, they will commence a power escalation using CEAs and dilution of the RCS.

When the required power change has been completed and when cued by lead examiner, 2P-109B reactor make up water pump will trip. This will prevent the crew being able to dilute and raise power. The ATC should coordinate with a NLO to start the other reactor make up water pump 2P-109A.

When 2P-109A reactor makeup water pump has been started and when cued by lead examiner, 'A' NI will fail high. The SRO will enter and implement NI malfunction AOP, 2203.026. The SRO should enter Tech Spec 3.3.1.1 action 2 for RPS. The BOP will be required to bypass the Plant Protection System channel 1 for linear power (point 1), log power (point 2), LPD (point 3), and DNBR (point 4).

When the appropriate Tech spec has been entered and the BOP has bypassed points 1 through 4 and cued by lead examiner; VCT level transmitter 2LT-4861 will fail high. The SRO/ATC should refer/use the Annunciator Corrective action for VCT level low (due to VCT level actually lowering) and the ATC will place the letdown divert valve to the VCT position stopping the RCS mass loss.

After the Crew has place the divert valve to the VCT position and cued by lead examiner, an Inadvertent Containment isolation will occur on the green train causing the CCW to RCP valve and the Main Chilled water to containment valves to close. The SRO will enter Inadvertent CIAS AOP, OP 2203.039. The crew should restore Component Cooling Water (CCW) to RCPs. The SRO will enter Tech Spec 3.6.3.1. for the overridden Containment Isolation valve. The ATC will cycle charging pump to control pressurizer level. The crew should minimize CEA movement due to the loss of cooling. The BOP will start all containment coolers and align Service Water to maintain Containment temperature and pressure in the required band. The SRO should call for maintenance assistance to correct inadvertent green train Containment isolation.

SCENARIO #3 NARRATIVE (continued)

When the actions of inadvertent CIAS have been completed or at the lead examiners cue the 'D' RCP seals will fail and a RCS leak will start. The SRO should enter the RCP emergencies AOP, 2203.025 due to the first failed seal. The SRO will contact operations management and continue plant operation based on their recommendation. When the other two seals fail the Crew should trip the reactor and secure 'D' RCP. The crew may also secure 'A' or 'B' RCP to balance RCS flows. The SRO may actuate SIAS and CCAS due to the RCS leak.

The Crew will implement Standard Post Trip Actions (SPTA) EOP, 2202.001. When the reactor trips two CEAs will fail to fully insert which requires emergency boration. The ATC will commence emergency boration. The Crew may lower Steam Dump master controller setpoint during SPTAs to aid in maintaining margin to saturation.

The SRO will diagnose either an Excess RCS leakage and enter Excess RCS leakage AOP, 2203.016, or if SIAS is actuated diagnose Loss of Coolant Accident (LOCA). If Excess RCS is diagnosed the SRO should implement the floating step for leakage greater than 44 gpm then actuate SIAS and CCAS and re-diagnose LOCA The crew should determine that 2P-89A HPSI pump has degraded discharge pressure and start 2P-89C. The ATC will commence cool down of the RCS and control RCS pressure to restore pressurizer level. The BOP will override Service Water to Component Cooling Water and Auxiliary Cooling Water.

Simulator Instructions for Scenario 3

Reset simulator to MOL ~4 % power IC stead state.
Ensure that AACG is secured and annunciators clear.
Place MINIMAL RISK, Green Train Protected and RED Train Maintenance Week signs on 2C11.
Volume Control tank level ~60%.
Ensure the SDBCS master is in A/L with a setpoint of 1000 psi
Ensure both main feedwater pumps recirc valves are throttled to ~1gal/rpm
T1, T2, T3, T4, T5, T6 set to false.
T6 = Reactor Trip

Event No.	Malf. No.	Value/ Ramp Time	Event Description
1			Commence Power escalation to 10% power for turbine sync.
2	DI_HS_4966_1 DI_HS_4966_2 DO_HS_4966_G DO_HS_4966_R Trigger = T1	True False Off Off	2P-109B reactor makeup water pump trips
3	NIALINEPWR Trigger = T2	200%	'A' Nuclear Instrument (NI) fails high. Tech Spec for SRO.
4	XCV2LT4861 Trigger = T3	100%	Volume Control Tank (VCT) level transmitter fails high.
5	DI_C40_S72B K04-C01 K07-C01 Trigger = T4 ESFCIAS1	True ON ON	Inadvertent Containment Isolation Actuation Signal (CIAS) on the Green Train. Tech Spec for SRO.
6	RCP2P32DUPP RCP2P32DMID RCP2P32DLOW RCSLOCATCD Trigger = T5	100% 100%/ delay = 5 min. 100%/ delay 5 min. 180 gpm/ delay 5 min.	'D' RCP seals fail and a 150 gpm RCS leak starts.
7	CEA15STUCK CEA31STUCK Trigger = T6	0% 0%	Control Element Assembly's (CEA) 15 and 31 fail to fully insert during the reactor trip.
8	SIS2P89AX	35%	2P-89A High Pressure Safety Injection (HPSI) pump has degraded performance.

Simulator Operator CUEs		
Cued by lead examiner	Trigger T1	2P-109B reactor makeup water pump trips
Cue: If contacted as NLO to close 2CVC-61A then wait one minute and report 2CVC-61A is closed. Cue: If contacted as NLO to open 2CVC-61A then wait one minute and report 2CVC-61A is open. Cue: If contacted as NLO to backseat 2CVC-61A then report 2CVC-61A is back seated. Cue: When contacted as the WWM, then report that the planners will start planning a work package to repair the reactor make up pump.		
Cued by lead examiner	Trigger T2	'A' Nuclear Instrument (NI) fails high. Tech Spec for SRO.
Cue: When contacted as the WWM, then report that I&C will start planning a work package to repair the failed nuclear instrument.		
Cued by lead examiner	Trigger T3	Volume Control Tank (VCT) level transmitter fails high.
Cue: If contacted as NLO to assess 2LT-4861, then report everything looks normal at the transmitter. Cue: When contacted as the WWM, then report I&C will start planning a work package to repair the failed instrument.		
Cued by lead examiner	Trigger T4	Inadvertent Containment Isolation Actuation Signal (CIAS) on the Green Train. Tech Spec for SRO.
Cue: If the contacted as the WWM, then report that I&C will start investigating the inadvertent CIAS Cue: When contacted as the WWM, then report I&C will monitor CEDM coil temperatures.		
Cued by lead examiner	Trigger T5	'D' RCP seals fail and a 150 gpm RCS leak starts.
	Trigger = Rx trip.	Control Element Assembly's (CEA) 15 and 31 fail to fully insert during the reactor trip.
		2P-89A High Pressure Safety Injection (HPSI) pump has degraded performance.
Cue: If contacted as the WCO, then report after 2 min that 2P-89A vibrations are high, casing is extremely hot and it is making an abnormal noise.		

Op-Test No.: 2012-1	Scenario No.: 3	Event No.: 1
Event Description: Plant power escalation from ~ 4%.		

Time	Position	Applicant's Actions or Behavior
T=0	Examiner note: Crew will conduct Reactivity Management Brief per COPD-030 prior to reaching to simulator and may elect to conduct a short re-focus brief in the simulator.	
	SRO	Direct applicable actions of OP, 2102.004 Power Operations.
Procedure Note: • Steps may be performed in any order as plant conditions allow. • Plant parameters may be monitored using Exhibit 2, Various Parameters Vs Reactor Power. • Boron adjustment data for power change may be obtained from Reactivity curves located in Plant Data book. • Applicable steps in this section would be performed following removal of Main Turbine Generator from grid with Reactor maintained critical.		
	SRO/ATC	* 8.3 During power escalation, use Attachment A of this procedure for ASI control.
	SRO/ATC	* 8.4 IF any Group 6 or P CEA RSPT inoperable due to spiking, T-Mod, etc., THEN refer to CPC/CEAC Operations (2105.001) to perform the following as required: • IF Group 6 or P must be inserted below 138.58 inches AND all inoperable RSPTs in group input to same CEAC,THEN place affected CEAC in INOP in all operable CPCs. • IF Group 6 or P must be inserted below 138.58 inches AND inoperable RSPTs in group input to BOTH CEACs,THEN perform the following: - Place BOTH CEACs in INOP in ALL operable CPCs - Restrict usage to Group 6 in accordance with TS 3.1.3.6. • IF Group 6 or P insertion required due to a transient condition before CEACs can be placed in INOP, THEN declare affected CEACs inoperable when group inserted below 138.58 inches.
	ATC	8.8 Commence raising power by performing the following as necessary: • Dilution using Chemical Addition (2104.003). • CEA withdrawal using CEDMCS Control System Operation (2105.009).

Op-Test No.: 2012-1 Scenario No.: 3 Event No.: 1

Event Description: Plant power escalation from ~ 4%.

2105.009 Procedure note:

- CEA SELECTED indicates selected CEA position.
- GROUP SELECTED indicates average position of selected group.
- If $\geq$ 6 inch deviation occurs in any regulating group, then rod motion is inhibited by PMS CEA sequencing

1.0 IF moving CEAs in group,
THEN perform the following at 2C03:

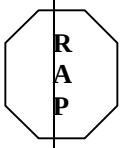
1.1 Place Group Select switch to desired group position.

1.2 IF moving Group P CEAs, THEN place P Group Select switch to P.

1.3 Ensure Individual CEA Selection switches aligned to CEA in group selected to move.

1.4 Place Mode Select switch to MANUAL GROUP (MG) or MANUAL SEQUENTIAL (MS).

*1.5 Observe CEAC and Pulse Counter CEA position indications to verify CEA motion and alignment as CEAs are moved.



1.6 Position groups as desired using Manual Control lever.

1.7 Place Mode Select switch to OFF.

1.8 Verify Pulse Counter and CEAC indications match.

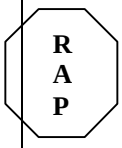
2.0 IF moving CEA individually,
THEN perform the following:

2.1 Verify Group Select switch selected to group containing individual CEA.

2.2 Place Individual CEA Selection switches to desired CEA.

2.3 Place Mode Select switch to MANUAL INDIVIDUAL (MI).

*2.4 Observe CEAC and Pulse Counter CEA position indications to verify CEA motion and alignment as CEAs are moved.



2.5 Position CEA as desired using Manual Control lever.

2.6 WHEN individual CEA movement complete,
THEN place Mode Select switch to OFF.

2.7 Verify Pulse Counter and CEAC indications match.

Procedure Caution: The following section has been determined to have a Reactivity Addition Potential (RAP) and this activity is classified as a Risk Level R3.

Op-Test No.: 2012-1	Scenario No.: 3	Event No.: 1
Event Description: Plant power escalation from ~ 4%.		

		OP-2104.003, Chemical Addition Exhibit 2 for dilution. 1.0 Verify EITHER Reactor Makeup pump (2P-109A OR 2P-109B) running. 2.0 Verify Mode Select switch (2HS-4928) in DILUTE. 3.0 Verify Reactor Makeup Water Flow controller (2FIC-4927) set up as follows: • In MANUAL OR AUTO. • Demand set to less than Charging flow. 4.0 Verify VCT Makeup Isol valve (2CV-4941-2) open. 5.0 Operate Reactor Makeup Water Flow Batch controller (2FQIS-4927) as follows: 5.1 Depress Red pushbutton. 5.2 Verify 2FQIS-4927 set for desired quantity. 5.3 Verify 2FIC-4927 indicates desired flow rate. * 6.0 Monitor the following parameters: • RCS Tave • Axial Shape Index • Reactor power 7.0 IF desired to terminate dilution, THEN reset 2FQIS-4927 to zero. 8.0 WHEN 2FQIS-4927 at zero, THEN verify the following: • RMW Flow Control valve (2CV-4927) closes. • No flow indicated on 2FIC-4927. 9.0 Repeat steps 5.0 through 8.0 as required. 10.0 Close 2CV-4941-2. 11.0 Verify 2FQIS-4927 Batch Volume placard updated to current batch volume.

Op-Test No.: 2012-1	Scenario No.: 3	Event No.: 1
Event Description: Plant power escalation from ~ 4%.		
	ANY	* 8.9 Monitor CPC Raw Powers using PQASI screen on PMS.
	BOP	* 8.12 Maintain the following limits while Raising power using Turbine Generator Operations (2106.009) OR SDBCS: • Tref within ± 2°F of program Tave (Exhibit 1, TAVE VS TREF). • Power escalation limits of Attachment A of this procedure.
	SRO	8.13 WHEN Reactor power greater than 5%, THEN perform the following: (N/A if Mode 2 was not entered) • Verify PMS Mode correct on Plant Mode Assignment (PMA). • Record entry into Mode 1 in Station log. • Make open item Station Log entry; "RCS Lithium required to be within its proper control band within the next 24 hours - _____/_____." Time Date • Make Shift Relief Sheet entry; "RCS Lithium required to be within its proper control band within the next 24 hours - _____/_____." Time Date
	ANY	8.15 Verify Emergency Feedwater NOT in service: • 2P-7A • 2P-7B
	ANY	8.16 Verify Auxiliary Feedwater (2P-75) NOT in service.
	ANY	8.17 Prior to exceeding 10% power, lock closed EFW Pumps Suction from S/U & Blowdown DI (2EFW-0706). • Verify 2EFW-0706 closed using indication on 2C33.

Op-Test No.: 2012-1	Scenario No.: 3	Event No.: 1
Event Description: Plant power escalation from ~ 4%.		
		8.18 Perform the following prior to exceeding 10% raw neutron flux average power on any CPC: 8.18.1 IF PQASI (PID 266) < ± 0.4 on ALL operable CPCs, THEN power escalation may continue. 8.18.2 IF PQASI (PID 266) > ± 0.4 on ANY operable CPC, THEN raise power as directed by Shift Manager and Reactor Engineering. *8.18.3 IF PQASI (PID 266) greater than + 0.44 OR less than -0.48 on any operable CPC, THEN DO NOT exceed 14% power.
Termination criteria: When reactivity manipulations are satisfied or at the discretion of the lead examiner.		

