

JPM#	1. Dyn (D/S)	2. LOD (1-5)	3. Attributes					4. Job Content Errors		5. U/E/S	6. Explanation (See below for instructions)
			IC Focus	Cues	Critical Steps	Scope (N/B)	Over- lap	Job- Link	Minutia		
RO (A1)											See attached comments.
RO (A2)											
RO (A3)											
RO (A4)											
SRO (A5)											
SRO (A6)											
SRO (A7)											
SRO (A8)											
SRO (A9)											

Instructions for Completing Matrix

This form is not contained in or required by NUREG-1021. Utilities are not required or encouraged to use it. The purpose of this form is to enhance regional consistency in reviewing operating tests. Additional information on these areas may be found in Examination Good Practices Appendix D. Check or mark any item(s) requiring comment and explain the issue in the space provided.

- Determine whether the task is dynamic (D) or static (S). A dynamic task is one that involves continuous monitoring and response to varying parameters. A static task is basically a system reconfiguration or realignment.
- Determine level of difficulty (LOD) using established 1-5 rating scale. Levels 1 and 5 represent inappropriate (low or high) discriminatory level for the license being tested.
- Check the appropriate box when an attribute weakness is identified:
 - The initiating cue is not sufficiently clear to ensure the operator understands the task and how to begin.
 - The JPM does not contain sufficient cues that are objective (not leading).
 - All critical steps (elements) have not been properly identified.
 - Scope of the task is either too narrow (N) or too broad (B).
 - Excessive overlap with other part of operating test or written examination.
- Check the appropriate box when a job content error is identified:
 - Topics not linked to job content (e.g., disguised task, not required in real job).
 - Task is trivial and without safety significance.
- Based on the reviewer's judgment, is the JPM as written (U)nacceptable (requiring repair or replacement), in need of (E)ditorial enhancement, or (S)atisfactory?
- Provide a brief description of any U or E rating in the explanation column.
- Save initial review comments as normal black text; indicate how comments were resolved using **blue text** so that each JPM used on the exam is reflected by a (S)atisfactory resolution on this form.

JPM#	1. Dyn (D/S)	2. LOD (1-5)	3. Attributes					4. Job Content Errors		5. U/E/S	6. Explanation (See below for instructions)
			IC Focus	Cues	Critical Steps	Scope (N/B)	Over- lap	Job- Link	Minutia		
S1											See attached comments.
S2											
S3											
S4											
S5											
S6											
S7											
S8											
P1											
P2											
P3											

Instructions for Completing Matrix

This form is not contained in or required by NUREG-1021. Utilities are not required or encouraged to use it. The purpose of this form is to enhance regional consistency in reviewing operating tests. Additional information on these areas may be found in Examination Good Practices Appendix D. Check or mark any item(s) requiring comment and explain the issue in the space provided.

- Determine whether the task is dynamic (D) or static (S). A dynamic task is one that involves continuous monitoring and response to varying parameters. A static task is basically a system reconfiguration or realignment.
- Determine level of difficulty (LOD) using established 1-5 rating scale. Levels 1 and 5 represent inappropriate (low or high) discriminatory level for the license being tested.
- Check the appropriate box when an attribute weakness is identified:
 - \$ The initiating cue is not sufficiently clear to ensure the operator understands the task and how to begin.
 - \$ The JPM does not contain sufficient cues that are objective (not leading).
 - \$ All critical steps (elements) have not been properly identified.
 - \$ Scope of the task is either too narrow (N) or too broad (B).
 - \$ Excessive overlap with other part of operating test or written examination.
- Check the appropriate box when a job content error is identified:
 - Topics not linked to job content (e.g., disguised task, not required in real job).
 - Task is trivial and without safety significance.
- Based on the reviewer=s judgment, is the JPM as written (U)nacceptable (requiring repair or replacement), in need of (E)ditorial enhancement, or (S)atisfactory?
- Provide a brief description of any U or E rating in the explanation column.
- Save initial review comments as normal black text; indicate how comments were resolved using **blue text** so that each JPM used on the exam is reflected by a (S)atisfactory resolution on this form.

CW – 2013 – 03										DRAFT OPERATING TEST COMMENTS										SCENARIOS									
Scenario Set	1. ES	2. TS	3. Crit	4. IC	5. Pred	6. TL	7. L/C	8. Eff	9. U/E/S	10. Explanation (See below for instructions)																			
1										See attached comments.																			
2																													
3																													
4																													
<p><u>Instructions for Completing Matrix</u></p> <p>This form is not contained in or required by NUREG-1021. Utilities are not required or encouraged to use it. The purpose of this form is to enhance regional consistency in reviewing operating test scenario sets. Additional information on these areas may be found in Examination Good Practices Appendix D. Check or mark any item(s) requiring comment and explain the issue in the space provided.</p> <ol style="list-style-type: none"> ES: ES-301 checklists 4, 5, & 6 satisfied. TS: Set includes SRO TS actions for each SRO, with required actions explicitly detailed. Crit: Each manipulation or evolution has explicit success criteria documented in Form ES-D-2. IC: Out of service equipment and other initial conditions reasonably consistent between scenarios and not predictive of scenario events and actions. Pred: Scenario sequence and other factors avoid predictability issues. TL: Time line constructed, including event and process triggered conditions, such that scenario can run without routine examiner cuing. L/C: Length and complexity for each scenario in the set is reasonable for the crew mix being examined, such that all applicants have reasonably similar exposure and events are needed for evaluation purposes. Eff: Sequence of events is reasonably efficient for examination purposes, especially with respect to long delays or interactions. Based on the reviewer=s judgment, rate the scenario set as (U)nacceptable (requiring repair or replacement), in need of (E)ditorial enhancement, or (S)atisfactory. Provide a brief description of problem in the explanation column. Save initial review comments as normal black text; indicate how comments were resolved using blue text so that each JPM used on the exam is reflected by a (S)atisfactory resolution on this form. 																													

Facility: Callaway
Examination Level: RO

Date of Examination: 3/18/2013
Operating Test Number: 2013301, Rev 1

Administrative Topic (see Note)	Type Code*	Describe activity to be performed
(A1) Conduct of Operations	R, N	Calculate a Shutdown Margin 2.1.37 (4.3) Knowledge of procedures, guidelines, or limitations associated with reactivity management.
(A2) Conduct of Operations	R, N	Calculate Volume of Water to Transfer Between RWST and Spent Fuel Pool. 2.1.25 (3.9) Ability to interpret reference materials, such as graphs, curves, tables, etc.
(A3) Equipment Control	R, N	Determine Amperage Limits for 480 VAC Safety Related busses when cross-connecting for maintenance. <i>repeat</i> 2.2.37 (3.6) Ability to determine operability and/or availability of safety related equipment.
Radiation Control		N/A
(A4) Emergency Procedures/Plan	R, N	Determine correct Functional Restoration Guideline (FRG) Procedure <i>Implementation</i> following a plant event. 2.4.14 (3.8) Knowledge of general guidelines for EOP usage.

NOTE: All items (5 total) are required for SROs. RO applicants require only 4 items unless they are retaking only the administrative topics, when all 5 are required.

* Type Codes & Criteria:

- (C)ontrol room, (S)imulator, or Class(R)oom
- (D)irect from bank (≤ 3 for ROs; ≤ 4 for SROs & RO retakes)
- (N)ew or (M)odified from bank (≥ 1)
- (P)revious 2 exams (≤ 1 ; randomly selected)

Facility: Callaway
Exam Level: RO (only) / SRO-I / **SRO-U**

Date of Examination: 3/18/2013
Operating Test No.: 2013301, Rev.1 ✓

Control Room Systems® (8 for RO); (7 for SRO-I); (2 or 3 for SRO-U, including 1 ESF)

	System / JPM Title	Type Code*	Safety Function
<i>repeat</i>	S1 004 Chemical and Volume Control System Borate the Reactor Coolant System for a power change	N, S, A, E	1
<i>(S2)</i>	010 Reactor Coolant System (BB) Perform System Surveillance – BBHV8000A Stroke Test	D, S	3
	S3 013 Engineered Safety Features Actuation System (ESFAS) Perform Attachment A of E-0	M, S, A, E, EN, L	2
<i>repeat</i>	<i>S4</i> 007 Pressurizer Relief Tank (PRTS) <i>Drain PRT to the Containment Normal Sump (RO ONLY)</i>	N, S	5
	S5 059 Main Feedwater System Transfer 'A' MFP Speed Control / Pump Trip	D, S, A	4S
	S6 062 A.C. Electrical Distribution Perform Operational Testing of the Alternate Emergency Power Source	N, S	6
<i>(S7)</i>	005 Residual Heat Removal System Transfer to Cold Leg Recirculation <i>NEW</i>	N, S, L, A, E	4P
<i>repeat</i>	S8 029 Containment Purge System Remove the Containment Mini-Purge System From Service	N, S	8

In-Plant Systems® (3 for RO); (3 for SRO-I); (3 or 2 for SRO-U)

P1	062 A.C. Electrical Distribution Shift Instrument Bus to Backup Power Supply	D	6
P2	059 Main Feedwater (MFW) System Locally Operate 'C' Main Feedwater Regulating Valve	D	4S
P3	033 Spent Fuel Pool Cooling System Place RWST in Recirculation	M, A, R	8

@ All RO and SRO-I control room (and in-plant) systems must be different and serve different safety functions; all 5 SRO-U systems must serve different safety functions; in-plant systems and functions may overlap those tested in the control room.

* Type Codes	Criteria for RO / SRO-I / SRO-U
(A)lternate path	5 4-6 (5) / 4-6 (5) / 2-3 (3)
(C)ontrol room	0 (0) / (0) / (0)
(D)irect from bank	4 ≤ 9 (4) ≤ 8 (4) / ≤ 4 (2)
(E)mergency or abnormal in-plant	3 ≥ 1 (3) / ≥ 1 (3) / ≥ 1 (2)
(EN)gineered safety feature	1 - (1) / - (1) / ≥ 1 (1) (control room system)
(L)ow-Power / Shutdown	2 ≥ 1 (2) / ≥ 1 (2) / ≥ 1 (1)
(N)ew or (M)odified from bank including 1(A)	7 ≥ 2 (7) / ≥ 2 (6) / ≥ 1 (3)
(P)revious 2 exams	0 ≤ 3 (0) / ≤ 3 (0) / ≤ 2 (0) (randomly selected)
(R)CA	1 ≥ 1 (1) / ≥ 1 (1) / ≥ 1 (1)
(S)imulator	(8) (7) (2)

JPM Summary

- S1 This is a NEW JPM. The applicant will be assigned the task of borating the RCS for a plant shutdown due to a S/G tube leak IAW OTO-MA-00008, Rapid Load Reduction. Both normal boration to the VCT and emergency boration from the Boric Acid Storage Tank will not be successful due to equipment malfunctions. The applicant will have to use the RNO option of borating from the RWST, which will be successful (ALTERNATE PATH).
- S2 This is a BANK JPM [URO-SBB05C77J (A)]. The applicant will perform the stroke time test for BBHV8000A, Reactor Coolant System Pressurizer PORV Block Valve, per OSP-BB-V00001, RCS Valve Inservice Test. When the valve is stroked, its closing and opening times exceed the allowable times. The acceptance criterion is not met and the valve fails its surveillance with notification provided to the CRS.
- S3 This JPM is MODIFIED from BANK JPM URO-AEO01C184J (A). The applicant will be assigned Attachment A of E-0, Reactor Trip or Safety Injection. When verifying equipment status the applicant will find equipment that failed to properly actuate on the SI signal. This JPM was modified from the bank JPM in that it includes different equipment that must be manually started (ALTERNATE PATH).
- S4 This is a NEW JPM. The Pressurizer Relief Tank (PRT) has a high level due to valve testing with its associated high level alarm activated. The applicant will be required to drain the PRT to the containment normal sump sufficiently to clear the tank high level alarm and not actuate the low level alarm.
- S5 This is a BANK JPM repeated from the 2007 License Exam. The applicant will be directed to transfer MFP control from Auto to Manual on the GE Controller. During the process of completing the transfer the pump will develop bearing problems resulting in high thrust bearing oil temperature. ALTERNATE PATH action will be required by the operator to trip the pump in accordance with OTA-RK-00026 *annunciator response. applicant repeat*
- S6 This is a NEW JPM. The applicant will be assigned the task of performing an online test of Alternate Emergency Power Source Diesel Generator #4 from the Control Room. The diesel will be started, readings taken and then secured from the Control Room.
- Good* S7 This is a NEW JPM. The simulator will be set up following a large Loss of Coolant Accident. The applicant will be directed to transfer the Emergency Core Cooling System to the recirculation mode in accordance with ES-1.3, Transfer to Cold Leg Recirculation. During performance, the applicant finds valves out of position and must use the Response Not Obtained column to complete the task (ALTERNATE PATH).

S8 This is a NEW JPM. The containment mini-purge system is in service. The applicant will be directed to remove the containment mini-purge system from service in accordance with OTN-GT-00001, Containment Purge System.

P1 This is a BANK JPM (EOS-SNN30011J). In the plant, the applicant will simulate how to transfer instrument 120 VAC bus NN03 to its backup power supply, transformer XNN05.

P2 This is a BANK JPM (URO-SAE02P055J). In the plant, the applicant will simulate taking local control of 'C' Main Feedwater Regulating Valve.

P3 This JPM is MODIFIED from BANK JPM URO-SEC01053J. In the plant, the *repeat* operator will simulate placing the Refueling Water Storage Tank (RWST) in recirculation for Chemistry. This will be an ALTERNATE PATH JPM in that several valves will not be in their required position for recirculation and will have to be repositioned by the operator. Also flow will have to be adjusted following the lineup. The bank JPM was not alternate path.

Procedurally driven? ODP? ensure vs check

CALLAWAY ENERGY CENTER JOB PERFORMANCE MEASURE

JPM No: A1

KSA No: GEN 2.1.37

Revision: Sept 2012

KSA Rating: 4.3/4.6

Job Title: RO

Duty: Administrative

Task Title: Knowledge of procedures, guidelines, or limitations associated with reactivity management: Calculate a Shutdown Margin.

Validation
Completion Time: 20 minutes

RO Learning Objective. (file to SAT)

The performance of this task was evaluated against the standards contained in this JPM and determined to be:

[] SATISFACTORY [] UNSATISFACTORY

Reason, if UNSATISFACTORY:

EVALUATORS SIGNATURE: _____ DATE: _____

TASK PERFORMER: _____

LOCATION OF PERFORMANCE:

CONTROL ROOM _____ SIMULATOR/LAB _____ PLANT _____ CLASSROOM X

METHOD OF PERFORMANCE: SIMULATED _____ PERFORMED X

References: OSP-SF-00001, Shutdown Margin Calculations, Rev 40
Plant Curve Book
WINPCNDR Handouts

Distinguish between the 2...

→ *Handouts*
Tools / Equipment: _____ Calculator

FACILITY REPRESENTATIVE: _____ DATE: _____

CHIEF EXAMINER: _____ DATE: _____

JPM NO: A1

Read to Performer: will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: The plant is at 100% power, as indicated on REU1118, with Control Rods D @ 215 steps and RCS Boron Concentration at 750 ppm. Effective Full Power Days (EFPD) is at 270 (12000 MWD/MTU). There is a question about whether the Rod Insertion Limit (RIL) monitor is functional.