Op-Test No.: 2012-1	Scenario No.: 3	Event No.: 2
Event Description: 2P-109B reactor makeup water pump trips		

Time	Position	Applicant's Actions or Behavior
Cued by lead examiner	ANY	Announce annunciators: 2K12-J4 RMW PUMP TO BLENDER FLOW HI/LO **Examiner note: 2K12-J4 may not annunciate if the crew is not currently diluting the RCS.**
	ANY	Crew will recognize that 2P-109B has tripped.
2K12-J4 ACA steps	ATC	2.1 Check flow on 2FIC-4927.
	ANY	2.3 IF no flow indicated in MANUAL, THEN perform the following: 2.3.1 Verify Reactor Makeup Water pump (2P-109A or 2P-109B) running using Chemical Addition (2104.003).
	ATC	**NOTE** 2P-109 pumps are normally run in manual with one pump handswitch in START and the other in STOP. 2P-109 Select switch (2HS-4967) position is only applicable if the selected pump handswitch in is AUTO. If in AUTO the pump would be started by the Makeup Mode select switch (2HS-4928) 13.1 IF BOTH Reactor Makeup Water pumps (2P-109A AND 2P-109B) secured, THEN perform the following to start selected pump:
	ANY	Direct NLO to close valve locally. 13.1.1 Close Discharge Stop Check for pump to be started: • 2P-109A (2CVC-61A) • 2P-109B (2CVC-61B)
Cue: If contacted as NLO to close 2CVC-61A then wait one minute and report 2CVC-61A is closed.		
	ATC	13.1.2 Place 2P-109 Pump Select switch (2HS-4967) to pump that will NOT be started.

	ATC	13.1.3 Verify handswitch for pump NOT being started in STOP: • 2P-109A (2HS-4965) • 2P-109B (2HS-4966)
	ATC	13.1.4 Start selected pump by placing handswitch to START: • 2P-109A (2HS-4965) • 2P-109B (2HS-4966)
	ANY	Direct NLO to close valve locally. 13.1.5 Slowly open pump Discharge Stop Check for pump started: • 2P-109A (2CVC-61A) • 2P-109B (2CVC-61B)
	ANY	Direct NLO to back seat 2CVC-61A 13.1.6 WHEN header pressurized, THEN fully open AND backseat selected Discharge Stop Check to prevent it from vibrating closed: • 2P-109A (2CVC-61A) • 2P-109B (2CVC-61B)
Cue: If contacted as NLO to open 2CVC-61A then wait one minute and report 2CVC-61A is open. **Cue: If contacted as NLO to backseat 2CVC-61A then report 2CVC-61A is back seated.**		
	SRO	8. Notify WWM of Nuclear Instrument malfunctions.
Cue: When contacted as the WWM, then report that the planners will start planning a work package to repair the reactor make up pump.		
Termination criteria: When 2P-109A reactor make up water pump has been started or at lead examiner's discretion.		

Op-Test No.: 2012-1	Scenario No.: 3	Event No.: 3
Event Description: 'A' Nuclear Instrument (NI) fails high. Tech Spec for SRO.		

Time	Position	Applicant's Actions or Behavior
Cued by lead examiner	ANY	Announce annunciators: 2K04-A4 CH A RPS/ESF/PRETRIP/TRIP 2K04-B3 PPS Channel TRIP 2K04 H4 CPC channel sensor failure
	ANY	Crew will recognize that 'A' excore has failed High.
	SRO	Enter and Implement AOP 2203.026, NI Malfunction.
	ANY	1. Check at least TWO Linear Safety channels operable.
	ANY	2. Check ALL Linear Safety channels operable. **(Channel 'A' will not be operable)**
	SRO	2. IF ALL Linear Safety channels NOT operable, THEN perform the following: A. Refer to TS 3.3.1.1, Reactor Protective Instrumentation. **Examiner note: SRO must enter Tech Spec 3.3.1.1 action 2**
	BOP	C. IF ONLY ONE channel failed, THEN verify the following trip functions bypassed: • Hi Linear Power {1} • High LPD {3} • Low DNBR {4}
	SRO	D. GO TO Step 4.
	ANY	4. Check ALL Log Power channels operable. **(Channel 'A' will not be operable)**
	SRO	4. IF ALL Log Power channels NOT operable, THEN perform the following: A. IF Log Power channel #2 failed, THEN refer to TS 3.3.3.5, Remote Shutdown Instrumentation. B. Refer to TS 3.3.1.1, Reactor Protective Instrumentation. **Examiner note: Tech Spec 3.3.3.5 is not applicable.**

	BOP	D. IF ONLY ONE Log Power channel failed, AND associated Linear Safety channel failed, THEN verify the following trip functions bypassed: • Hi Linear Power {1} • Hi Log Power {2} • High LPD {3} • Low DNBR {4}
	BOP	Bypass the points 1, 2, 3, and 4 on Channel A IAW 2105.001 CPC/CEAC operations section 11: 11.1 Refer to Tech Spec 3.3.1.1, 3.3.2.1, 3.3.3.5, 3.3.3.6 and TRM 3.3.1.1. 11.2 Circle channel and functional units (points) to be bypassed below: Channel to be bypassed: (A) B C D Points to be bypassed: (1 2 3 4) 5 6 7 8 9 10 11 12 13 16 17 18 19 20 11.3 Enter appropriate Tech Spec/TRM actions. 11.4 Verify points to be bypassed NOT bypassed in ANY other channel. 11.5 Place desired points in BYPASS for selected channel on 2C23. **Examiners Note: Key 12 required.**
	SRO	8. Notify I&C of Nuclear Instrument malfunctions.
Cue: When contacted as the WWM, then report that I&C will start planning a work package to repair the failed nuclear instrument.		
Termination criteria: Affected channel points placed in bypass or at lead examiner's discretion.		

Op-Test No.: 2012-1	Scenario No.: 3	Event No.: 4
Event Description: Volume Control Tank (VCT) level transmitter fails high.		

Time	Position	Applicant's Actions or Behavior
Cued by lead examiner	ATC	Report alarm 2K12-H5 VCT 2T4 LEVEL HI LO Or Recognize VCT level lowering or 2LT-4861 failed hi. **Examiner Note: The crew may notice VCT level lowering or that the transmitter is failed hi prior to receiving VCT level lo alarm..**
2K-12 H5 ACA guidance.	ANY	2.1 Check level on 2LIS-4857 and Computer Points (L4857 and L4861).
	ANY	2.2 IF HIGH Level, THEN perform the following: **Examiner Note: The crew should determine that L4861 is failed high and L4857 is reading accurately (trending down)**
	ATC	2.3 IF LOW Level, THEN perform the following: 2.3.1 Verify VCT Bypass to BMS (2CV-4826) aligned to VCT.
	ANY	2.3.2 IF Pressurizer level lowering, THEN GO TO Excess RCS Leakage (2203.016). 2.3.3 IF Pressurizer level rising, THEN verify proper letdown flow. Refer to Chemical and Volume Control (2104.002). **Examiner Note: PZR level should be stable at setpoint.**
	ATC	2.3.4 Makeup to VCT using Chemical Addition (2104.003).
	SRO	Contact Work Week Manager to investigate/ repair 2LT-4861 VCT level transmitter.

Examiner note: 2LT-4861 also controls the VCT LO LO level alarm as well as the re-alignment of Charging pump suction from the VCT to the RWT.

Cue: If contacted as NLO to assess 2LT-4861, then report everything looks normal at the transmitter.

Cue: When contacted as the WWM, then report I&C will start planning a work package to repair the failed instrument.

Termination criteria: When 2CV-4826 placed in the VCT position or at lead examiner's discretion.

Op-Test No.: 2012-1 Scenario No.: 3 Event No.: 5

Event Description: Inadvertent Containment Isolation Actuation Signal (CIAS) on the Green Train. Tech Spec for SRO.

Time	Position	Applicant's Actions or Behavior
Cued by lead examiner	ANY	Announce alarms for CIAS ACT 2K04-C1 and 2K07-C1 and CCW DISCH FLOW LO 2K-11 A1, A3, A5, A7
Examiner note: CCW DISCH FLOW LO alarm is an entry criteria to both RCP emergencies and Inadvertent CIAS. The SRO may enter RCP emergencies to restore CCW to the RCPs but after restoration of CCW to the RCPs, the SRO should complete the actions in Inadvertent CIAS		
	SRO	Enter and Implement AOP 2203.039, Inadvertent CIAS.
	SRO	*1. IF Reactor tripped, THEN verify 2202.001, Standard Post Trip Actions complete. **Examiner note: The Reactor will not be tripped.**
	SRO	2. Record start time. _____
	ANY	3. Check CNTMT pressure has NOT exceeded 18.3 psia.
	SRO	*4. IF CCW to RCPs can NOT be restored within 10 minutes, THEN perform the following: **Examiner note: The SRO will pass by this step to restore CCW to the RCPs.**
	ANY	5. Restore CCW to RCPs as follows: A. Check ALL Controlled Bleedoff temperatures less than 180°F.
Critical Task: Restore CCW to RCPs within 10 minutes.	BOP	B. Restore CCW to RCPs as follows: 1) Override and open RCP CCW Supply valve (2CV-5236-1). 2) Override and open RCP CCW Return valve (2CV-5254-2). 3) Override and open RCP CCW Return Header Isolation valve (2CV-5255-1).
	SRO	C. Refer to Tech Spec 3.6.3.1, Containment Isolation Valves. **Examiner note: The SRO must enter 3.6.3.1 for Containment Isolation Valves due to the CCW to RCP valves being overridden which renders the ability to close inoperable.**

Op-Test No.: 2012-1 Scenario No.: 3 Event No.: 5

Event Description: Inadvertent Containment Isolation Actuation Signal (CIAS) on the Green Train. Tech Spec for SRO.

Time	Position	Applicant's Actions or Behavior
	ANY	*6. Check ALL RCP bearing and motor temperature annunciators clear: • "UPPER THRUST BRG METAL TEMP HI" (2K11-B1/B3/B5/B7). • "LOWER THRUST BRG METAL TEMP HI" (2K11-B2/B4/B6/B8). • "STATOR WDG TEMP HI" (2K11-A2/A4/A6/A8).
	ANY	*7. Minimize CEA movement.
	ATC	*8. Maintain PZR Level within 5% of setpoint as follows: A. Cycle Charging pumps as needed. B. Record charging header data using 2202.010, Standard Attachment 44, Charging Header Data.
	ATC	*9. Maintain VCT level 60 to 75%, refer to 2104.003, Chemical Addition.
	ANY	*10. Check CNTMT temperature and pressure stable. **Examiner note: CNTMT temperature and pressure will be rising due to chilled water isolation.**
	BOP	*10. IF CNTMT temperature OR pressure rising, THEN perform the following: A. Verify CNTMT Coolers aligned as follows: 1) ALL available CNTMT Cooling fans running: • 2VSF-1A • 2VSF-1B • 2VSF-1C • 2VSF-1D 2) BOTH SW Cooling Inlet valves open: • 2CV-1511-1 • 2CV-1510-2 3) BOTH SW Cooling Outlet valves open: • 2CV-1519-1 • 2CV-1513-2
	ANY	B. Refer to TS 3.6.1.4 Internal Pressure, Air Temperature and Relative Humidity.

Op-Test No.: 2012-1 Scenario No.: 3 Event No.: 5

Event Description: Inadvertent Containment Isolation Actuation Signal (CIAS) on the Green Train. Tech Spec for SRO.

Time	Position	Applicant's Actions or Behavior
	SRO	11. Reset CIAS on PPS panels as follows: **Examiner note: CIAS inadvertently actuated thus can not be reset by the operators, they may attempt to reset CIAS but it will not reset.**
Examiner note: 2C-39 ESFAS panel in to fully modeled in the simulator. If the applicant tries to assess the status of the panel then give them the following cue. **Examiner Cue: If the applicant tries to assess 2C-39 ESFAS panel then inform the applicant that all the light on 2C-39 are on.**		
Cue: If the contacted as the WWM, then report that I&C will start investigating the inadvertent CIAS		
	SRO	11. IF CIAS actuation can NOT be reset, THEN GO TO Step 13.
	SRO	13. IF CIAS actuation can NOT be reset, THEN perform the following: A. Check Plant in Mode 1 or 2.
	ATC	B. Minimize CEA movement. C. Notify I&C to monitor CEDM coil temperatures. D. IF I&C NOT available, THEN refer to 2105.009 Exhibit #2, CEA #01 Upper Gripper Coil Temperature Measurement to determine CEDM coil temperatures. E. Contact System Engineer for assistance. F. IF coil temperatures are projected to be >450°F for an extended period AND restoration of CEDM Cooling is NOT imminent, THEN commence a Plant Shutdown. G. IF CEDM System Engineer NOT available, AND coil temperatures exceed 500°F, THEN perform the following: 1) Trip Reactor. 2) GO TO 2202.001, Standard Post Trip Actions. H. WHEN CIAS has been reset, THEN continue with this procedure.
Termination Criteria: When Service water has been aligned to the CNTMT coolers or at the discretion of the lead examiner.		

Op-Test No.: 2012-1	Scenario No.: 3	Event No.: 6 & 7

Event Description: 'D' RCP seals fail and a 180 gpm RCS leak starts, and Control Element Assembly's (CEA) 15 and 31 fail to fully insert during the reactor trip.

Time	Position	Applicant's Actions or Behavior
Cued by lead examiner	ANY	Announce 2K-11 G-3 RCP bleedoff flow hi lo alarm.
	ANY	Determine that 'D' RCP is the affected RCP and one seal is failed.
	SRO	Enter and Implement AOP 2203.025, RCP Emergencies.
	SRO	*1. Check the following criteria for EACH RCP satisfied: D. Seal Stage ΔP greater than 50 psid.
	SRO	D. GO TO Step 5.
	ANY	*5. Check ΔP across EACH RCP Seal stage greater than 50 psid.
	ANY	*5. Perform the following: A. IF ONLY ONE stage failed, THEN perform the following: 1) Monitor RCP Controlled Bleedoff flow and temperature. 2) Notify Operations Management. **Examiner note: The other two RCP seals will fail after a 5 minute delay.**
Critical Task: Securing 'D' RCP within 10 minutes of the reactor trip.	ATC	C. IF THREE or more stages failed on ONE pump, THEN perform the following: 1) IF in Mode 1 OR 2, THEN trip Reactor. 2) Stop any affected RCP.
	ATC	3) IF only one RCP affected, AND desired to balance reactor coolant loop temperatures, THEN verify one RCP secured in each loop.
	ATC	4) IF RCP 2P32A OR 2P32B stopped, THEN verify associated PZR Spray valve in MANUAL and closed: • 2CV-4651 • 2CV-4652
	ALL	5) IF Reactor was manually tripped, THEN GO TO 2202.001, Standard Post Trip Actions.