Initiating Cues: Due to the concerns of the RIL monitor, the Control Room Supervisor directs you to perform a Shutdown Margin Calculation for the current plant conditions IAW OSP-SF-00001, Shutdown Margin Calculations, He has ~~directed~~ ^{directed} you to perform the calculation IAW Step 6.11. The PC program OSPSF1 is currently being revised by reactor engineering and is not available.

When complete, inform the CRS of what the calculated value is for the Shutdown Margin (SDM) and ~~is~~ ^{if the} SDM acceptable.

Task Standard: Upon completion of this JPM, the Applicant will have determined that the Shutdown Margin is acceptable with a value of 2114-2582.

START TIME: _____

STOP TIME: _____

JPM NO: A1

**TASK
NUMBER - ELEMENT**

STANDARD

SCORE

1. Obtain a verified working copy of OSP-SF-00001 <i>6.11.1</i>	Applicant obtained working copy of OSP-SF-00001 NOTE: If requested, provide applicant with copies of WinPCNDR handouts. <i>Refers step is N/A</i>	S U Comments:
2. Completes Attachment 4 form OSP-SF-00001 with values from the Curve Book and WINPCNDR thru 6.11.10.h <i>6.11.2</i>	Applicant completed Attachment 4 <i>(see Answer Key)</i>	S U Comments:
<i>6.11.10.c</i>	<i>marks 6.11.10.d-g as N/A</i>	
*3. Using Attachment 4, determines current Shutdown Margin <i>6.11.11</i>	Applicant determined value of Shutdown Margin to be acceptable at a value 2348 pcm <i>(-)</i> May accept values between 2114 and 2582	S U Comments:
<i>6A.</i> The JPM is complete	Record stop time on Page 1	S U Comments:
<i>44</i> <i>Informs CRS</i>	<i>SDM is acceptable</i> <i>calc SDM and CLR? 1.3% OK</i>	

* CRITICAL STEP

Read to Performer: I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: The plant is at 100% power, as indicated on REU1118, with Control Rods D @ 215 steps and RCS Boron Concentration at 750 ppm. Effective Full Power Days (EFPD) is at 270 (12000 MWD/MTU). There is a question about whether the Rod Insertion Limit (RIL) monitor is functional.

Initiating Cues: Due to the concerns of the RIL monitor, the Control Room Supervisor directs you to perform a Shutdown Margin Calculation for the current plant conditions IAW OSP-SF-00001, Shutdown Margin Calculations. He has directed you to perform the calculation IAW Step 6.11. The PC program OSPSF1 is currently being revised by reactor engineering and is not available.

When complete, inform the CRS of what the calculated value is for the Shutdown Margin (SDM) and is SDM acceptable.

CALLAWAY ENERGY CENTER JOB PERFORMANCE MEASURE

JPM No: A2, Rev 0

KSA No: GEN 2.1.25

Revision: Sept 2012

KSA Rating: 3.9/4.2

Job Title: RO

Duty: Administrative

Task Title: Ability to interpret reference materials, such as graphs, curves, tables, etc:
Calculate volume of water to transfer between RWST and SFP within given limits.

Completion Time: 25 minutes

Validation

The performance of this task was evaluated against the standards contained in this JPM and determined to be:

☐ SATISFACTORY ☐ UNSATISFACTORY

Reason, if UNSATISFACTORY:

EVALUATORS SIGNATURE: _____ DATE: _____

TASK PERFORMER: _____

LOCATION OF PERFORMANCE:

CONTROL ROOM _____ SIMULATOR/LAB _____ PLANT _____ CLASSROOM X

METHOD OF PERFORMANCE: SIMULATED _____ PERFORMED X

References: OOA-BB-00003 ✓
OTA-RK-00018, Add 47D ✓
OTA-RK-00022, Add 76D ✓
Plant Tank Data Book

Ref for RWST op low lv/?

Handouts _____
Tools / Equipment: Calculator

FACILITY REPRESENTATIVE: _____ DATE: _____

CHIEF EXAMINER: _____ DATE: _____

Read to Performer: I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: The plant is at 80% power. Maintenance has been performed on the level instrument for the Spent Fuel Pool (SFP), EC LI-39A. Current level indicates zero (0) on EC LI-39A. Refueling Water Storage Tank (RWST) level is currently at the administrative low level limit.

Cask loading pit and transfer canal gates are installed.

Initiating Cues: The Control Room Supervisor (CRS) ^{*directs*} ~~has directed~~ you to transfer water from the RWST to the SFP to verify that the SFP high level alarm will annunciate properly on rising level. The CRS ^{*directs*} ~~has directed~~ you to calculate the volume of water required to actuate the SFP level high alarm and if this water is available from the RWST without affecting the operability of the RWST.

Task Standard: Upon completion of this JPM, the Applicant will have determined that 7716 gallons (acceptable range is 6945-8488) of water is needed to actuate the SFP high level alarm and that the RWST will still be operable if this water is transferred to the SFP from its contents.

START TIME: _____

STOP TIME: _____

**TASK
NUMBER - ELEMENT**
STANDARD
SCORE

<p>*1. Determine volume of water required to raise SFP level to high alarm setpoint</p>	<p>Applicant calculated that 7716 gal is needed as follows:</p> <p>High alarm setpoint for the SFP is +8.69" as obtained from OTA-RK-00022, Add 76D</p> <p>Applicant determined from OOA-BB-00003 that the SFP contains 888 gal/in</p> <p>$8.69" \times 888 \text{ gal/in} = 7716 \text{ gallons}$ <u>(Acceptable values are 6945-8488)</u></p>	<p>S U</p> <p>Comments:</p> <p><i>Defend range</i></p>
<p>2. Determine amount that RWST will lower if water is transferred to the SFP</p>	<p>Applicant determined that RWST level will lower by 1.9% as follows:</p> <p>Current RWST level is 96.3% as obtained from OTA-00018, Add 47D (Admin Limit given in Initiating Cue)</p> <p>RWST level conversion is 4007 gal/% as obtained from Plant Tank Book <i>Data</i> Book*</p> <p>$7716 \text{ gal} \div 4007 \text{ gal/\%} = 1.9\%$</p> <p><u>(1.73% if 6945 gal used / 2.12% if 8488 gal used)</u></p> <p>*NOTE: If OOA-BB-00003 is used, conversion is 4009 gal/% <i>1.92%</i></p>	<p>S U</p> <p>Comments:</p> <p><i>why the difference?</i></p>

* CRITICAL STEP

TASK NUMBER - ELEMENT	STANDARD	SCORE
*3. Determine if RWST is still operable after water transfer	<p>Applicant determined that RWST will still be operable if it is used to transfer water to the SFP</p> <p>Current RWST level is 96.3% as obtained from OTA-00018, Add 47D (Admin Limit given in Initiating Cue)</p> <p>96.3% - 1.73% = 94.6% 96.3% - 2.12 % = 94.2%</p> <p>RWST operability low level limit is 93.7% <i>from OTA-000 RK-00018, Add 47D</i></p>	<p>S U</p> <p>Comments:</p>
4. The JPM is complete	Record stop time on Page 1	<p>S U</p> <p>Comments:</p>

* CRITICAL STEP

Read to Performer: I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: The plant is at 80% power. Maintenance has been performed on the level instrument for the Spent Fuel Pool (SFP), EC LI-39A. Current level indicates zero (0) on EC LI-39A. Refueling Water Storage Tank (RWST) level is currently at the administrative low level limit.

Cask loading pit and transfer canal gates are installed.

Initiating Cues: The Control Room Supervisor (CRS) has directed you to transfer water from the RWST to the SFP to verify that the SFP high level alarm will annunciate properly on rising level. The CRS has directed you to calculate the volume of water required to actuate the SFP level high alarm and if this water is available from the RWST without affecting the operability of the RWST.