Op-Test No.: 2012-1 Scenario No.: 3 Event No.: 6 & 7

Event Description: 'D' RCP seals fail and a 180 gpm RCS leak starts, and Control Element Assembly's (CEA) 15 and 31 fail to fully insert during the reactor trip.

Time	Position	Applicant's Actions or Behavior
	SRO	Enter and implement EOP 2202.001, Standard Post Trip Actions.
	SRO	1. Notify Control Board Operators to monitor safety functions using Exhibit 7, CBO Reactor Trip Checklist. 2. Open Safety Function Tracking page.
Reactivity control safety function	ATC	3. Check Reactivity Control established as follows: _____A. Reactor power lowering. _____B. ALL CEAs fully inserted by observing ANY of the following: 1) CEA Rod bottom lights illuminated. 2) CEAC 1 indicates ALL CEAs fully inserted. 3) CEAC 2 indicates ALL CEAs fully inserted. **(Not met due to Event #7, perform contingency)**
Reactivity control safety function	SRO	Direct ATC to perform emergency boration in progress using Exhibit 1, Emergency Boration. _____B. Verify emergency boration in progress using Exhibit 1, Emergency Boration. **Examiner note: The SRO may discuss Tech Spec 3.1.1.1 for Shutdown Margin.**
Emergency Boration **Critical Task: Emergency Boration must be started prior to completion of SPTAs**	ATC	1. Select ONE of the following Emergency Boration flowpaths: **FLOWPATH** — **ACTIONS REQUIRED** A. Gravity Feed — A. Verify at least ONE BAM Tank Gravity Feed valve open: • 2CV-4920-1 • 2CV-4921-1 B. BAM pumps — B. 1) Start at least ONE BAM pump. 2) Open Emergency Borate valve (2CV-4916-2). 3) Verify Boric Acid Makeup Flow Control valve (2CV-4926) closed. C. RWT to Charging pumps — C. Open Charging Pump Suction Source From RWT valve (2CV-4950-2).

Op-Test No.: 2012-1 Scenario No.: 3 Event No.: 6 & 7

Event Description: 'D' RCP seals fail and a 180 gpm RCS leak starts, and Control Element Assembly's (CEA) 15 and 31 fail to fully insert during the reactor trip.

Time	Position	Applicant's Actions or Behavior
Emergency Boration	ATC	2. Close VCT Outlet valve (2CV-4873-1).
	ATC	4. Verify Reactor Makeup Water Flow Control valve (2CV-4927) closed. 5. Verify at least ONE Charging pump running and charging header flow greater than 40 gpm.
Vital Auxiliaries safety function	BOP	4. Check Maintenance of Vital Auxiliaries satisfied: A. Check Main Turbine tripped by BOTH of the following: • ALL Main Stop Valves closed. • Generator megawatts indicate zero. B. Generator Output breakers open. **(Generator output breakers will be closed due to plant alignment, perform contingency to open them)** C. Exciter Field breaker open. D. Check the following valves closed: • MSR 2E-12A Steam Supply From SG A (2CV-0400) • MSR 2E-12B Steam Supply From SG B (2CV-0460) E. At least ONE 6900v AC bus energized F. At least ONE 4160v Non-vital AC bus energized. G. BOTH 4160v Vital AC buses energized. H. BOTH DGs secured. I. At least ONE 125v Vital DC bus energized: 2D01 - SPDS point E2D01 2D02 - SPDS point E2D02

Op-Test No.: 2012-1 Scenario No.: 3 Event No.: 6 & 7

Event Description: 'D' RCP seals fail and a 180 gpm RCS leak starts, and Control Element Assembly's (CEA) 15 and 31 fail to fully insert during the reactor trip.

Time	Position	Applicant's Actions or Behavior
RCS Inventory Control Safety function	ATC	5. Check RCS Inventory Control established as follows: A. PZR level: • 10 to 80%. • Trending to setpoint. **(Will not be met due to LOCA Event #6, perform contingency)** B. RCS MTS 30°F or greater.
RCS Inventory Control Safety function	SRO	Direct the following as necessary: A. Perform as necessary: 1) IF SIAS actuated on PPS inserts, THEN **GO TO** Step 6. 2) Verify PZR Level Control system restoring level to setpoint.
RCS Pressure Control Safety function	BOP	6. Check RCS Pressure Control: — • 1800 to 2250 psia. — • Trending to setpoint. **(May not be met due to LOCA Event #6, perform contingency)** • Normal PZR Spray and heaters controlling pressure. • Valid CNTMT Spray NOT in progress.
RCS Pressure Control Safety function	SRO	Direct the following actions as necessary: 6. Perform as necessary: A. IF RCS pressure lowers to less than 1400 psia, THEN trip ONE RCP in EACH loop. D. IF RCP 2P32A or 2P32B stopped, THEN verify associated PZR Spray valve in MANUAL and closed. • RCP A Spray Valve (2CV-4651) • RCP B Spray Valve (2CV-4652) E. IF RCS pressure lowers to 1650 psia or less, THEN perform the following: 1) Verify SIAS actuated on PPS inserts. 2) **GO TO** Step 7. F. Verify PZR Pressure Control system restoring pressure to setpoint.

Op-Test No.: 2012-1 Scenario No.: 3 Event No.: 6 & 7

Event Description: 'D' RCP seals fail and a 180 gpm RCS leak starts, and Control Element Assembly's (CEA) 15 and 31 fail to fully insert during the reactor trip.

Time	Position	Applicant's Actions or Behavior
Core Heat Removal safety function.	ATC	7. Check Core Heat Removal by forced circulation: A. At least ONE RCP running. B. CCW flow aligned to RCPs. C. Loop delta T less than 10°F. D. RCS MTS 30°F or greater. E. Check SW aligned to CCW. F. IF SIAS or MSIS actuated, THEN maintain SW header pressure greater than 85 psig.
RCS Heat Removal Safety Function	BOP/ATC	8. Check RCS Heat Removal: A. Check SG available by BOTH of the following: • At least ONE SG level 10 to 90%. • FW maintaining SG level B. Check MFW in RTO **(MFW may not be in Reactor Trip Override (RTO) due to steam generator levels being at setpoint, and the contingencies are satisfied if steam generator levels are controlling near the setpoint)** C. Check Feedwater line intact by the following: • SG level stable or rising. • NO unexplained step changes or erratic FW flow. • NO unexplained step changes or erratic Condensate flow. D. Check SG pressure 950 to 1050 psia. E. IF desired, THEN perform the following for SDBCS Master Controller using 2105.008 Exhibit 3: 1) Place controller in Auto/Local. 2) Set setpoint at 960 psia. F. Check RCS TC 540 to 555°F.

Op-Test No.: 2012-1 Scenario No.: 3 Event No.: 6 & 7

Event Description: 'D' RCP seals fail and a 180 gpm RCS leak starts, and Control Element Assembly's (CEA) 15 and 31 fail to fully insert during the reactor trip.

Time	Position	Applicant's Actions or Behavior
Containment Safety Function	ANY	9. Check CNTMT parameters: A. Temperature and Pressure: • Temperature less than 140°F. • Pressure less than 16 psia. B. Check CNTMT Spray pumps secured. C. NO CNTMT radiation alarms or unexplained rise in activity: 1) CAMS alarms: • "CNTMT PART/GAS RAD HI/LO" annunciator (2K10-B6) clear. 2) RCS leakage alarms: • "AREA RADIATION HI/LO" annunciator (2K11-B10) clear. **(Not met due to LOCA Event #6)** • "PROC LIQUID RADIATION HI/LO" annunciator (2K11-C10) clear. 3) Check the following radiation monitors trend stable: **(Not met due to LOCA Event #6)** • CNTMT Area • CAMS • Process Liquid D. NO secondary system radiation alarms or unexplained rise in activity: 1) "SEC SYS RADIATION HI" annunciator (2K11-A10) clear. 2) Secondary Systems Radiation monitors trend stable: • Main Steam lines • SG Sample • Condenser Off Gas

Op-Test No.: 2012-1	Scenario No.: 3	Event No.: 6 & 7

Event Description: 'D' RCP seals fail and a 180 gpm RCS leak starts, and Control Element Assembly's (CEA) 15 and 31 fail to fully insert during the reactor trip.

Time	Position	Applicant's Actions or Behavior
	SRO	10. Notify STA to report to control room. 11. Direct NLOs to perform 2202.010 Attachment 47, Field Operator Post Trip Actions. 12. Verify Reactor trip announced on Plant page. 13. Notify SM to refer to Technical Specifications and 1903.010, Emergency Action Level Classification.
Cue: If contacted as the STA to report to the control room, acknowledge the request. Cue: If contacted as a NLO to perform Attachment 47 Field Operator Post Trip Actions, acknowledge request.		
	SRO	14. Direct control board operators to acknowledge ALL annunciators and announce ALL critical alarms.
	SRO	15. Check ALL safety function acceptance criteria satisfied. **(All safety functions are not satisfied, perform contingency)** 15. IF ANY safety function acceptance criteria NOT satisfied, THEN perform the following: A. Notify control room staff of safety functions NOT satisfied. B. GO TO Exhibit 8, Diagnostic Actions.
	SRO	Diagnose Loss of Coolant Accident EOP 2202.003 or Excess RCS leakage AOP 2203.016 depending SIAS is actuated.
	SRO	If Excess RCS leakage is diagnosed, Enter and perform floating step # 9
	SRO	■ 9. IF RCS leakage greater than 44 gpm AND in Mode 3, 4, OR 5, THEN perform the following:
	ATC/BOP	B. Actuate SIAS. C. Actuate CCAS.
	SRO	D. GO TO 2202.010 Exhibit 8, Diagnostic Actions.
Examiner note: The SRO may discuss Tech Spec 3.4.6.2 for RCS leakage.		
	SRO	Enter and implement Loss of Coolant Accident EOP 2202.003

Op-Test No.: 2012-1 Scenario No.: 3 Event No.: 6 & 7

Event Description: 'D' RCP seals fail and a 180 gpm RCS leak starts, and Control Element Assembly's (CEA) 15 and 31 fail to fully insert during the reactor trip.

Time	Position	Applicant's Actions or Behavior
	SRO	* 1. Confirm diagnosis of LOCA as follows: A. Check SFSC acceptance criteria satisfied every 15 minutes. **(Normally performed by the STA)** B. IF CCW in service to provide SG Sample Cooler cooling, THEN perform the following: 1) Verify SG Sample valves open. • 2CV-5852-2 • 2CV-5859-2 • 2CV-5850 • 2CV-5858 2) Notify Chemistry to sample SGs for activity. C. IF SGs indicate primary to secondary leakage within TS limits, THEN continue with this procedure using SG with lowest leak rate for cooldown.
Cue: When contacted as Chemistry, then report you will sample both S/G for activity.		
	SRO	* 2. Notify SM to refer to Technical Specifications and 1903.010, Emergency Action Level Classification.
	SRO	3. Open Placekeeping Page.
	SRO	4. Record present time: • Time _____
	ANY	5. Verify SIAS and CCAS actuated on PPS inserts.
	SRO	6. Notify Control Board Operators to perform the following: A. Monitor floating steps. B. Verify actuated ESFAS components using 2202.010, Exhibit 9, ESFAS Actuation.
	ANY	*7. Check CCW aligned to RCPs.
	ANY	■8. Check RCS pressure greater than 1400 psia. **(May not be met, if not met perform contingency if required)**

Op-Test No.: 2012-1 Scenario No.: 3 Event No.: 6 & 7

Event Description: 'D' RCP seals fail and a 180 gpm RCS leak starts, and Control Element Assembly's (CEA) 15 and 31 fail to fully insert during the reactor trip.

Time	Position	Applicant's Actions or Behavior
	ANY	■8. Perform the following: A. IF RCS pressure less than 1400 psia, THEN perform the following: 1) Verify maximum of ONE RCP running in EACH loop. 2) IF RCP 2P32A or 2P32B stopped, THEN verify associated PZR Spray valve in MANUAL and closed. B. IF NPSH requirements violated OR RCS MTS less than 30°F, THEN perform the following: 1) Stop ALL RCPs. 2) Verify BOTH PZR Spray valves in MANUAL and closed.
	ANY	■9. Restore ESF/Non-ESF systems post-SIAS as follows: A. Verify at least ONE SW pump running on EACH loop.
	ANY	B. Verify DG SW Outlet valves open.
	ANY	C. Verify SW pump suction aligned to Lake.
	ANY	D. Check 4160v Non-vital bus 2A1 or 2A2 energized from offsite power.
	ANY	E. Check 4160v Vital buses 2A3 AND 2A4 energized from offsite power.
	BOP	F. Start SW pumps as needed to maintain SW header pressure.
	ANY	G. Check SW to CCW restored. **(Not met, perform contingency)**
	BOP	G. IF CCW available, THEN restore SW to CCW, refer to 2202.010 Exhibit 5, CCW/ACW/SW Alignment.
	ANY	H. Check ACW restored. **(Not met, perform contingency)**
	BOP	H. Restore SW to ACW, refer to 2202.010 Exhibit 5, CCW/ACW/SW Alignment.
	BOP	I. Maintain SW header pressure greater than 85 psig.
	ANY	*10. Verify Safety Injection flow to RCS as follows: A. Check total HPSI flow acceptable using 2202.010 Exhibit 2, HPSI Flow Curve. B. Check total LPSI flow acceptable using 2202.010 Exhibit 3, LPSI Flow Curve.

Op-Test No.: 2012-1	Scenario No.: 3	Event No.: 6 & 7

Event Description: 'D' RCP seals fail and a 180 gpm RCS leak starts, and Control Element Assembly's (CEA) 15 and 31 fail to fully insert during the reactor trip.

Time	Position	Applicant's Actions or Behavior
	ANY	■11. Check SG levels greater than 22.2%.
	BOP	12. Align feedwater as follows: A. Verify EFW pump 2P7B capable of feeding intact SG using 2202.010 Attachment 46, Establishing EFW Flow.
	BOP	B. Stop EFW pump 2P7A by overriding and closing (2CV-0340-2). C. Verify running MFW pump secured. D. Verify ALL MFW Block valves closed.
	ANY	13. Isolate LOCA as follows: A. Check for intact CCW system: • "PROC LIQUID RADIATION HI/LO" annunciator (2K11-C10) clear. • CCW Surge Tanks level stable.
	ANY	B. Verify non-actuated valve positions using 2202.010 Attachment 17, LOCA Isolation. **Examiner note: The SRO may elect to prioritize this attachment to be performed later in the event.**
	ANY	14. Check LOCA limited to CNTMT: • CNTMT Sump level rising. • CNTMT temperature, dewpoint, and pressure greater than pre-LOCA values. • Aux Building area radiation levels stable. • Aux Building Sump level less than 53%. • Waste Tanks 2T20A and 2T20B levels stable.
	ANY	■15. Check CNTMT isolation parameters: A. CNTMT pressure trend has NOT exceeded 18.3 psia. B. "CNTMT RADIATION HI" annunciator (2K10-A6) clear.
	ANY	■16. Check CNTMT pressure trend has NOT exceeded 23.3 psia.
	ANY	*17. IF CNTMT Spray operating, THEN terminate CNTMT Spray as follows: **Examiner note: CNTMT Spray should not be operating.**

Op-Test No.: 2012-1 Scenario No.: 3 Event No.: 6 & 7

Event Description: 'D' RCP seals fail and a 180 gpm RCS leak starts, and Control Element Assembly's (CEA) 15 and 31 fail to fully insert during the reactor trip.

Time	Position	Applicant's Actions or Behavior
	BOP	18. Verify ALL available miscellaneous CNTMT ventilation operating: A. CNTMT Building Recirculation fans: • 2VSF-31A • 2VSF-31B • 2VSF-31C • 2VSF-31D B. Reactor Cavity Cooling fans: • 2VSF-34A • 2VSF-34B C. Maximum of 3 CEDM Shroud Cooling units: • 2VSF-35A • 2VSF-35B • 2VSF-35C • 2VSF-35D
	ANY	■19. Check ALL AC and Vital DC buses energized.
	ANY	■20. Check IA pressure greater than 65 psig.
	ANY	21. Check for isolated LOCA: • RCS pressure controlled. • RCS leakage less than available Charging pump capacity. **Examiner note: LOCA is not considered isolated.**
	SRO	21. IF LOCA NOT isolated, THEN GO TO Section 3, Unisolated LOCA.
	SRO	■1. Perform controlled cooldown to 275°F TC as follows:
	ANY	A. Check RCS TC greater than 275°F.

Op-Test No.: 2012-1	Scenario No.: 3	Event No.: 6 & 7

Event Description: 'D' RCP seals fail and a 180 gpm RCS leak starts, and Control Element Assembly's (CEA) 15 and 31 fail to fully insert during the reactor trip.

Time	Position	Applicant's Actions or Behavior
	ATC	B. Reset Low PZR Pressure and Low SG Pressure setpoints during cooldown and depressurization. C. Verify maximum of ONE RCP running in EACH loop. D. IF RCP 2P32A or 2P32B stopped, THEN verify associated PZR Spray valve in MANUAL and closed. E. Monitor cooldown rate as follows: • Record RCS TC and PZR temperature using 2202.010 Attachment 8, RCS Cooldown Table. • Plot RCS pressure versus RCS TC using 2202.010 Attachment 1, P-T Limits every 15 minutes. F. Initiate RCS cooldown using SDBCS bypass valves or ADVs.
	BOP	G. Control S/G levels with EFW or AFW using 2202.010 Attachment 46, Establishing EFW Flow. H. Secure running MFW pump. I. Close ALL MFW Block valves. J. Verify maximum of one condensate pump in service. K. Maintain condensate header pressure less than 700 psig using condensate pump recircs and MFW pump recircs.
Termination criteria: When the need for a cooldown has been determined or at the discretion of the lead examiner.		

Op-Test No.: 2012-1	Scenario No.: 3	Event No.: 8
Event Description: 2P-89A High Pressure Safety Injection (HPSI) pump has degraded performance.		

Time	Position	Applicant's Actions or Behavior
	ANY	Report that 2P-89A High pressure safety injection pump has degraded discharge pressure.
	ANY	Dispatch NLO investigate 2P-89A locally
Cue: If contacted as the WCO, then report after 2 min that 2P-89A vibrations are high, casing is extremely hot and it is making an abnormal noise.		
	SRO	Direct BOP to secure 2P-89A and start 2P-89C Or Review HPSI termination criteria and if it is met the crew may elected to just secure 2P-89A.
	BOP	Place 2P-89A in Pull to Lock and remove 2P-89C from Pull to Lock or start 2P-89C
Examiner Note: The SRO may discuss Tech Spec 3.5.2 if RCS pressure is greater than 1700 psia for 2P-89A.		
Termination criteria: When 2P-89A has been started or at examiner's discretion.		

Facility: ANO-2	Scenario No.: 4 (New)	Op-Test No.: 2012-1

Examiners:	Operators:

Initial Conditions:
100% MOL; All Engineered Safety Features systems are in standby. #3 and #4 MTG control valve steam lead valves failed closed. Voltage regulator auto tracking circuit is disabled. RED Train Maintenance Week. Main Turbine vibrations are elevated.

Turnover:
100%. 260 EFPD. EOOS indicates 'Minimal Risk'. #3 and #4 MTG control valve steam lead valves failed closed. Voltage regulator auto tracking circuit is disabled. RED Train Maintenance Week. Evolution scheduled: Reduce power to 90% to lower Main Turbine vibrations

Event No.	Malf. No.	Event Type*	Event Description
1		R (ATC) N (BOP) N (SRO)	Commence a power reduction to 90%
2	BKR126		Start Up #3 (SU3) Transformer feeder trips and will not reclose. Tech Spec for SRO
3	CV49412 CV4927 DO_CI_4927_R	C (ATC) C (SRO)	2CV-4941-2 is damaged causing to partially open. 2CV-4927 is leaking by causing a Moderator dilution event.
4	CND2P2AWND	C(BOP) C(SRO)	'A' Condensate pump motor winding degrade cause temperature to rise.
5	CVC2P36BLK	C (ATC) C (SRO)	B CCP has a 20 gpm suction leak. TRM for SRO.
6	SGBMSIVAFT ESFMSIS1 ESFMSIS2	M (ALL)	Steam leak Downstream of the MSIVs with no response to MSIS.
7	A111 A111P	M (ALL)	Start Up #2 (SU2) Feeder breaker to 2A-1 looses DC control power causes natural circulation and a loss of offsite power to Unit 2.
8	EDG1AUTOFAIL	C (BOP) C (SRO)	#1 EDG fails to auto start.

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

Total malfunctions. = 7, Malfunctions after EOP entry = 1, Abnormal events = 2, Major transient = 2,
EOPs with substantive actions =1, EOP Contingencies = 0, Critical tasks = 3.

Scenario #4 Objectives

1) Evaluate individual ability perform a down power.
2) Evaluate individual response to a loss of Start Up #3 Transformer.
3) Evaluate individual response to a Moderator Dilution event.
4) Evaluate individual response to a degraded Condensate pump.
5) Evaluate individual response to a Loss of Charging due to a suction line leak.
6) Evaluate individual response to an overcooling event in mode 1.
7) Evaluate individual response to a failure of Main Steam Isolation Signal to function.
8) Evaluate crew ability to mitigate a Loss of Offsite Power event.
9) Evaluate individual response to a failure of an EDG to auto start.

SCENARIO #4 NARRATIVE

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

When the crew has completed their control room walk down and brief, they will commence a down power to 90%.

When required reactivity manipulation is completed and cued by lead examiner; Start up #3 transformer feeder breaker will trip open and can not be reclosed. The SRO will use the Annunciator Corrective action and notify the dispatcher. The SRO will also enter Tech Spec 3.8.1.1 action a.

After the dispatcher has been notified and Tech Spec 3.8.1.1 entered and cued by lead examiner, A Moderator Dilution event will occur. The CRS should enter the Moderation Dilution event AOP, OP-2203.017. The crew should secure the running reactor make up water pump. The crew should call a NLO to investigate to check the valve lineup locally.

When the crew has secured the running reactor makeup water pump and cued by the lead examiner, ‘A’ condensate pump windings will degrade and overheat. The SRO/BOP will refer to Annunciator corrective action, OP 2203.012C. The SRO should direct starting ‘D’ condensate pump and securing ‘A’ condensate pump.

After the crew has started ‘D’ condensate pump, secured ‘A’ condensate pump, and cued by the lead examiner, a leak will start on the suction of ‘B’ charging pump. The SRO should enter the Loss of Charging AOP, OP2203.036. The ATC will isolate letdown, secure all charging, and isolate the charging pumps. The crew should call a NLO to investigate and he will report the leak is isolable. The crew should isolate the leak, vent all available charging pumps, restart charging, verify all charging suction sources available then restore letdown.

SCENARIO #4 NARRATIVE (continued)

When charging is restored and cued by the lead examiner, a Main steam line leak will start in the turbine building. The crew should notice RCS temperature lowering with reactor power rising and enter the Overcooling event in Mode 1 or 2 AOP, 2203.050. The crew should dispatch NLOs to look for a leak in the Plant. When a large leak in the turbine building is reported, the SRO should direct a reactor trip. After the crew has determined that tripping the turbine did not stop the steam leak the crew should close the MSIVs to stop an uncontrolled RCS cooldown.

The Crew will implement Standard Post Trip Actions (SPTA), OP 2202.001. When the reactor trips the DC control power breaker for 2A-111 SU2 feeder breaker will trip causing a loss of power to all non-vital buses. #1 EDG will fail to auto start and the crew should manually start #1 EDG to restore power to 2A-3. While 2A-3 is de-energized, charging will not be available due to the 'B' charging pump suction leak and loss of power. If power is not restored to 2A-3 the crew should swap 2P-36C power to green train. The BOP should control Steam Generator pressure 950 to 1050 psia using upstream dump MOVs. The ATC will control RCS will auxiliary spray.

The SRO will diagnose a Loss of Offsite Power event and enter OP 2202.007, Loss of Offsite Power. The BOP should restore power to 2A-1 using the Alternate AC diesel. The crew should evaluate the availability of offsite power sources and restore power from SU#2 to 2A2 using standard att. #29.

Simulator Instructions for Scenario 4

Reset simulator to MOL 100% power IC stead state.
Ensure that AACG is secured and annunciators clear.
Place MINIMAL RISK, Green Train Protected and RED Train Maintenance Week signs on 2C11.
#3 and #4 MTG control valve steam lead valves failed closed.
Main Turbine Vibs slightly elevated. MTGVIBINC = 8 mils
T1, T2, T3, T4, T5, T6 set to false.
T6 = Reactor Trip

Event No.	Malf. No.	Value/ Ramp Time	Event Description
1	MTGVIBINC	8 mils initial / 1 hr	Commence a power reduction to 90% When power reduction starts ramp MTGVIBINC to zero over
2	BKR126 Trigger = T1	True	Start Up #3 (SU3) Transformer feeder trips and will not reclose. Tech Spec for SRO
3	CV49412 CV4927 DO_CI_4927_R Trigger = T2	1 .135 off	2CV-4941-2 is damaged causing to partially open. 2CV-4927 is leaking by causing a Moderator dilution event.
4	CND2P2AWND Trigger = T3	True	'A' Condensate pump motor winding degrade cause temperature to rise.
5	CVC2P36BLK Trigger = T4	20 / ramp 5 min.	B CCP has a 20 gpm suction leak. TRM for SRO.
6	SGBMSIVAFT Trigger = 5 ESFMSIS1 ESFMSIS2	Value = 2/ Ramp 10 min.	Steam leak Downstream of the MSIVs with no response to MSIS.
7	A111 A111P Trigger = T6	Locked open open	Start Up #2 (SU2) Feeder breaker to 2A-1 looses DC control power causes natural circulation and a loss of offsite power to Unit 2.
8	EDG1AUTOFAIL	True	#1 EDG fails to auto start.

Simulator Operator CUEs		
At T=0		Commence a power reduction to 90%.
Cue: Acknowledge notification of power reduction as the following groups when called: Chemistry, Reactor Engineering, Radiation Protection, Little Rock Dispatcher (TOC), Woodlands Dispatcher (SPO/EMO)		
Cued by lead examiner	Trigger T1	Start Up #3 (SU3) Transformer feeder trips and will not reclose. Tech Spec for SRO
Cue: When notified as the dispatcher report that B126 opened and will not reclose. Also report that you are dispatching Entergy Arkansas to the switchyard to investing B126. If requested report that the Auto transformer is energized. **Cue: If contacted as Unit 1 report that A-111 SU2 to A1 will not go in PTL and can not be put in PTL.**		
Cued by lead examiner	Trigger T2	2CV-4941-2 is damaged causing to partially open. 2CV-4927 is leaking by causing a Moderator dilution event.
Cue: If contacted as NLO to investigate 2CV-4941-2, after approximately 2 min. report that some craft personnel accidentally ran a cart into the valve positioner and it appears open locally. Also, if asked to investigate 2CV-4927, report that 2CV-4927 appears closed locally but 2CVC-4927-3 the bypass valve is not fully closed. **Cue: If contacted as NLO to close 2CVC-4927-3, then have the booth operator remove the malfunction for 2CV-4927 and report that 2CVC-4927-3 is closed.** **Cue: If contacted as NLO to close 2CVC-4927-3, then have the booth operator remove the malfunction for 2CV-4927 and report that 2CVC-4927-3 is closed.** **Cue: When contacted as the WWM, then report that I&C maintenance will expedite repair of 2CV-4941-2.** **Cue: If contacted as NLO to verify 2BM-99 is closed after 1 min. report 2M-99 is closed.**		
Cued by lead examiner	Trigger T3	'A' Condensate pump motor winding degrade cause temperature to rise.
Cue: When contacted as NLO, wait 2 minutes and report that both Condensate pump area coolers are running will proper airflow and normal temperature. **Cue: When contacted as NLO, wait 2 minutes and report that CCW flow is properly aligned to 2P-2A.** **Cue: If contacted as NLO to perform post stop checks report that 2P-2A secured sat.** **Cue: If contacted as NLO report that you will monitor coffer dam levels.**		
Cued by lead examiner	Trigger T4	'B CCP has a 20 gpm suction leak. TRM for SRO.
Cue: If contacted as NLO to investigate 'B' charging pump wait 2 minutes, then report that the weld for the flange on suction damper for 'B' charging pump is severely cracked and water is leaking out. **Cue: If asked as NLO If the leak can be isolated the report that it can by closing 2CVC-21B and 2CVC-23B.** **Cue: When direct to vent wait 1 min. then report venting complete for 2CVC-1174, 2CVC-1175, 'A' charging pump and 'C' charging pump.** **Cue: When direct to vent wait 1 min. then report venting complete for 2CVC-1044, 2CVC-1045.**		

Cued by lead examiner	Trigger T5	Steam leak Downstream of the MSIVs. Also there is no response to MSIS.
Cue: If dispatched as a NLO then wait 15 seconds and report that the north end of the Turbine building is filling with steam.		
		Start Up #2 (SU2) Feeder breaker to 2A-1 looses DC control power causes natural circulation and a loss of offsite power to Unit 2.
Cue: If requested as NLO to monitor DG operation, wait 5 minutes and report the associated EDGs are operating properly. **Cue: If requested as NLO to assess SU2 feeder breaker to 2A-1 wait 1 minute then report that the DC control power breaker is trip free. If requested to close the DC control power breaker then report it will not stay closed.** **Cue: If requested as Unit 1 need for AAGC power report that Unit 1 does not required any AACG power.** **Cue: If contacted as the Dispatcher, then report SU2 voltage regulator 3% reduction is disabled.**		
		#1 EDG fails to auto start.