CALLAWAY ENERGY CENTER JOB PERFORMANCE MEASURE

JPM No: A3
Revision: Dec 2012
Job Title: RO

KSA No: GEN 2.2.37
KSA Rating: 3.6/4.6

Duty: Administrative
Task Title: Ability to determine operability and/or availability of safety related equipment: Determine amperage limits for 480 VAC safety related busses when cross-connecting for maintenance.
Completion Time: 10 minutes

*Ro Learning
Obj.*

Validation

The performance of this task was evaluated against the standards contained in this JPM and determined to be:

☐ SATISFACTORY ☐ UNSATISFACTORY

Reason, if UNSATISFACTORY:

EVALUATORS SIGNATURE: _____ DATE: _____

TASK PERFORMER: _____

LOCATION OF PERFORMANCE:

CONTROL ROOM _____ SIMULATOR/LAB _____ PLANT _____ CLASSROOM X

METHOD OF PERFORMANCE: SIMULATED _____ PERFORMED X

References: OTN-NG-00001, Class 1E 480 VAC Electrical System, Rev 14

Tools / Equipment: Calculator

FACILITY REPRESENTATIVE: _____ DATE: _____

CHIEF EXAMINER: _____ DATE: _____

JPM NO: A3

Read to Performer: I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: The plant is at 100% power. NG01 local ammeter indicates 712 amps. NG03 local ammeter indicates 344 amps. The following Train 'A' equipment is **NOT** in service:

space →

- DG Vent Supply Fan A, CGM01A
- Air Compressor A, CKA01A
- Fuel Pool Clg Pump A, PEC01A
- CR A/C Unit A, SGK04A

712
344
1056 amps

Initiating Cues:

present tense

The Control Room Supervisor (CRS) *directs* ~~has directed~~ you to cross-connect Load Centers NG01 and NG03 for maintenance to replace Load Center NG01 feeder breaker, NG0101.

Prior to cross-connecting NG01 and NG03, the CRS wants to know:

Which equipment not currently in service could be started after the load centers are cross-connected?

Provide your answer to the CRS (Examiner) *on the cue sheet below:*

Task Standard:

Past tense

Upon completion of this JPM, the Applicant will ~~report~~ *ed* that CGM01A, PEC01A or SGK04A can be started.

START TIME: _____

STOP TIME: _____

**TASK
NUMBER - ELEMENT**
STANDARD
SCORE

1.	Obtain a verified working copy of OTN-NG-00001	Applicant obtained working copy of OTN-NG-00001	S U Comments:
2.	Refers to Section 5.10, Cross-Connecting Load Centers NG01 And NG03	Applicant referred to Section 5.10, Cross-Connecting Load Centers NG01 And NG03	S U Comments:
3	CAUTION The following	Applicant read CAUTION	S U
4	5.10.1 / 5.10.2 Determines total amperage allowed on NG01 and NG03 when cross-connected 5.10.3 / 5.10.7	Applicant determined total amperage allowed on NG01 and NG03 when cross-connected is less than 1200 amps. Current load is 712 + 394 = 1086 Amps Determined from Caution preceding Step 5.10.1 or from Step 5.10.3	S U Comments:
5	NOTE: The bus transfer Refers to Attachment 1, Load Centers NG01 & NG03 Loads 5.10.8	Applicant read NOTE Applicant referred to Attachment 1, Load Centers NG01 & NG03 Loads	S U Comments:

Is applicant going to N/A steps 5.10.4-6
* CRITICAL STEP

JPM NO: A3

TASK NUMBER - ELEMENT	STANDARD	SCORE
*5. Using Att 1 and provided cues, determines what equipment can be started on NG01 and NG03 after they are cross-connected	<p>Applicant determined that CGM01A, SGK01A and PEC01A can be started but that CKA01A could not be started, as based on the following calculations:</p> <p>Current amperage on both busses is $712 + 344 = 1056$ (Provided in cue)</p> <p>Margin for starting additional equipment is $1200 - 1056 = 144$</p> <p>Amperage for equipment not running would be: CGM01A-130 – Acceptable CKA01A-296 – Not Acceptable PEC01A-132 – Acceptable SGK04A 85 – Acceptable</p> <p>Information is provided to the CRS (Examiner)</p>	<p>S U</p> <p>Comments:</p>
6. The JPM is complete	Record stop time on Page 1	<p>S U</p> <p>Comments:</p>

* CRITICAL STEP

Read to Performer: I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: The plant is at 100% power. NG01 local ammeter indicates 712 amps. NG03 local ammeter indicates 344 amps. The following Train 'A' equipment is **NOT** in service:

DG Vent Supply Fan A, CGM01A	130
Air Compressor A, CKA01A	276
Fuel Pool Clg Pump A, PEC01A	132
CR A/C Unit A, SGK04A	85

$$\begin{array}{r} 1200 \\ - 1056 \\ \hline 144 \end{array}$$

Initiating Cues: The Control Room Supervisor (CRS) has directed you to cross-connect Load Centers NG01 and NG03 for maintenance to replace Load Center NG01 feeder breaker, NG0101.

Prior to cross-connecting NG01 and NG03, the CRS wants to know:

Which equipment not currently in service could be started after the load centers are cross-connected?

Provide your answer to the CRS (Examiner) *on the cue sheet below.*

~~DG~~ ~~AC A~~ ~~Y~~ ~~N~~

CALLAWAY ENERGY CENTER JOB PERFORMANCE MEASURE

*Do this on
Simulator?*

JPM No: A4 KSA No: GEN 2.4.14
Revision: Dec 2012 KSA Rating: 3.8/4.5
Job Title: RO
Duty: Administrative
Task Title: Knowledge of general guidelines for EOP usage: Determine correct
Functional Restoration Guideline (FRG) procedure implementation following
a plant event.
Completion Time: 14 minutes

*Validation
Completion Time:
NO Learning Obs!*

The performance of this task was evaluated against the standards contained in this JPM and determined to be:

☐ SATISFACTORY ☐ UNSATISFACTORY

Reason, if UNSATISFACTORY:

/

EVALUATORS SIGNATURE: _____ DATE: _____

TASK PERFORMER: _____

LOCATION OF PERFORMANCE:

CONTROL ROOM _____ SIMULATOR/LAB _____ PLANT _____ CLASSROOM X

METHOD OF PERFORMANCE: SIMULATED _____ PERFORMED X

References: CSF-1, Critical Safety Function Status Trees (CSFST), Rev 10

Handout _____

Tools / Equipment:


FACILITY REPRESENTATIVE: _____ DATE: _____

CHIEF EXAMINER: _____ DATE: _____

Read to Performer: I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: A fault/rupture ^{both?} occurred in Steam Generator 'D' 30 minutes ago.
The following plant conditions currently exist:

NIS Source Ranges	Energized / 0 SUR
Containment Pressure	28 psig
RCS Subcooling	10°F Superheat
RCS Pressure	1300 psig
Auxiliary Feedwater Flow	SG 'A' – 100,000 lbm/hr
	SG 'B' – 100,000 lbm/hr
	SG 'C' – 100,000 lbm/hr
	SG 'D' – 0 lbm/hr
Steam Generator Levels	0% NR – All Steam Generators
Steam Generator Pressures	SG 'A' – 825 psig
	SG 'B' – 815 psig
	SG 'C' – 815 psig
	SG 'D' – 0 psig
RCS Cold Leg Temperatures	240°F – Loop 4
	450°F – Loops 1/2/3
Core Exit Thermocouples	705°F - 750°F
RVLIS (Pumps Off)	45%
Pressurizer Level	0%
Containment Spray Pumps	Both Off -
Atmospheric Steam Dumps	All Closed -

Initiating Cues:  The Control Room Supervisor (CRS) has directed you to perform the Critical Safety Functions (CSF). Report the highest priority CSF to the CRS and which FRG should be implemented.

Task Standard: Upon completion of this JPM, the Applicant will report to the CRS that the highest priority CSF is Core Cooling and that FR-C.2, Response to Degraded Core Cooling should be implemented.