Op-Test No.: 2012-1	Scenario No.: 4	Event No.: 1
Event Description: Commence a power reduction to 90%.		

Time	Position	Applicant's Actions or Behavior
Procedure Caution: The following section has been determined to have a Reactivity Addition Potential (RAP) and this activity is classified as a Risk Level R1. For an Unplanned Reactivity Manipulation, the required controls for planned reactivity evolutions are not applicable during AOP (including ACA response) or EOP conditions IAW COPD-030.		
	SRO	12.1 IF time allows, AND Reactivity Management Brief has NOT been conducted, THEN perform a Reactivity Management Brief per COPD-030 with an SRO. **Examiner note: This step may be deemed N/A by the crew.**
Procedure Note: • Plant parameters may be monitored using Exhibit 2, Various Parameters Vs Reactor Power. • Boron adjustment data for power change may be obtained from Reactivity curves located in Plant Data book.		
	SRO	12.2 IF plant must be off-line within one hour, THEN refer to Attachment H, Rapid Power Reduction. **Examiner note: This Step is N/A**
Procedure Note: • Initially, only enough boric acid should be added to reduce power by a few percent (less than 5%). As power lowers, Xenon will start to peak causing power to drop faster. Dilution may be required to slow power reduction rate. • If one BAM Tank is out of service for Acid Reducing Chemistry, depletion of on-line BAMT during power reduction may result in TRM 3.1.2.8 entry.		
	SRO	12.3 Commence Power reduction by performing the following as necessary: • Boration using Normal Borate Mode to Charging pump suction (unless directed otherwise by Abnormal Operating Procedure) Refer to Chemical Addition (2104.003), Exhibit 3, Normal RCS Boration at Power. • CEA insertion using CEDMCS Control System Operation (2105.009), Exhibit 3 CEDMCS Operations (normally for ASI control).
	BOP	*12.4 Lower Turbine load as necessary to hold Tave within ± 2°F of program Tref using Exhibit 1, TAVE VS TREF.

Op-Test No.: 2012-1	Scenario No.: 4	Event No.: 1
Event Description: Commence a power reduction to 90%.		
	SRO	*12.5 IF any Group 6 or P CEA RSPT inoperable due to spiking, T-Mod, etc., THEN refer to CPC/CEAC Operations (2105.001) to perform the following as required: • IF Group 6 or P must be inserted below 138.58 inches AND all inoperable RSPTs in group input to same CEAC, THEN place affected CEAC in INOP in all operable CPCs. • IF Group 6 or P must be inserted below 138.58 inches AND inoperable RSPTs in group input to BOTH CEACs, THEN perform the following: - Place BOTH CEACs in INOP in ALL operable CPCs - Restrict usage to Group 6 in accordance with TS 3.1.3.6. • IF Group 6 or P insertion required due to a transient condition before CEACs can be placed in INOP, THEN declare affected CEACs inoperable when group inserted below 138.58 inches. **Examiner Note: This step is Not applicable.**
	SRO	12.6 IF plant shutdown/power reduction directed by TECH SPECS, THEN initiate ATTACHMENT L to determine mode specific time limits and continue with shutdown. **Examiner Note: This step is Not applicable.**
Procedure Note: CEAs should not be inserted below 80 inches withdrawn when the Reactor is at power and the CPC Aux trip is active. ASI would tend to shift back to the top of the core if CEAs are inserted more than halfway.		
	ATC	*12.7 Maintain ASI (PID 268) within Core Operating Limits Report (COLR) limits using CEA Group 6 or Group P.
	SRO	12.8 IF greater than 40 gpm dilution flow required to slow rate of power reduction, THEN start an additional Charging pump using Chemical and Volume Control (2104.002). **Examiner Note: This step is Not applicable.**
	SRO	*12.9 IF SU #3 available, WHEN desired to transfer electrical loads to offsite power, THEN transfer to SU #3 Transformer using Electrical System Operations (2107.001). **Examiner Note: This step is Not applicable.**
	BOP	*12.10 Throttle Condensate recircs as necessary to maintain 650-750 psig Condensate Pump Discharge pressure: • 2CV-0662 (2FIC-0662) • 2CV-0663 (2FIC-0663) **Examiner Note: The down power to 90% is not enough to require throttling the condensate recirc valves.**

Op-Test No.: 2012-1		Scenario No.: 4	Event No.: 1
Event Description: Commence a power reduction to 90%.			
Procedure Note: Do not tell Woodlands (SPO/EMO) (Power Marketing Corp.) anything other than the current status of the unit (e.g. we are going off-line). The TOC and SOC are the Entergy Transmission Organization and are responsible for monitoring the Grid System; this includes ensuring the adequacy of the ONLINE monitoring tool. Therefore, they can be given more specific information regarding the reason for the shutdown. Reference ENS-DC-201.			
	ANY	12.11	Notify the following of power reduction: • Chemistry • Reactor Engineering • Radiation Protection • Little Rock Dispatcher (TOC) • Woodlands Dispatcher (SPO/EMO)
Cue: Acknowledge notification of power reduction as the following groups when called: Chemistry, Reactor Engineering, Radiation Protection, Little Rock Dispatcher (TOC), Woodlands Dispatcher (SPO/EMO)			
	ANY	* 12.12	Perform the following for Chemistry Control: • Monitor Secondary chemistry and adjust chemical feed as needed using Secondary System Chemical Addition (2106.028). • IF reducing power less than 90%, THEN verify Primary Zinc Injection secured per ONE of the following: – Request Chemistry secure Zinc Injection per Unit 2 Reactor Coolant System (RCS) Zinc Control (1052.037) – Perform "Securing Zinc Injection" section of Chemical Addition (2104.003).
	BOP	12.13	Verify FWBSCAL selected for COLSS Secondary Calorimetric at ~ 95% (PID 177).
Termination criteria: When reactivity manipulations are satisfied or at the discretion of the lead examiner.			

Op-Test No.: 2012-1 Scenario No.: 4 Event No.: 2

Event Description: 'Start Up #3 (SU3) Transformer feeder trips and will not reclose. Tech Spec for SRO

Time	Position	Applicant's Actions or Behavior
Cued by lead examiner	ANY	Announce annunciators: 2K01-B3 STARTUP 3 SELECTED NOT AVAILABLE
	BOP	2.1 IF Lockout relay tripped, THEN evaluate standby use of SU2 using Electrical System Operations (2107.001). **Examiner Note: The BOP will investigate if the SU3 lockout relay is trip. The lockout relay will not be tripped and SU2 will be aligned to 2A-1.**
	BOP	2.2 IF Feeder Breaker handswitch in PULL TO LOCK, THEN remove as conditions allow. **Examiner Note: None of the SU3 feeder breakers will be in PTL**
	SRO	2.3 IF 6.9 KV or 4.16 KV winding undervoltage, THEN perform the following: 2.3.1 Notify dispatcher. 2.3.2 Verify Breaker l26 closed. 2.3.3 Verify Auto transformer energized.
Cue: When notified as the dispatcher report that B126 opened and will not reclose. Also report that you are dispatching Entergy Arkansas to the switchyard to investing B126. If requested report that the Auto transformer is energized.		
	SRO	The SRO should review Tech Specs and he must enter Tech Spec 3.8.1.1 action a.
	SRO	Direct operator perform Tech Spec surveillance requirement 4.8.1.1.a.1 (OP 2107.001, electrical system operations supplement 4)
Cue: If contacted as Unit 1 report that A-111 SU2 to A1 will not go in PTL and can not be put in PTL.		
Termination criteria: When the SRO has entered Tech Spec 3.8.1.1 action a or at lead examiner's discretion.		

Op-Test No.: 2012-1	Scenario No.: 4	Event No.: 3
Event Description: 2CV-4941-2 is damaged causing it to partially open. 2CV-4927 is leaking by causing a Moderator dilution event.		

Time	Position	Applicant's Actions or Behavior
Cued by lead examiner	ANY	Recognize that power is rising or recognize flow on 2FIC-4927 dilution water controller.
Cue: If contacted as NLO to investigate 2CV-4941-2, after approximately 2 min. report that some craft personnel accidentally ran a cart into the valve positioner and it appears open locally. Also, if asked to investigate 2CV-4927, report that 2CV-4927 appears closed locally but 2CVC-4927-3 the bypass valve is not fully closed.		
	SRO	Enter and implement Moderator Dilution AOP, 2203.017.
	ATC	1. Stop ALL RMW addition to RCS as follows: A. Verify RMW Flow Control valve (2CV-4927) closed. **Examiner Note: 2CV-4927 will indicate closed in the control room.**
Cue: If contacted as NLO to close 2CVC-4927-3, then have the booth operator remove the malfunction for 2CV-4927 and report that 2CVC-4927-3 is closed.		
	ATC	B. Verify VCT Makeup Isolation valve (2CV-4941-2) closed. **Examiner Note: 2CV-4941-2 will indicate open in the control room but there are no actions that will close it from the control room.**
	ATC	C. Verify ALL RMW pumps stopped. **Examiner Note: The Crew should take the more timely action of securing RMW pumps then follow up with the local actions of closing 2CVC-4927-3.**
	SRO	Contact Work Week Manager to repair the VCT make up isolation valve 2CV-4941-2.
Cue: When contacted as the WWM, then report that I&C maintenance will expedite repair of 2CV-4941-2.		
Cue: If contacted as NLO to verify 2BM-99 is closed after 1 min. report 2M-99 is closed.		
Termination criteria: When Reactor Makeup Water flow has been stopped or at lead examiner's discretion.		

Op-Test No.: 2012-1 Scenario No.: 4 Event No.: 4

Event Description: 'A' Condensate pump motor winding degrade cause temperature to rise.

Time	Position	Applicant's Actions or Behavior
Cued by lead examiner	**Examiner Note: It takes approximately ~ 5 min. the condensate pump winding temperature to alarm.**	
	ANY	Announce alarm 2K03-F6 BRG/WDG TEMP HI
	SRO/BOP	Refer to ACA for 2K03-F6 BRG/WDG TEMP HI.
	BOP	2.1 Check 2TRS-0610 to determine affected pump.
	BOP	2.2 Press ACK ALM1 on 2TRS-0610 to acknowledge alarm and allow Reflash.
	ANY	2.3 Verify Condensate Pump Area coolers running: • 2VUC-14A (2HS-8053 at 2B32-D2) • 2VUC-14B (2HS-8054 at 2B42-D3)
Cue: When contacted as NLO, wait 2 minutes and report that both Condensate pump area coolers are running will proper airflow and normal temperature.		
	ANY	2.4 Verify CCW aligned to affected pump per Component Cooling Water System Operations (2104.028).
Cue: When contacted as NLO, wait 2 minutes and report that CCW flow is properly aligned to 2P-2A.		
Procedure Note: **Four Condensate Pump Operation Limitations** • Time spent running four Condensate pumps and one Heater Drain pump is limited to 2 to 3 weeks per year (ER-ANO-2-2002-0613). • Running four Condensate pumps is NOT allowed if all ANO2 non-vital 6900V and 4160V buses are energized from SU3 (ER-ANO-2-2002-0613).		
	SRO	2.5 IF motor winding temperature rising, THEN perform the following as necessary to maintain discharge pressure > 620 psig (< 8250 gpm per running pump): • Verify Condensate Recircs [2CV-0662 (2FIC-0662)and 2CV-0663 (2FIC-0663)] closed. • Start standby Condensate pump using Condensate and Feedwater Operations (2106.016). • Lower Condensate Inlet Filter to SU/BD DI (2F-807) flow using SU & Blowdown Demineralizer Ops (2106.024). • Reduce plant power to lower total feedwater flow.

Op-Test No.: 2012-1 Scenario No.: 4 Event No.: 4

Event Description: 'A' Condensate pump motor winding degrade cause temperature to rise.

Time	Position	Applicant's Actions or Behavior
		2.6 IF unable to reduce temperature, THEN shift to standby Condensate pump.
	BOP	*7.2 Additional Condensate Pump Start 7.2.1 Verify at least ONE Condensate pump already in service.
Procedure Caution: When A1 and 2A1 are energized from SU2, Unit 2 should NOT manually start Condensate pump. (ER973922E301)		
	BOP	7.2.2 Verify EITHER of the following conditions is TRUE: • A1 NOT energized from SU2 • 2A1 NOT energized from SU2
Procedure Note: Per L&P 5.17, time spent running four condensate pumps and two heater drain pumps is limited to one hour.		
	BOP	7.2.3 IF fourth Condensate pump start, THEN verify BOTH of the following are TRUE: • Auxiliary Feedwater pump (2P-75) NOT in service (ER002344I232). • All ANO2 Non-vital 6900V and 4160V buses NOT energized from SU3 (ER-ANO-2-2002-0613).
	SRO	7.2.4 IF fourth Condensate pump start AND one Heater Drain pump (2P-8A/B) in service, THEN inform following groups of time limitation of 2 to 3 weeks in this configuration (ER-ANO-2-2002-0613): • Operations Management • Operations Work Management Liaison • Work Week Manager • Systems Engineering

Op-Test No.: 2012-1 Scenario No.: 4 Event No.: 4

Event Description: 'A' Condensate pump motor winding degrade cause temperature to rise.

Time	Position	Applicant's Actions or Behavior
	BOP	7.2.5 IF Generator Lockout tripped OR NOT reset, THEN consider the following when determining which pump to start: • IF 2P-2A running, THEN 2P-2C cannot be started. • IF 2P-2B running, THEN 2P-2D cannot be started. **Examiner Note: This step is not applicable.**
Examiner Note: Condensate motor winding temperature will be rising quickly and the crew should shift to the standby condensate pump. Also, due to the rate of rise the SRO may elect to not perform the local actions prior to start.		
Procedure Note: Steps 7.2.6 and 7.2.7 may be waived at discretion of S/M or CRS.		
	BOP	7.2.6 Verify the following for pump to be started: • Hotwell level > 24%. • Proper motor oil level (between 1/4 and 3/4 full). • CCW aligned to upper motor bearing oil cooler. - 2CCW-67 and 2CCW-68 (2P-2A) - 2CCW-69 and 2CCW-70 (2P-2B) - 2CCW-71 and 2CCW-72 (2P-2C) - 2CCW-73 and 2CCW-74 (2P-2D) • Suction valve full open. - 2CV-0609 (2P-2A) - 2CV-0620 (2P-2B) - 2CV-0614 (2P-2C) - 2CV-0626 (2P-2D) • Area around pump free of debris. • Coffer Dam full of water. • - Use "Makeup to Condensate Pump Coffer Dams" section of this procedure if fluid addition needed. • Chemistry notified to monitor Condensate oxygen and other parameters as necessary. 7.2.7 Open selected Condensate Pump Vent to Condenser: • 2CS-14A (2P-2A) • 2CS-16A (2P-2B)

Op-Test No.: 2012-1	Scenario No.: 4	Event No.: 4

Event Description: 'A' Condensate pump motor winding degrade cause temperature to rise.

Time	Position	Applicant's Actions or Behavior
		• 2CS-14B (2P-2C) • 2CS-16B (2P-2D)
Procedure Note: Condensate Pump Recircs (2CV-0662 and 2CV-0663) will go full open on high discharge pressure of 753 psig.		
	BOP	7.2.8 IF desired to prevent inadvertent opening of Condensate Pump recircs (2CV-0662 and 2CV-0663), THEN place controllers in MANUAL: • 2FIC-0662 • 2FIC-0663 **Examiner Note: At the current power level the condensate pump recircs should not inadvertently open.**
Procedure Note: Swapping Condensate pumps should be done in a timely manner (i.e. 15 seconds) to minimize system perturbations.		
	BOP	*7.2.9 Monitor S/G levels and FWCS response.
	BOP	7.2.10 Start selected Condensate pump: • 2P-2A (2HS-0609) • 2P-2B (2HS-0620) • 2P-2C (2HS-0614) • 2P-2D (2HS-0626)
	BOP	7.2.11 Check Discharge pressure of Condensate pump started is approximately same as other running pumps.
	BOP	7.2.12 IF desired to secure one of the previously running pumps, THEN perform the following: A. Stop desired pump: • 2P-2A (2HS-0609) • 2P-2B (2HS-0620) • 2P-2C (2HS-0614) • 2P-2D (2HS-0626)

Op-Test No.: 2012-1 Scenario No.: 4 Event No.: 4

Event Description: 'A' Condensate pump motor winding degrade cause temperature to rise.

Time	Position	Applicant's Actions or Behavior
Cue: If contacted as NLO to perform post stop checks report that 2P-2A secured sat.		
	BOP	B. IF anticipated check valve slam does not occur, THEN close discharge valve on stopped pump. **Examiner Note: 2P-2A check valve will seat properly.**
	BOP	C. Verify normal Discharge pressure (~ 650-750 psig) on running pumps.
	BOP	D. Verify cofferdam remains full on secured pump. • Use "Makeup to Condensate Pump Coffer Dams" section of this procedure if fluid add needed.
Cue: If contacted as NLO report that you will monitor coffer dam levels.		
	BOP	7.2.13 Pump Condensate Pump Recirc controllers in AUTO as desired: • 2FIC-0662 • 2FIC-0663
	BOP	7.2.14 Verify Condensate Pump Vent to Condenser on pump started closed: • 2CS-14A (2P-2A) • 2CS-16A (2P-2B) • 2CS-14B (2P-2C) • 2CS-16B (2P-2D)
	BOP	*7.2.15 Monitor pump AND motor temperatures on Condensate Pump Temperature Recorder (2TRS-0610) until stabilized.
	ANY	7.2.16 Contact Chemistry and request SGBD flow recommendations.
Termination Criteria: When 'D' Condensate pump has been started and 'A' condensate pump has been secured or at the discretion of the lead examiner.		

Op-Test No.: 2012-1	Scenario No.: 4	Event No.: 5
Event Description: B CCP has a 20 gpm suction leak. TRM for SRO.		

Time	Position	Applicant's Actions or Behavior
Cued by lead examiner	ANY	Announce annunciators: 2K12-B3 HEADER FLOW LO
	ATC	2.1 Check flow on 2FIS-4863 and Computer Point (F4863).
	ATC/BOP	2.2 Check Charging pressure on 2PIS-4870 and Computer Point (P4870).
	SRO	2.3 IF Charging pressure or flow low, THEN GO TO Loss of Charging (2203.036).
Cue: If contacted as NLO to investigate 'B' charging pump wait 2 minutes, then report that the weld for the flange on suction damper for 'B' charging pump is severely cracked and water is leaking out.		
	SRO	Enter and implement Loss of Charging AOP, 2203.036.
	ATC	1. Check Charging flow path as follows: • Suction source aligned to ANY of the following: - VCT - RWT - BAMT. • Charging Header Isolation valve (2CV-4840-2) open.
	ATC	2. IF lead Charging pump stopped AND green indicating light OFF, THEN start backup Charging pump. **Examiner Note: This step is not applicable.**
Procedure Note: Erratic Charging Pump Discharge pressure and flow may indicate gas binding.		

Op-Test No.: 2012-1	Scenario No.: 4	Event No.: 5
Event Description: B CCP has a 20 gpm suction leak. TRM for SRO.		
	ATC	3. Check for adequate Charging pump operation as follows: • Charging header flow 28 to 45 gpm. • Charging Pump Discharge header pressure greater than RCS pressure. • Charging Pump Discharge pressure stable. • Charging Pump flow stable. • IF charging flow less than 40 gpm THEN refer to: - TRM 3.1.1 Flowpaths - TRM 3.1.2 Flowpaths - TRM 3.1.3 Charging pump - TRM 3.1.4 Charging pump **Examiner Note: Charging flow will be less than 28 gpm.**
	ATC	3. IF Charging pump operation NOT adequate, THEN perform the following: A. Close at least ONE Letdown Isolation valve by placing valve handswitch in CLOSE position: • 2CV-4820-2 • 2CV-4821-1 • 2CV-4823-2 (least preferred)
	ATC	B. Place ALL Charging pump handswitches in stop.
	ATC	C. Close Charging Header Isolation valve (2CV-4840-2).
	ATC	D. Verify VCT Outlet valve (2CV-4873-1) closed by placing valve handswitch in CLOSE position.
	ATC	E. Verify Emergency Borate valve (2CV-4916-2) closed.
	ATC	F. Verify Gravity Feed Isolation valves closed: • 2CV-4920-1 • 2CV-4921-1
	ATC	G. Verify RWT to Charging pump Suction valve (2CV-4950-2) closed by placing valve handswitch in CLOSE position.

Op-Test No.: 2012-1	Scenario No.: 4	Event No.: 5
Event Description: B CCP has a 20 gpm suction leak. TRM for SRO.		
	SRO	H. Refer to the following Technical Requirements: • 3.1.1, Flowpaths • 3.1.2, Flowpaths • 3.1.3, Charging pump • 3.1.4, Charging pump **Examiner Note: SRO must enter TRM 3.1.2 Flowpaths, and 3.1.4 Charging pump when the charging header is isolated. Redundant power and auto start capability are not required for these TRM, TROs.**
	ANY	4. Check for indications of Charging header rupture: • VCT level drop. • Aux Building radiation level rise. • CNTMT radiation level rise. • Waste Tanks 2T20A/B level rise. • CNTMT Sump level rise. • Aux Building sump level rise.
Procedure Caution: **CVCS leaks may release radioactive gases. Respiratory protection may be required.**		
	ANY	Direct a NLO to perform the following: 5. Locally inspect CVCS for leaks.
Cue: If contacted as NLO to investigate 'B' charging pump wait 2 minutes, then report that the weld for the flange on suction damper for 'B' charging pump is severely cracked and water is leaking out.		
	ANY	6. Inform Radiation Protection of the location of any leaks.
Procedure Note: An isolable Charging pump rupture is defined as the rupture being in a location where the affected Charging pump can be isolated and at least one charging pump is capable of discharge through 2CV-4840-2.		
Cue: If asked as NLO If the leak can be isolated the report that it can by closing 2CVC-21B and 2CVC-23B.		
	ANY	7. IF leak due to isolable Charging pump rupture, THEN perform the following: A. Isolate affected Charging pump. B. Danger Tag affected Charging pump. C. GO TO Step 12.
	ATC	12. Vent CVCS as follows: A. Verify VCT Outlet valve (2CV-4873-1) closed by placing valve handswitch in CLOSE position.

Op-Test No.: 2012-1	Scenario No.: 4	Event No.: 5
Event Description: B CCP has a 20 gpm suction leak. TRM for SRO.		
	ATC	B. Verify Emergency Borate valve (2CV-4916-2) open.
	ATC	C. Start at least ONE BAM pump: • 2P-39A • 2P-39B
	ATC	D. Verify Charging Pump Header Isolation valve (2CV-4840-2) closed.
Procedure Caution: Venting CVCS may release radioactive gases. Respiratory protection may be required.		
	ANY	Direct the NLO to perform the following: E. Locally vent Charging Pump header at "CHARGING LINE VENT" (located in Upper South Piping Penetration Room): • 2CVC-1174 • 2CVC-1175 F. Locally vent remaining Charging pumps using Attachment B, Charging Pump Venting.
Cue: When direct to vent wait 1 min. per location, then report venting complete for 2CVC-1174, 2CVC-1175, 'A' charging pump and 'C' charging pump.		
	ATC	G. WHEN venting completed, THEN open Charging Pump Header Isolation valve (2CV-4840-2).
Procedure Note: RCS boration during power operation will cause TAVE to lower.		
	ATC	13. Restore Charging flow as follows: A. Record Charging header data in 2202.010 Attachment 44, Charging Header Data.
	ATC	B. Verify Emergency Borate valve (2CV-4916-2) open.
	ATC	C. Verify at least ONE BAM pump running: • 2P-39A • 2P-39B
	ATC	D. Start ONE Charging pump: • 2P-36A • 2P-36B • 2P-36C

Op-Test No.: 2012-1	Scenario No.: 4	Event No.: 5
Event Description: B CCP has a 20 gpm suction leak. TRM for SRO.		
	BOP	E. Adjust Turbine load to maintain TREF within 2°F of TAVE.
	ATC	F. Check for adequate Charging pump operation as follows: • Charging header flow 40 to 45 gpm. • Charging Pump Discharge header pressure greater than RCS pressure. • Charging Pump Discharge pressure stable. • Charging Pump flow stable.
	ATC	14. Verify Gravity Feed flow path available as follows: A. Open Gravity Feed Isolation valves: • 2CV-4920-1 • 2CV-4921-1
	ATC	B. Stop BAM pump: • 2P-39A • 2P-39B
	ATC	C. Close Emergency Borate valve (2CV-4916-2).
	ATC	D. Check for adequate Charging pump operation as follows: • Charging header flow 40 to 45 gpm. • Charging Pump Discharge header pressure greater than RCS pressure. • Charging Pump Discharge pressure stable. • Charging Pump flow stable.
	ATC	15. Verify RWT Suction source available as follows: A. Place ALL Charging pump handswitches in stop: • 2P-36A • 2P-36B • 2P-36C
	ATC	B. Close BAMT Gravity Feed valves: • 2CV-4920-1 • 2CV-4921-1
	ATC	C. Open RWT to Charging pump Suction valve (2CV-4950-2).

Op-Test No.: 2012-1	Scenario No.: 4	Event No.: 5
Event Description: B CCP has a 20 gpm suction leak. TRM for SRO.		
	ANY	D. Locally vent RWT line downstream of 2CV-4950-2 at "RWT LINE DRAIN" (located in Charging pump 2P36A room): • 2CVC-1044 • 2CVC-1045
Cue: When direct to vent wait 1 min. then report venting complete for 2CVC-1044, 2CVC-1045.		
	ATC	E. Start ONE Charging pump: • 2P-36A • 2P-36B • 2P-36C
	ATC	F. Check for adequate Charging pump operation as follows: • Charging header flow 40 to 45 gpm. • Charging Pump Discharge header pressure greater than RCS pressure. • Charging Pump Discharge pressure stable. • Charging Pump flow stable.
	ATC	*16. Verify VCT level 60% to 78%, refer to 2104.003, Chemical Addition.
	ATC	17. Restore Charging and Letdown as follows: A. Verify Charging Pump Header Isolation valve (2CV-4840-2) open.
	ATC	B. Verify VCT Outlet valve (2CV-4873-1) open.
	ATC	C. Verify RWT to Charging Pump Suction valve (2CV-4950-2) closed.
	ATC	D. Verify at least ONE Charging pump running: • 2P-36A • 2P-36B • 2P-36C
	ATC	1) Record charging header data using 2202.010, Attachment 44, Charging Header Data.
	ATC	E. Check for adequate Charging pump operation as follows: • Charging header flow 40 to 45 gpm. • Charging Pump Discharge header pressure greater than RCS pressure. • Charging Pump Discharge pressure stable. • Charging Pump flow stable.

Op-Test No.: 2012-1	Scenario No.: 4	Event No.: 5
Event Description: B CCP has a 20 gpm suction leak. TRM for SRO.		
	ATC	F. Verify the following valve handswitches in AUTO: • 2CV-4820-2 • 2CV-4873-1 • 2CV-4950-2
	ATC	G. Restore Letdown using "Restoring Letdown Flow (After Temporary Isolation)' section of 2104.002, Chemical and Volume Control. **Examiner Note: Letdown restoration takes several minutes and moving on to the next malfunction prior to letdown restoration will not significantly impact the scenario.**
	SRO	H. Exit this procedure.
Termination criteria: When the charging has been restored from the VCT or at lead examiner's discretion.		

Op-Test No.: 2012-1	Scenario No.: 4	Event No.: 6, 7, & 8

Event Description: Steam leak Downstream of the MSIVs with no response to MSIS. Start Up #2 (SU2) Feeder breaker to 2A-1 looses DC control power causes natural circulation. #1 EDG fails to auto start.