START TIME: _____ STOP TIME: _____

TASK NUMBER - ELEMENT	STANDARD	SCORE
1. Obtain a verified working copy of CSF-1	Applicant obtained working copy of CSF-1	S U Comments:
2. Reviews Subcriticality CSF	Applicant determined Subcriticality CSF is satisfied – green condition	S U Comments:
3. Reviews Core Cooling CSF	Applicant determined Core Cooling CSF is orange - go to FR-C.2	S U Comments:
4. Reviews Heat Sink CSF	Applicant determined Heat Sink CSF is yellow – go to FR-H.5	S U Comments:

* CRITICAL STEP

TASK NUMBER - ELEMENT	STANDARD	SCORE
5. Reviews Integrity CSF	Applicant determined Integrity CSF is orange – go to FR-P.1	S U Comments:
6. Reviews Containment CSF	Applicant determined Containment CSF is orange – go to FR-Z.1	S U Comments:
7. Reviews Inventory CSF	Applicant determined Inventory CSF is yellow – go to FR-I.2	S U Comments:
*8. Informs the CRS that CSF review is complete	Applicant reported that highest priority CSF is Core Cooling and that FR-C.2, Response to Degraded Core Cooling, should be implemented	S U Comments:

* CRITICAL STEP

JPM NO: A4

TASK NUMBER - ELEMENT	STANDARD	SCORE
9. The JPM is complete	Record stop time on Page 1	S U Comments:

* CRITICAL STEP

Read to Performer: I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: A fault/rupture occurred in Steam Generator 'D' 30 minutes ago.
The following plant conditions currently exist:

NIS Source Ranges	Energized / 0 SUR
Containment Pressure	28 psig
RCS Subcooling	10°F Superheat
RCS Pressure	1300 psig
Auxiliary Feedwater Flow	SG 'A' – 100,000 lbm/hr
	SG 'B' – 100,000 lbm/hr
	SG 'C' – 100,000 lbm/hr
	SG 'D' – 0 lbm/hr
Steam Generator Levels	0% NR – All Steam Generators
Steam Generator Pressures	SG 'A' – 825 psig
	SG 'B' – 815 psig
	SG 'C' – 815 psig
	SG 'D' – 0 psig
RCS Cold Leg Temperatures	240°F – Loop 4
	450°F – Loops 1/2/3
Core Exit Thermocouples	705°F - 750°F
RVLIS (Pumps Off)	45%
Pressurizer Level	0%
Containment Spray Pumps	Both Off
Atmospheric Steam Dumps	All Closed

Initiating Cues: The Control Room Supervisor (CRS) has directed you to perform the Critical Safety Functions (CSF). Report the highest priority CSF to the CRS and which FRG should be implemented.

CALLAWAY ENERGY CENTER JOB PERFORMANCE MEASURE

JPM No: A5
Revision: Nov 2012
Job Title: SRO

KSA No: GEN 2.1.35
KSA Rating: 2.2/3.9

Duty: Administrative
Task Title: Knowledge of the fuel handling responsibilities of SROs: Evaluate conditions for restarting of Refueling Preshuffle of Fuel Assemblies in the Spent Fuel Pool.

Completion Time: 35 minutes
Validation

SRO LO?

The performance of this task was evaluated against the standards contained in this JPM and determined to be:

☐ SATISFACTORY ☐ UNSATISFACTORY

Reason, if UNSATISFACTORY:

EVALUATORS SIGNATURE: _____ DATE: _____

TASK PERFORMER: _____

LOCATION OF PERFORMANCE:

CONTROL ROOM _____ SIMULATOR/LAB _____ PLANT _____ CLASSROOM X

METHOD OF PERFORMANCE: SIMULATED _____ PERFORMED X

References: OSP-SF-00003, Pre-Core Alteration Verifications, Rev 26
OTN-EC-00001, Fuel Pool Cooling and Cleanup System, Rev 39, *00A-BB-00003*
APA-ZZ-00801, Foreign Material Exclusion, Rev 32
CDP-ZZ-00200, *APP 'B'*, Primary Plant Systems Tables, Rev 27
Curve Book Table 8-8b, Rev 13
Technical Specifications

Handouts: _____

Chemistry Schedule and Water Specs

Tools / Equipment:

FACILITY REPRESENTATIVE: _____ DATE: _____

CHIEF EXAMINER: _____ DATE: _____

Read to Performer: I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: The Plant is in Mode 1.

Preparations are being made for Refuel 19.

Irradiated Fuel assemble shuffling activities have been in progress in the Spent Fuel Pool. Shuffling activities have been suspended for 10 days due to a shortage of manpower.

The Shift Manager (SM) desires to resume shuffling ^{*irradiated*} fuel assemblies in the Spent Fuel Pool.

The following plant conditions exist:

- Spent Fuel Pool level indicates -22" on ECLI39A
- Spent Fuel Pool boron concentration is 2250 ppm
- Spent Fuel Pool temperature is 101°F
- Control Room temperature is 73°F
- FME controls for the Spent Fuel Pool are not in effect
- OSP-KE-00004, Excessive Load Interlock Verification For The Spent Fuel Pool Bridge Crane, was performed 5 days ago

ECV0995, —, open?

The following plant components are inoperable/OOS:

- Spent Fuel Pool skimmer pump is OOS
- SGK04A, CTRL RM A/C Unit A, failed to start two hours ago, and SGK04B is tagged OOS for breaker maintenance
- GG RE-27, Fuel/Aux Bldg Radiation Monitor, has been inoperable for 8 days, and the Fuel Building and Control Building HVAC are in a normal lineup
- Inverter NN03 is OOS; all other inverters are operable

Initiating Cues: ^{*directs*} The SM ~~has directed~~ you to evaluate conditions for recommencement of shuffling ^{*irradiated*} fuel assemblies in the Spent Fuel Pool IAW OSP-SF-00003, Pre-Core Alterations, and other requirements. Identify ALL items, if any exist, that will prevent the recommencement of shuffling fuel assemblies ~~at this time~~.

JPM NO: A5

**TASK
NUMBER - ELEMENT**

STANDARD

SCORE

Task Standard: Upon completion of this JPM, the Operator will have identified five (5) items that would prevent the recommencement of shuffling fuel assemblies ~~at this time~~.

The five items are:

- Spent Fuel Pool level is below the minimum level of -19.50" ($\geq 23'$ over the top of the storage racks)
- FME controls for the Spent Fuel Pool (SFP) are not in place
- Two inoperable trains of CRACS, TS 3.7.11, due to both SGK04A and SGK04B, require the suspension of movement of irradiated fuel assemblies
- Fuel Building (FB) HVAC must be in a FBVIS lineup within 7 days of the inoperability of GG RE-27 or suspend the movement of irradiated fuel assemblies (FA)
- Control Building HVAC must be in a CRVIS lineup within 7 days of the inoperability of GG RE-27 or suspend the movement of irradiated fuel assemblies (FA)

START TIME: _____

STOP TIME: _____

* CRITICAL STEP

JPM NO: A5

Put in Procedure Step order:
6.8.1
6.8.2

**TASK
NUMBER - ELEMENT**

STANDARD

SCORE

1. Obtains a verified working copy of OSP-SF-00003	Applicant obtained working copy of OSP-SF-00003	S U Comments:
2. Refers to Section 6.8, Prior To Movement Of Irradiated Fuel Assemblies In The Fuel Building	Applicant referred to Section 6.8	S U Comments:
3. Evaluates each condition and equipment status to determine if SFP fuel shuffle can recommence <i>Initial Conditions don't provide info to address 6.8.6, 6.8.3, 6.8.7 and 3 TSLCO's in 6.8.9</i>	Applicant evaluated each condition and equipment status to determine if SFP fuel shuffle can recommence NOTE: Evaluation of given conditions can be performed in any order	S U Comments:
*4. Determines SFP level is below the minimum level for moving irradiated FAs in the SFP <i>6.8.4</i>	Applicant determined SFP level of -22" is below the minimum level of -19.5" for moving irradiated FAs Can be determined from either OOA-BB-00003 or OTN-EC-00001, <i>Atch 1</i>	S U Comments:

* CRITICAL STEP

TASK NUMBER - ELEMENT	STANDARD	SCORE
5. Determines SFP boron concentration is above the minimum level for moving irradiated FAs in the SFP	Applicant determined SFP boron concentration is above the minimum concentration of 2165 ppm for moving irradiated FAs in the SFP Can be determined from either CDP-ZZ-00200, APP 'B', or OSP-SF-00003	S U Comments:
6. Determines SFP temperature is below the maximum for moving irradiated FAs in the SFP	Applicant determined SFP temperature is below the maximum of 114°F for moving irradiated FAs in the SFP Can be determined from Curve Book Table 8-8b	S U Comments:
7. Determines Control Room (CR) temperature is below maximum allowed limit	Applicant determined CR temperature is below maximum allowed limit Can be determined from FSAR16.7.4 (Also, there is no CR limit associated with moving irradiated FAs)	S U Comments:
*8. Determines FME controls must be in place to move irradiated FAs in the SFP	Applicant determined FME controls must be in place to move irradiated FAs in the SFP Can be determined from APA-ZZ-00801 <i>Atch 4</i>	S U Comments:

* CRITICAL STEP

TASK NUMBER - ELEMENT	STANDARD	SCORE
9. Determines OSP-KE-00004 is current for moving irradiated FAs in the SFP <i>6.8.2</i>	Applicant determined OSP-KE-00004 is current for moving irradiated FAs in the SFP Can be determined from OSP-SF-00003	S U Comments:
10. Determines SFP skimmer pump is not required for moving irradiated FAs in the SFP <i>Because it's not listed in Sec 6.8! ✓</i>	Applicant determined SFP skimmer pump is not required for moving irradiated FAs in the SFP No requirements exist for SFP skimmer pump to be in operation when moving irradiated FAs in the SFP	S U Comments:
*11. Determines irradiated FAs cannot be moved in the SFP due to Control Room Air Conditioning System (CRACS) being inoperable <i>6.8.8</i>	Applicant determined irradiated FAs cannot be moved in the SFP due to Control Room Air Conditioning System (CRACS) being inoperable Can be determined from review of TS 3.7.11, Condition D	S U Comments:
*12. Determines irradiated FAs cannot be moved in the SFP due to FB HVAC not being in FBVIS lineup <i>is this 6.8.3?</i> <i>not clear in 6.8?</i>	Applicant determined irradiated FAs cannot be moved in the SFP due to FB HVAC not being in FBVIS lineup (Required due to inoperability of GG RE-27) Can be determined from review of TS 3.3.8, Conditions A and D	S U Comments:

* CRITICAL STEP

TASK NUMBER - ELEMENT	STANDARD	SCORE
<p>*13. Determines irradiated FAs cannot be moved in the SFP due to Control Building HVAC not being in FBVIS lineup</p> <p><i>Why not in 6.8?</i></p>	<p>Applicant determined irradiated FAs cannot be moved in the SFP due to CB HVAC not being in CRVIS lineup (Required due to inoperability of GG RE-27)</p> <p>Can be determined from review of TS 3.3.8, Conditions A and D</p>	<p>S U</p> <p>Comments:</p>
<p>14. Determines irradiated FAs can be moved in the SFP with NN03 OOS</p>	<p>Applicant determined irradiated FAs can be moved in the SFP with NN03 OOS</p> <p>Can be determined from review of TS 3.8.8, Condition A</p>	<p><i>Ref provided?</i></p>
<p>*15. Determines shuffling of FAs in the SFP cannot recommence at this time</p>	<p>Applicant determined shuffling of FAs in the SFP cannot recommence at this time due to the following 5 items not being satisfied:</p> <ol style="list-style-type: none"> 1) SFP level below required minimum 2) FME controls not being in place 3) Two CRACS trains inoperable 4) FB HVAC not being in FBVIS lineup 5) CB HVAC not being in CRVIS lineup <p>Applicant informed SM of items which prevent recommencing of SFP FA shuffle</p>	<p>S U</p> <p>Comments:</p>

* CRITICAL STEP

JPM NO: A5

TASK NUMBER - ELEMENT	STANDARD	SCORE
16. The JPM is complete	Record stop time on Page 2	S U Comments:

* CRITICAL STEP

Read to Performer: I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: The Plant is in Mode 1.
Preparations are being made for Refuel 19.
Fuel assemble shuffling activities have been in progress in the Spent Fuel Pool.
Shuffling activities have been suspended for 10 days due to a shortage of manpower.

The Shift Manager (SM) desires to resume shuffling fuel assemblies in the Spent Fuel Pool.

The following plant conditions exist:

- Spent Fuel Pool level indicates -22" on ECLI39A
- Spent Fuel Pool boron concentration is 2250 ppm
- Spent Fuel Pool temperature is 101°F
- Control Room temperature is 73°F
- FME controls for the Spent Fuel Pool are not in effect
- OSP-KE-00004, Excessive Load Interlock Verification For The Spent Fuel Pool Bridge Crane, was performed 5 days ago

The following plant components are inoperable/OOS:

- Spent Fuel Pool skimmer pump is OOS
- SGK04A, CTRL RM A/C Unit A, failed to start two hours ago, and SGK04B is tagged OOS for breaker maintenance
- GG RE-27, Fuel/Aux Bldg Radiation Monitor, has been inoperable for 8 days, and the Fuel Building and Control Building HVAC are in a normal lineup
- Inverter NN03 is OOS; all other inverters are operable

Initiating Cues: The SM has directed you to evaluate conditions for recommencement of shuffling fuel assemblies in the Spent Fuel Pool IAW OSP-SF-00003, Pre-Core Alterations, and other requirements. Identify ALL items, if any exist, that will prevent the recommencement of shuffling fuel assemblies at this time.

CALLAWAY ENERGY CENTER JOB PERFORMANCE MEASURE

JPM No: A6, Rev 0

KSA No: GEN 2.1.18

Revision: Sept 2012

KSA Rating: 3.6/3.8

Job Title: SRO

Duty: Administrative

Task Title: Ability to make accurate, clear, and concise logs, records, status boards, and reports: Review shift logs for completeness and correctness.

SRO LO?
Validation
Completion Time: 30 minutes

The performance of this task was evaluated against the standards contained in this JPM and determined to be:

☐ SATISFACTORY ☐ UNSATISFACTORY

Reason, if UNSATISFACTORY:

EVALUATORS SIGNATURE: _____ DATE: _____

TASK PERFORMER: _____

LOCATION OF PERFORMANCE:

CONTROL ROOM _____ SIMULATOR/LAB _____ PLANT _____ CLASSROOM X

METHOD OF PERFORMANCE: SIMULATED _____ PERFORMED X

References: OSP-ZZ-00001, Control Room Shift And Daily Log Readings And Channel Checks, Rev 79

Standards: _____
TS Chap 3.7, Plant Systems
OSP-BB-0009, RCS Inventory Balance

Tools / Equipment: OSP-ZZ-00001, Attachment 1

FACILITY REPRESENTATIVE: _____ DATE: _____

CHIEF EXAMINER: _____ DATE: _____

Read to Performer: I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: The Plant is at 100% power.

CGK04B, Control Room Pressurization Fan 'B', is OOS.

Discharge Monitor Tank (DMT) 'B' is currently being discharged.

The program for Auto Tour rounds is not available and manual logs are required.

Initiating Cues: The Reactor Operator (RO) has completed the Control Room Night Shift logs. You are to review Sheets 1-13 of Attachment 1 for accuracy and identify any corrections or plant issues that need to be addressed.

Another SRO will review Sheets 14-19.