Time	Position	Applicant's Actions or Behavior
Cued by lead examiner	ANY	Recognize indications of excessive steam flow: Reactor power rising. RCS temperature lowering. Pressurizer pressure and level lowering.
	SRO	Enter and implement Overcooling in Modes 1 or 2 AOP, 2203.050.
	BOP	*1. Check NONE of the following conditions exist: • Reactor trip is imminent. • Uncontrolled lowering of RCS TAVE (less than 540˚F for a critical reactor). • RCS pressure less than 2000 psia AND lowering. • Unable to control or restore plant parameters. • Cooldown causes reactor to go subcritical (due to positive MTC) as indicated by the following: - Reactor power less than 10 E-4 - Flux level lowering - Sustained negative SUR
	ANY	2. Secure any positive reactivity additions by stopping the following evolutions if in progress: • CEA withdrawal • RCS dilution
	BOP	*3. Control turbine load to maintain the following: • Reactor power less than 100% • TAVE within 2˚F of TREF. A. IF load reduced by 25 megawatts AND TAVE and TREF NOT matched, THEN notify Shift Manager.
	SRO	4. Notify SM to refer to Technical Specifications and 1903.010, Emergency Action Level Classification.

Op-Test No.: 2012-1 Scenario No.: 4 Event No.: 6, 7, & 8

Event Description: Steam leak Downstream of the MSIVs with no response to MSIS. Start Up #2 (SU2) Feeder breaker to 2A-1 looses DC control power causes natural circulation. #1 EDG fails to auto start.

Time	Position	Applicant's Actions or Behavior
	SRO	5. Check the following criteria satisfied: A. Steam leak NOT indicated in CNTMT Building. B. Steam leak NOT indicated in Auxiliary or Turbine Building. C. Main Turbine Control Valves properly positioned for present power level. D. All SDBCS Valves closed. E. FWCS maintaining SG levels at setpoint. F. MSSV Valve Open (2K04-G9) NOT in alarm. G. Gland Seal System pressure 1.5 to 7.0 psig.
Cue: If dispatched as a NLO then wait 15 seconds and report that the north end of the Turbine building is filling with steam.		
Examiner Note: **At any point the SRO may decide that the steam leak is too large and perform the contingency action of step 1.** **The SRO should direct tripping the reactor if he has received the report of the steam leak in the turbine building. The crew may elect to see if tripping the turbine isolated the leak but once they have confirmed that it did not isolate the leak they should close the MSIV's.**		
		*1. Perform the following: A. Trip the reactor. B. Perform the following as necessary in conjunction with SPTAS: 1) Isolate EFW to affected SG. 2) Close MSIVS: • 2CV-1010-1 • 2CV-1060-2 3) Initiate MSIS. C. GO TO 2202.001, Standard Post Trip Actions.
Critical Step	ATC	Closing the MSIV's using the hand switches **Examiner note: It is critical to close the MSIVs using the hand switches prior to RCS Tc going below 500 ^{0}F.**

Op-Test No.: 2012-1 Scenario No.: 4 Event No.: 6, 7, & 8

Event Description: Steam leak Downstream of the MSIVs with no response to MSIS. Start Up #2 (SU2) Feeder breaker to 2A-1 looses DC control power causes natural circulation. #1 EDG fails to auto start.

Time	Position	Applicant's Actions or Behavior
	SRO	Enter and implement EOP 2202.001, Standard Post Trip Actions.
	SRO	1. Notify Control Board Operators to monitor safety functions using Exhibit 7, CBO Reactor Trip Checklist. 2. Open Safety Function Tracking page.
Reactivity control safety function	ATC	3. Check Reactivity Control established as follows: _____A. Reactor power lowering. _____B. ALL CEAs fully inserted by observing ANY of the following: 1) CEA Rod bottom lights illuminated. 2) CEAC 1 indicates ALL CEAs fully inserted. 3) CEAC 2 indicates ALL CEAs fully inserted.

Op-Test No.: 2012-1 Scenario No.: 4 Event No.: 6, 7, & 8

Event Description: Steam leak Downstream of the MSIVs with no response to MSIS. Start Up #2 (SU2) Feeder breaker to 2A-1 looses DC control power causes natural circulation. #1 EDG fails to auto start.

Time	Position	Applicant's Actions or Behavior
Vital Auxiliaries safety function	BOP	4. Check Maintenance of Vital Auxiliaries satisfied: A. Check Main Turbine tripped by BOTH of the following: • ALL Main Stop Valves closed. • Generator megawatts indicate zero. B. Generator Output breakers open. C. Exciter Field breaker open. D. Check the following valves closed: • MSR 2E-12A Steam Supply From SG A (2CV-0400) **(Not, Met)** • MSR 2E-12B Steam Supply From SG B (2CV-0460) **(Not, Met)** E. At least ONE 6900v AC bus energized **(Not Met)** F. At least ONE 4160v Non-vital AC bus energized. **(Not Met)** G. BOTH 4160v Vital AC buses energized. **(Not Met, Perform contingency)** H. BOTH DGs secured. **(Not Met, but the contingency is N/A)** I. At least ONE 125v Vital DC bus energized: 2D01 - SPDS point E2D01 2D02 - SPDS point E2D02

Op-Test No.: 2012-1 Scenario No.: 4 Event No.: 6, 7, & 8

Event Description: Steam leak Downstream of the MSIVs with no response to MSIS. Start Up #2 (SU2) Feeder breaker to 2A-1 looses DC control power causes natural circulation. #1 EDG fails to auto start.

Time	Position	Applicant's Actions or Behavior
Vital Auxiliaries safety function	BOP	MVAC contingency actions. G. Perform the following: 1) IF de-energized 4160v Vital AC bus available AND associated EDG available, THEN verify associated EDG supplying bus. **(#1 EDG should be started to energize 2A-3)** 2) IF NEITHER DG available, THEN start AACG AND align to associated 4160v Vital bus using 2104.037, Alternate AC Diesel Generator Operations, Attachment E. _____ 3) Check at least ONE 4160v and 480v Vital AC bus energized.
RCS Inventory Control Safety function	ATC	5. Check RCS Inventory Control established as follows: A. PZR level: • 10 to 80%. • Trending to setpoint. B. RCS MTS 30°F or greater. **Examiner Note: PZR level may not be trending to set point if #1 EDG is not started or if 2P-36C charging is not aligned to green train and running.**
RCS Inventory Control Safety function	SRO	Direct the following as necessary: A. Perform as necessary: 1) IF SIAS actuated on PPS inserts, THEN **GO TO** Step 6. 2) Verify PZR Level Control system restoring level to setpoint.
Critical Step **It is critical that either #1 EDG is started to restore power to charging pumps or 2P-36C is aligned to green train power. Charging must be restored prior to losing all PZR level ~3.5% indicated level.**		
RCS Pressure Control Safety function	BOP	6. Check RCS Pressure Control: — • 1800 to 2250 psia. — • Trending to setpoint. • Normal PZR Spray and heaters controlling pressure. **(Not met due to LOOP, perform contingency)** • Valid CNTMT Spray NOT in progress.

Op-Test No.: 2012-1 Scenario No.: 4 Event No.: 6, 7, & 8

Event Description: Steam leak Downstream of the MSIVs with no response to MSIS. Start Up #2 (SU2) Feeder breaker to 2A-1 looses DC control power causes natural circulation. #1 EDG fails to auto start.

Time	Position	Applicant's Actions or Behavior
RCS Pressure Control Safety function	SRO	Direct the following actions as necessary: 6. Perform as necessary: D. IF RCP 2P32A or 2P32B stopped, THEN verify associated PZR Spray valve in MANUAL and closed. **(2P-32A & B spray valves should be verified closed)** F. Verify PZR Pressure Control system restoring pressure to setpoint. G. IF ALL RCPs stopped AND RCS pressure control required, THEN initiate Aux spray using 2202.010 Attachment 48, RCS Pressure Control.
Critical Step **It is critical to control RCS pressure within the limits of the PT curve and less than 2500 psi. During this event PZR pressure will be rising due to MSIV closure, and Natural circ causing the RCS to heat up. Normal Pressurizer spray is not avialable and auxiliary spray must be aligned to control RCS pressure.**		
Core Heat Removal safety function.	ATC	7. Check Core Heat Removal by forced circulation: A. At least ONE RCP running.
	SRO	Verify the contingency for step 7. A
	ATC/SRO	A. IF ALL RCPs stopped, THEN perform the following: 1) Verify BOTH PZR Spray valves in MANUAL and closed. 2) GO TO Step 8.

Op-Test No.: 2012-1 Scenario No.: 4 Event No.: 6, 7, & 8

Event Description: Steam leak Downstream of the MSIVs with no response to MSIS. Start Up #2 (SU2) Feeder breaker to 2A-1 looses DC control power causes natural circulation. #1 EDG fails to auto start.

Time	Position	Applicant's Actions or Behavior
RCS Heat Removal Safety Function	BOP/ATC	8. Check RCS Heat Removal: A. Check SG available by BOTH of the following: • At least ONE SG level 10 to 90%. • FW maintaining SG level **(Not Met, perform contingency)** B. Check MFW in RTO **(Not Met, contingency will be satisfied)** C. Check Feedwater line intact by the following: • SG level stable or rising. • NO unexplained step changes or erratic FW flow. • NO unexplained step changes or erratic Condensate flow. D. Check SG pressure 950 to 1050 psia. **(Not Met, perform contingency)**
	ANY	Perform step 8 contingency actions that are applicable: A. Perform the following: 1) IF SG level lowering, THEN verify EFAS actuated.
	ANY	B. Verify EITHER of the following: • BOTH MFW pumps tripped. • SG levels controlling at setpoint
	BOP	D. Perform as necessary: 2) Verify SDBCS restoring SG pressure 950 psia to 1050 psia using 2105.008 Exhibit 3, SDBCS Emergency Operation.
	ANY	_____F. Check RCS TC 540 to 555°F. **(May Not be Met, contingency will be satisfied)**
	ANY	F. Perform as necessary: 2) IF TC greater than 555°F, THEN check MSSVs operating to control SG pressure 1050 psia to 1100 psia.

Op-Test No.: 2012-1 Scenario No.: 4 Event No.: 6, 7, & 8

Event Description: Steam leak Downstream of the MSIVs with no response to MSIS. Start Up #2 (SU2) Feeder breaker to 2A-1 looses DC control power causes natural circulation. #1 EDG fails to auto start.

Time	Position	Applicant's Actions or Behavior
Containment Safety Function	ANY	9. Check CNTMT parameters: A. Temperature and Pressure: • Temperature less than 140°F. • Pressure less than 16 psia. B. Check CNTMT Spray pumps secured. C. NO CNTMT radiation alarms or unexplained rise in activity: 1) CAMS alarms: • "CNTMT PART/GAS RAD HI/LO" annunciator (2K10-B6) clear. 2) RCS leakage alarms: • "AREA RADIATION HI/LO" annunciator (2K11-B10) clear. • "PROC LIQUID RADIATION HI/LO" annunciator (2K11-C10) clear. 3) Check the following radiation monitors trend stable: • CNTMT Area • CAMS • Process Liquid D. NO secondary system radiation alarms or unexplained rise in activity: 1) "SEC SYS RADIATION HI" annunciator (2K11-A10) clear. 2) Secondary Systems Radiation monitors trend stable: • Main Steam lines • SG Sample • Condenser Off Gas

Op-Test No.: 2012-1 Scenario No.: 4 Event No.: 6, 7, & 8

Event Description: Steam leak Downstream of the MSIVs with no response to MSIS. Start Up #2 (SU2) Feeder breaker to 2A-1 looses DC control power causes natural circulation. #1 EDG fails to auto start.

Time	Position	Applicant's Actions or Behavior
	SRO	10. Notify STA to report to control room. 11. Direct NLOs to perform 2202.010 Attachment 47, Field Operator Post Trip Actions. 12. Verify Reactor trip announced on Plant page. 13. Notify SM to refer to Technical Specifications and 1903.010, Emergency Action Level Classification.
Cue: If directed as NLO to perform Att. 47, respond as requested.		
	SRO	14. Direct control board operators to acknowledge ALL annunciators and announce ALL critical alarms.
	SRO	15. Check ALL safety function acceptance criteria satisfied. **(All safety functions are not satisfied, perform contingency)** 15. IF ANY safety function acceptance criteria NOT satisfied, THEN perform the following: A. Notify control room staff of safety functions NOT satisfied. B. GO TO Exhibit 8, Diagnostic Actions.
	SRO	Diagnose Loss of Offsite Power 2202.007
	SRO	Enter and implement Loss of Offsite Power 2202.007
Procedure Caution: Failure to use average CETs to monitor MTS with ALL RCPs stopped may result in misleading evaluation of core conditions.		
	SRO	*1. Confirm diagnosis of only a Loss of Offsite Power by checking SFSC acceptance criteria satisfied every 15 minutes.
	SRO	2. Notify SM to refer to Technical Specifications and 1903.010, Emergency Action Level Classification.
	SRO	3. Open Placekeeping Page.

Op-Test No.: 2012-1 Scenario No.: 4 Event No.: 6, 7, & 8

Event Description: Steam leak Downstream of the MSIVs with no response to MSIS. Start Up #2 (SU2) Feeder breaker to 2A-1 looses DC control power causes natural circulation. #1 EDG fails to auto start.

Time	Position	Applicant's Actions or Behavior
	SRO	4. Notify Control Board Operators to perform the following: A. Monitor floating steps. B. Verify actuated ESFAS components using 2202.010 Exhibit 9, ESFAS Actuation.
	BOP	*5. Perform the following to protect Main Condenser: A. Close MSIVs. B. Close SG Blowdown Isolation valves: • 2CV-1016-1 • 2CV-1066-1
	ANY	*6. Check SG pressure greater than 950 psia.
	BOP	*7. Evaluate operation of DGs as follows: A. Check BOTH DGs running. **(Both EDG should be running, #1 started manually in SPTAs)** B. Check running DG Output breakers closed. C. Verify running DG voltage and frequency: • 4100 to 4200v • 59.5 to 60.5 Hz D. Locally monitor DG operation. E. IF desired to energize 4160v Non-vital bus 2A1, THEN start AACG AND align to associated 4160v Vital bus using 2104.037, Alternate AC Diesel Generator Operations, Attachment E. **Examiner Note: It should be desired to energize 2A-1 with the AACG. The crew may elect to have maintenance/NLO assess the SU2 feeder breaker and the bus prior to energizing it from the AACG.**

Cue: If requested as NLO to monitor DG operation, wait 5 minutes and report the associated EDGs are operating properly.

Cue: If requested as NLO to assess SU2 feeder breaker to 2A-1 wait 1 minute then report that the DC control power breaker is trip free. If requested to close the DC control power breaker then report it will not stay closed.

Op-Test No.: 2012-1 Scenario No.: 4 Event No.: 6, 7, & 8

Event Description: Steam leak Downstream of the MSIVs with no response to MSIS. Start Up #2 (SU2) Feeder breaker to 2A-1 looses DC control power causes natural circulation. #1 EDG fails to auto start.

Time	Position	Applicant's Actions or Behavior
2104.037 Att. E	BOP	1.0 IF 'A' PLC available, THEN reset PLC using an AACG Annunciator Screen or handswitch on 2C435. 3.0 Start AACG from ENGINE START/STOP screen. 3.1 Touch ENGINE START/STOP. 3.2 Touch START Screen. 3.3 Touch START button. 3.4 IF engine does not start in ~ 35 seconds due to pre-lube interlock, THEN touch and hold EMERGENCY START until engine speed reaches 180 RPM. 3.5 Verify Generator frequency ~ 60 Hz (900 RPM) and voltage ~ 4160 volts.
2104.037 Att. E	BOP	4.0 Verify AAC Electrical System alignment as follows: 4.1 Touch ELECTRICAL BUS CONTROL. 4.2 Touch 4160V BREAKERS. 4.3 Verify AAC Generator Output breaker (2A-1001) closed. 4.4 Touch ELECTRICAL BUS CONTROL. 4.5 Touch 480V BREAKERS. 4.6 Verify Offsite Main Breaker M1 (2B16-A1) open. 4.7 Verify Generator Main Breaker M2 (2B16-B1) closed. 4.8 Touch MONITOR 4.9 Touch ANNUNCIATOR SCREEN 4.10 Verify the following alarms clear: • Loss of 480 VAC POWER • 120 VAC UPS TROUBLE

Op-Test No.: 2012-1 Scenario No.: 4 Event No.: 6, 7, & 8

Event Description: Steam leak Downstream of the MSIVs with no response to MSIS. Start Up #2 (SU2) Feeder breaker to 2A-1 looses DC control power causes natural circulation. #1 EDG fails to auto start.

Time	Position	Applicant's Actions or Behavior
	BOP	5.0 Coordinate with Unit 1 to determine electrical power status.
Cue: If requested as Unit 1 need for AAGC power report that Unit 1 does not required any AACG power.		
2104.037 Att. E	BOP	8.0 IF desired to energize 2A1 from the AACG, THEN perform the following: 8.1 Place the following handswitches in PTL and verify breakers open: PTL (√) Bkr Open (√) • SU #2 to 2A1 (2A-111) _____ _____ • Unit Aux to 2A1 (2A-112) _____ _____ • SU #3 to 2A1 (2A-113) _____ _____ • LC 2B3 Feeder (2A-103) _____ _____ • LC 2B9 Feeder (2A-109) _____ _____ • EHC pump (2P-14A) _____ _____ • Condensate pump (2P-2A) _____ _____ • Condensate pump (2P-2C) _____ _____ • Heater Drain pump (2P-8A) _____ _____ • Auxiliary Feed pump (2P-75) _____ _____ • CCW pump (2P-33A) _____ _____ • Main Chiller (2VCH-1A) _____ _____
2104.037 Att. E	BOP	8.2 Verify the following breakers closed: • 2A1 to 2B1 (2A-102) • 2A1 to 2B7 (2A-104)
2104.037 Att. E	BOP	8.4 Close at least ONE RCP CCW Isolation valve: • 2CV-5255-1 • 2CV-5254-2 • 2CV-5236-1

Op-Test No.: 2012-1 Scenario No.: 4 Event No.: 6, 7, & 8

Event Description: Steam leak Downstream of the MSIVs with no response to MSIS. Start Up #2 (SU2) Feeder breaker to 2A-1 looses DC control power causes natural circulation. #1 EDG fails to auto start.

Time	Position	Applicant's Actions or Behavior
2104.037 Att. E	BOP	8.5 IF PLC available, THEN perform the following: 8.5.1 Touch ELECTRICAL BUS CONTROL. 8.5.2 Touch 4160 V BREAKERS. 8.5.3 Touch 2A-904.
2104.037 Att. E	BOP	8.6 Perform the following as needed to close 2A-904: • Touch CLOSE on PLC. • Use 2A-904 Control switch (2HS-7103). • Locally operate 2A-904 per Exhibit 4. 8.7 Verify 2A1 indicates ~ 4160 volts. 8.8 Verify at least one Instrument Air Compressor (2C-27A/B) running.
2104.037 Att. E	BOP	8.9 IF SW pump suction aligned to the Lake, THEN perform the following to restore CCW: 8.9.1 Verify SW aligned to CCW per Standard Attachments (2202.010), Exhibit 5, CCW/ACW/SW Alignment. 8.9.2 Verify either 2P-9A or 2P-9B running (2K11-J7 clear). 8.9.3 Verify either 2P-33A or 2P-33C running to supply CCW 8.9.4 Restore RCP CCW per Standard Attachments (2202.010), Standard Attachment 21, Restoration of CCW to RCPs.
2104.037 Att. E	BOP	8.11 Notify Chemistry to sample RCS for Boron and Iodine per TS 4.4.8. 8.12 Manually start desired loads not to exceed the following limits: • Any combination of Unit 1 and Unit 2 vital and non-vital buses may be energized as long as total load remains < 4400 KW. (4600 KW for 500 hours, 5320 KW for 30 minutes) 8.13 Energize other buses as desired using applicable sections of this Attachment.

Op-Test No.: 2012-1 Scenario No.: 4 Event No.: 6, 7, & 8

Event Description: Steam leak Downstream of the MSIVs with no response to MSIS. Start Up #2 (SU2) Feeder breaker to 2A-1 looses DC control power causes natural circulation. #1 EDG fails to auto start.

Time	Position	Applicant's Actions or Behavior
	ANY	8. Check BOTH Vital AC buses energized as follows: A. Voltage 4100 to 4200v on 4160v Vital buses 2A3 and 2A4. B. Amperage indicated on 480v Vital buses 2B5 and 2B6. C. Vital MCCs aligned to energized bus. D. GO TO Step 10.
	ANY	10. Establish SW to running DGs as follows: A. Verify associated SW pump running. B. Verify associated DG SW Outlet valve open: • 2CV-1503-1 • 2CV-1504-2 C. Check "Potential Engine Failure" NOT in alarm for ANY operating DG: • 2K08-D1/2K09-D1 D. Align SW Return header to ECP as follows: 1) Open SW Return Header To Emergency Pond valves: • 2CV-1541-1 • 2CV-1560-2 2) Verify SW Return Header To Lake valves closed: • 2CV-1481-1 • 2CV-1480-2 E. Verify SW pump suction aligned to Lake. F. Check SW aligned to ACW and CCW.

Op-Test No.: 2012-1 Scenario No.: 4 Event No.: 6, 7, & 8

Event Description: Steam leak Downstream of the MSIVs with no response to MSIS. Start Up #2 (SU2) Feeder breaker to 2A-1 looses DC control power causes natural circulation. #1 EDG fails to auto start.

Time	Position	Applicant's Actions or Behavior
	BOP	■11. Verify the following for ALL XFMR Feeder Breakers: A. Breaker handswitch is in PTL. B. Breaker is open. • 2H13, SU #2 Feeder to 2H1 • 2H14, Unit Aux Feeder to 2H1 • 2H15, SU #3 Feeder to 2H1 • 2H23, SU #2 Feeder to 2H2 • 2H24, Unit Aux Feeder to 2H2 • 2H25, SU #3 Feeder to 2H2 • 2A111, SU #2 Feeder to 2A1 • 2A112, Unit Aux Feeder to 2A1 • 2A113, SU #3 Feeder to 2A1 • 2A211, SU #2 Feeder to 2A2 • 2A212, Unit Aux Feeder to 2A2 • 2A213, SU #3 Feeder to 2A2
	ANY	*12. Establish RCS pressure control as follows: A. Check BOTH 120v Instrument AC buses 2Y1 and 2Y2 energized. B. WHEN PZR level greater than 29%, THEN verify PZR Proportional heaters restored.
	ANY	*13. Check RCS pressure less than 2250 psia.
	ATC	14. Verify at least ONE Letdown Isolation valve closed. • 2CV-4820-2 • 2CV-4821-1 • 2CV-4823-2 (least preferred)
	ATC	*15. Verify Charging pumps maintaining PZR level 10% to 80%.

Op-Test No.: 2012-1 Scenario No.: 4 Event No.: 6, 7, & 8

Event Description: Steam leak Downstream of the MSIVs with no response to MSIS. Start Up #2 (SU2) Feeder breaker to 2A-1 looses DC control power causes natural circulation. #1 EDG fails to auto start.

Time	Position	Applicant's Actions or Behavior
	ANY	16. Check Charging pump suction aligned to VCT and level greater than 40%. **(May not be met, perform contingency)**
	ANY	■16. IF VCT NOT available, THEN perform ONE of the following: • Align RWT to CVCS as follows: A. Open "Charging Pump Suction From RWT" valve (2CV-4950-2). B. Close "VCT Outlet" valve (2CV-4873-1). • Align BAM tanks to CVCS as follows: A. Open BAM Tank Gravity Feed valves: • 2CV-4920-1 • 2CV-4921-1 B. Close "VCT Outlet" valve (2CV-4873-1). • Align BAM pumps to CVCS as follows: A. Start at least ONE BAM pump. B. Open "Emergency Borate Valve" (2CV-4916-2). C. Close "VCT Outlet" valve (2CV-4873-1). D. Verify "Boric Acid Makeup Flow Control" valve (2CV-4926) closed.
	ANY	*17. Maintain RCS P-T limits, refer to 2202.010 Attachment 1, P-T Limits.
	ANY	*18. IF uncontrolled RCS cooldown below 500°F TC has occurred, THEN perform the following: A. Stop RCS cooldown. B. Depressurize RCS using 2202.010 Attachment 48, RCS Pressure Control. C. Maintain RCS MTS less than 200°F, refer to 2202.010 Attachment 1, P-T Limits.
	SRO	19. Perform 2203.002, Spent Fuel Pool Emergencies, in conjunction with this procedure.

Op-Test No.: 2012-1 Scenario No.: 4 Event No.: 6, 7, & 8

Event Description: Steam leak Downstream of the MSIVs with no response to MSIS. Start Up #2 (SU2) Feeder breaker to 2A-1 looses DC control power causes natural circulation. #1 EDG fails to auto start.

Time	Position	Applicant's Actions or Behavior
	ANY	■20. Check IA pressure greater than 65 psig.
	BOP	21. Align CNTMT cooling as follows: A. Start ALL available CNTMT Cooling fans. B. IF 2VSF-1A OR 2VSF-1B running, THEN perform the following: 1) Open "2VSF-1A/B SW CLG Inlet" (2CV-1511-1). 2) Open "2VSF-1A/B SW CLG Outlet" (2CV-1519-1). C. IF 2VSF-1C OR 2VSF-1D running, THEN perform the following: 1) Open "2VSF-1C/D SW CLG Inlet" (2CV-1510-2). 2) Open "2VSF-1C/D SW CLG Outlet" (2CV-1513-2).
	ANY	*22. Check SG levels greater than 22.2%.
	BOP	23. Perform the following to stop EFW pump 2P7A: A. Verify EFW pump 2P7B capable of feeding SGs using 2202.010 Attachment 46, Establishing EFW Flow. B. Stop EFW pump 2P7A by overriding and closing Steam to EFW Pump Turbine valve (2CV-0340-2).
	ANY	■24. Restore and maintain SG pressure 950 psia to 1050 psia using "SDBCS Emergency Operation" Exhibit 3 of 2105.008, Steam Dump and Bypass Control System Operations.
		■25. Check natural circulation conditions established in at least ONE loop by ALL of the following: • Loop ΔT less than 50°F. • TH and TC constant or lowering. • RCS MTS 30°F or greater. • ΔT between TH and average CETs less than 10°F.
		26. Align 4160v Non-vital buses as follows: A. Check 4160v Non-vital bus 2A1 supplied by AACG. B. GO TO Note before Step 28.

Op-Test No.: 2012-1 Scenario No.: 4 Event No.: 6, 7, & 8

Event Description: Steam leak Downstream of the MSIVs with no response to MSIS. Start Up #2 (SU2) Feeder breaker to 2A-1 looses DC control power causes natural circulation. #1 EDG fails to auto start.

Time	Position	Applicant's Actions or Behavior
		Procedure Note: Voltage indication for SU XFMRs may indicate SU XFMRs available with associated disconnect or breaker open.
	ANY	28. Check offsite power available AND greater than or equal to 19.5 KV on SU3 using the following: Regulated Voltage: SPDS E2ST3R; PMS E9664 Unregulated Voltage: SPDS E22AT
	ANY	28. Perform the following: A. IF SU XFMR alarms in on Annunciator Panel 2K01, THEN perform the following: 1) Check alarms to determine cause of unavailability of offsite power. 2) Take action to correct cause using Annunciator 2K01 Corrective Action (2203.012A) while continuing this procedure. B. Check SU2 available by checking the following: • Voltage greater than or equal to 158 KV with voltage regulator out of service OR voltage greater than or equal to 145 KV with voltage regulator in service using the following indications: Regulated Voltage: SPDS EST2R; PMS E4013 Unregulated Voltage: SPDS E161ST2 • Russellville East and Pleasant Hill 161 KV transmission lines in service between months of May and September, OTHERWISE only one line is required. • SU2 load shedding enabled. • No Unit 1 buses powered from SU2. • SU2 voltage regulator 3% reduction disabled.

Op-Test No.: 2012-1	Scenario No.: 4	Event No.: 6, 7, & 8

Event Description: Steam leak Downstream of the MSIVs with no response to MSIS. Start Up #2 (SU2) Feeder breaker to 2A-1 looses DC control power causes natural circulation. #1 EDG fails to auto start.

Time	Position	Applicant's Actions or Behavior
Cue: If contacted as the Dispatcher, then report SU2 voltage regulator 3% reduction is disabled.		
	SRO	C. IF SU XFMR #2 available, THEN GO TO Section 2, SU XFMR #2, Step 1.
Termination criteria: The crew has restored power to 2A-1 from AACG or to 2A-2 from SU2 or at lead examiner's discretion.		