**TASK
NUMBER - ELEMENT**

STANDARD

SCORE

Task Standard: There are 10 mistakes that have been made on the completed logs provided to the Applicant as described below:

- 1) TS allowed time for CGK04B to be OOS is listed as 30 days rather than 7 days per TS 3.7.10 on Sheet 1.
- 2) Due date for next completion of OSP-BB-00009 is 5 days rather than the required 3 days on Sheet 1.
- 3) Group counters for control rods Bank D1 and Bank D2 logged at 228 steps rather than 215 steps on Sheet 4 - Controlling rod height is listed as Control Bank 'D' at 215 steps on Sheet 1.

explain

- (4) OPΔT Setpoint Channel Check logged as SAT on Sheet 5. Deviation is greater than 6% which would be UNSAT by Criteria 1.

- 5) Condensate Storage Tank Level is below the Acceptance Criteria on Sheet 6.
- 6) Cooling Tower B/D Disch flow on Sheet 6 is above the maximum flow allowed during a plant discharge (DMT 'B' currently being discharged as given in Initial Conditions).
- 7) ACC Tank 'B' Press is below the Acceptance Criteria on Sheet 7.

Why? Ref?

- 8) Corrective action needed for RWST temperature being above 90°F on Sheet 8.
- 9) Loop 3 Flow Inst Channel Check marked as SAT on Sheet 10. Deviation is greater than 3% which would be UNSAT by Criteria 1.
- 10) SG 'A' NR Level Inst Channel Check marked as SAT on Sheet 13. Deviation is greater than 3% which would be UNSAT by Criteria 1.

Upon completion of this JPM, the Applicant will have identified at least 8 of the 10 corrections that are needed on the logs to successfully complete this JPM.

START TIME: _____

STOP TIME: _____

* CRITICAL STEP

TASK NUMBER - ELEMENT	STANDARD	SCORE
1. Obtain a verified working copy of OSP-ZZ-00001	Applicant obtained working copy of OSP-ZZ-00001	S U Comments:
2. Review completed copy of Sheets 1-13 of Attachment 1	Applicant reviewed completed copy of Sheets 1-13 of Attachment 1	S U Comments:

* CRITICAL STEP

TASK NUMBER - ELEMENT	STANDARD	SCORE
*3. Identifies at least 8 of the 10 items needing to be addressed in completed logs reviewed	<p>Applicant identified at least 8 of the 10 items needing to be addressed in the completed logs reviewed – the items needing to be addressed are:</p> <ul style="list-style-type: none"> 1) OOS time for CGK04B on Sh 1 2) Due date for OSP-BB-00009 on Sh 1 3) Group counters for CB 'D' different on Sh 4 from Sh 1 4) OPΔT channel check listed as SAT on Sh 5 – incorrect 5) Condensate Storage Tank Level below the acceptance criteria on Sh 6 6) CT B/D flow incorrect for plant discharge in progress on Sh 6 7) ACC Tank 'B' press below acceptance criteria on Sh 7 8) RWST temp on Sh 7 needs corrective action identified 9) Loop 3 flow channel check listed as SAT on Sh 10 – incorrect 10) SG 'A' NR level channel check listed as SAT on Sh 13 – incorrect 	<p>S U</p> <p>Comments:</p>

* CRITICAL STEP

JPM NO: A6, Rev 0

TASK NUMBER - ELEMENT	STANDARD	SCORE
4. The JPM is complete	Record stop time on Page 2 Eight (8) of 10 items need to be identified to successfully complete JPM	S U Comments:

* CRITICAL STEP

Read to Performer: I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: The Plant is at 100% power.

CGK04B, Control Room Pressurization Fan 'B', is OOS.

Discharge Monitor Tank (DMT) 'B' is currently being discharged.

The program for Auto Tour rounds is not available and manual logs are required.

Initiating Cues: The Reactor Operator (RO) has completed the Control Room Night Shift logs. You are to review Sheets 1-13 of Attachment 1 for accuracy and identify any corrections or plant issues that need to be addressed.

Another SRO will review Sheets 14-19.

CALLAWAY ENERGY CENTER JOB PERFORMANCE MEASURE

JPM No: A7, Rev 0

KSA No: GEN 2.2.18

Revision: Sept 2012

KSA Rating: 2.6/3.9

Job Title: SRO

Duty: Administrative

Task Title: Knowledge of the process for managing maintenance activities during shutdown operations, such as risk assessments, work prioritization, etc:
Perform a risk assessment during shutdown conditions.

Completion Time: 10 minutes

SRO 20?
Validation

The performance of this task was evaluated against the standards contained in this JPM and determined to be:

☐ SATISFACTORY ☐ UNSATISFACTORY

Reason, if UNSATISFACTORY:

EVALUATORS SIGNATURE: _____ DATE: _____

TASK PERFORMER: _____

LOCATION OF PERFORMANCE:

CONTROL ROOM _____ SIMULATOR/LAB _____ PLANT _____ CLASSROOM X

METHOD OF PERFORMANCE: SIMULATED _____ PERFORMED X

References: EDP-ZZ-01129, Callaway Energy Center Risk Assessment, Rev 33

Handouts:

Tools / Equipment:

FACILITY REPRESENTATIVE: _____ DATE: _____

CHIEF EXAMINER: _____ DATE: _____

Read to Performer: I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

- Initial Conditions:
- ~~Callaway~~ Plant is in Mode 6.
 - Core Offload is in progress with Refueling Pool level at 390”.
 - XNB01 is OPERABLE supplying NB01.
 - XNB02 is Out of Service for maintenance.
 - NE01 is OPERABLE.
 - NE02 is AVAILABLE with LSELS deenergized.
 - AEPS Diesel Generators are AVAILABLE.
 - There is NO work being performed in the Switchyard or on the Grid.
 - A Severe Thunderstorm Warning has been issued for Callaway County.

Initiating Cues: The Shift Manager (SM) ^{directs} ~~has directed~~ you to perform a Shutdown Safety Assessment for Power Availability IAW EDP-ZZ-01129, Callaway Energy Center Risk Assessment. Inform the SM of the number of credit points and color condition for Power Availability when you are complete.

Task Standard: Upon completion of this JPM, the Applicant will have completed a Shutdown Safety Assessment for Power Availability and informed the SM that there are five (5) credit points for Power Availability and the condition color is Green.

START TIME: _____

STOP TIME: _____

TASK NUMBER - ELEMENT	STANDARD	SCORE
<i>JPM</i> <i>Step 1</i> 1. Obtain a verified working copy of EDP-ZZ-01129	Applicant obtained working copy of EDP-ZZ-01129	S U Comments:
2. Determines correct attachment to use is Att 6, Shutdown Safety Assessment – MODE 6 – Refueling Operations \geq 23 ft. Above Vessel Flange (Indicated Level \geq 376.0")	Applicant determined Attachment 6 is correct attachment to use for given plant conditions	S U Comments:
<i>C</i> 3. 1. Assigns 1 point for operable offsite AC power sources (XNB01)	Applicant assigned 1 point for operable offsite AC power sources <i>because _____</i>	S U Comments:
<i>C</i> 4. 2. Assigns 0 points for available offsite AC power sources	Applicant assigned 0 points for available offsite AC power sources <i>because _____</i>	S U Comments:

* CRITICAL STEP

TASK NUMBER - ELEMENT	STANDARD	SCORE
C 5. ³ Assigns 1 point for operable onsite AC power sources	Applicant assigned 1 point for operable onsite AC power sources <i>because _____</i>	S U Comments:
C 6. ⁴ Assigns 1 point for available onsite AC power sources	Applicant assigned 1 point for available onsite AC power sources <i>because _____</i>	S U Comments:
C 7. ⁵ Assigns 1 point for AEPS diesel generators being available	Applicant assigned 1 point for AEPS diesel generators being available <i>because _____</i> (Int Cond)	S U Comments:
C 8. ⁶ Assigns 1 point for no significant switchyard work in progress	Applicant assigned 1 point for no significant switchyard work in progress (Int Cond)	S U Comments:

* CRITICAL STEP

TASK NUMBER - ELEMENT	STANDARD	SCORE
9. ^{7.} Deducts 0 points for no significant grid work in progress <i>C</i>	Applicant deducted 0 points for no significant grid work in progress <i>(Init Cond)</i>	S U Comments:
10.	Applicant informed SM there were five (5) credit points for Power Availability <i>(would allow applicant to pass if wrong points assigned but still added up to 5)</i>	S U Comments:
*11.	Applicant informed SM the Power Availability condition color is Green	S U Comments:
12. The JPM is complete	Record stop time on Page 1	S U Comments:

* CRITICAL STEP

Read to Performer: I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

- Initial Conditions:
- Callaway Plant is in Mode 6.
 - Core Offload is in progress with Refueling Pool level at 390".
 - XNB01 is OPERABLE supplying NB01.
 - XNB02 is Out of Service for maintenance.
 - NE01 is OPERABLE.
 - NE02 is AVAILABLE with LSELS deenergized.
 - AEPS Diesel Generators are AVAILABLE.
 - There is NO work being performed in the Switchyard or on the Grid.
 - A Severe Thunderstorm Warning has been issued for Callaway County.

Initiating Cues: ^{*Directs*} The Shift Manager (SM) ~~has directed~~ you to perform a Shutdown Safety Assessment for Power Availability IAW EDP-ZZ-01129, Callaway Energy Center Risk Assessment. Inform the SM of the number of credit points and color condition for Power Availability when you are complete.

Credit Points: _____
Color Condition: _____

CALLAWAY ENERGY CENTER JOB PERFORMANCE MEASURE

JPM No: A8, Rev 0

KSA No: GEN 2.3.12

Revision: Nov 2012

KSA Rating: 3.2/3.7

Job Title: SRO

Duty: Administrative

Task Title: Knowledge of radiological safety principles pertaining to licensed operator duties, such as containment entry requirements, fuel handling responsibilities, access to locked high-radiation areas, aligning filters, etc.: Determine estimated dose for job and make recommendation on whether to install shielding to reduce total dose.

Validation
Completion Time: 6 minutes

The performance of this task was evaluated against the standards contained in this JPM and determined to be:

☐ SATISFACTORY ☐ UNSATISFACTORY

Reason, if UNSATISFACTORY:

EVALUATORS SIGNATURE: _____ DATE: _____

TASK PERFORMER: _____

LOCATION OF PERFORMANCE:

CONTROL ROOM _____ SIMULATOR/LAB _____ PLANT _____ CLASSROOM X

METHOD OF PERFORMANCE: SIMULATED _____ PERFORMED X

References: HTP-ZZ-01101, Administrative Controls For Radiation Shielding, Rev 17

Handouts
Tools / Equipment:

FACILITY REPRESENTATIVE: _____ DATE: _____

CHIEF EXAMINER: _____ DATE: _____

Read to Performer: I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: A work package is being planned for maintenance on EBG05, Letdown Reheat Heat Exchanger, which is located in Room 1104. A dose rate reading of 80 mR/hr at 12 inches has been taken by RP at the work location. The work for Operations to perform prior to maintenance is expected to take 1.75 hours.

It has been determined that if shielding is installed, the dose rate will lower to 45 mR/hr. The estimated total time to install and remove the shielding is ~~40~~ ³⁰ minutes. The dose to install and remove the shielding is the same.

Initiating Cues: The Shift Manager ^{directs} ~~has directed~~ you to review this job and determine the total expected dose for the work if shielding is not installed and total expected dose if shielding is installed. Recommend whether or not temporary shielding should be requested.

Task Standard: ^{Applicant} ~~Candidate~~ calculated total estimated dose for the work without installing shielding to be 140 mrem. With shielding installed the total estimated dose, including the time to install and remove the shielding, to be ~~132~~ ^{118.75} mrem. The ~~candidate~~ ^{Applicant} recommends requesting the installation of temporary shielding.

START TIME: _____

STOP TIME: _____

TASK NUMBER - ELEMENT	STANDARD	SCORE
*1. Determine expected dose without shielding.	<p><i>Applicant</i></p> <p>Candidate determined expected dose without shielding to be 140 mrem</p> <p>80 mR/hr X 1.75 hours = 140 mrem</p>	<p>S U</p> <p>Comments:</p>
*2. Determine expected dose with shielding installed.	<p>Candidate determined expected dose with the installation of shielding to be 132 mrem</p> <p>(80 mR/hr X ³⁰40 mins) + (45 mR/hr X 1.75 hours) = 132 mrem</p> <p><i>40</i> 30 <i>78.75</i> 172.5 <i>118.75</i></p>	<p>S U</p> <p>Comments:</p> <p><i>132.08 - can't find exposure down.</i></p>
*3. Determine ¹⁸ if shielding should be requested.	<p>Candidate determined that the installation of shielding would save a total of 8 mrem for the job; therefore he recommended that the installation of temporary shielding be requested for this job.</p>	<p>S U</p> <p>Comments:</p>
4. The JPM is complete.	Record stop time on Page 1.	<p>S U</p> <p>Comments:</p>

* CRITICAL STEP

Read to Performer: I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: A work package is being planned for maintenance on EBG05, Letdown Reheat Heat Exchanger, which is located in Room 1104. A dose rate reading of 80 mR/hr at 12 inches has been taken by RP at the work location. The work for Operations to perform prior to maintenance is expected to take 1.75 hours.

It has been determined that if shielding is installed, the dose rate will lower to 45 mR/hr. The estimated total time to install and remove the shielding is 40 minutes. The dose to install and remove the shielding is the same.

Initiating Cues: The Shift Manager has directed you to review this job and determine the total expected dose for the work if shielding is not installed and total expected dose if shielding is installed. Recommend whether or not temporary shielding should be requested.

CALLAWAY ENERGY CENTER JOB PERFORMANCE MEASURE

JPM No: A9, Rev 0

KSA No: GEN 2.4.41

Revision: Jan 2013

KSA Rating: 2.9/4.6

Job Title: SRO

Duty: Administrative

Task Title: Knowledge of the emergency action level thresholds and classifications:
Initiate RERP implementation to include event classification and initial offsite
notification.

Completion Time: No greater than 30 minutes (Time Critical)

The performance of this task was evaluated against the standards contained in this JPM and determined to be:

☐ SATISFACTORY ☐ UNSATISFACTORY

Reason, if UNSATISFACTORY:

EVALUATORS SIGNATURE: _____ DATE: _____

TASK PERFORMER: _____

LOCATION OF PERFORMANCE:

CONTROL ROOM _____ SIMULATOR/LAB _____ PLANT _____ CLASSROOM X

METHOD OF PERFORMANCE: SIMULATED _____ PERFORMED X

References: EIP-ZZ-00101, Classification of Emergencies, Rev 47 ?
EIP-ZZ-00101, ADD 1, EAL Classification Matrix, Rev 3 ✓
EIP-ZZ-00102, Emergency Implementing Actions, Rev 48 ✓

Tools / Equipment: Computer with Sentry capability

FACILITY REPRESENTATIVE: _____ DATE: _____

CHIEF EXAMINER: _____ DATE: _____

Read to Performer: I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: Callaway is in a Refuel with the following conditions:

- | | | |
|-------------|--|---|
| 0100 | <ul style="list-style-type: none">• Reactor Vessel Head removed for core off-load• 144 Fuel Assemblies remain in the Reactor Vessel• The Containment equipment hatch is open to support outage equipment coming into Containment• RCS Wide Range Temperature (T_{HOT}) is 188°F and lowering• NB02 is deenergized for maintenance• RHR Pump 'A' trips on overcurrent | |
| 0115 | <ul style="list-style-type: none">• Refueling Pool Level, BB LI-53A• RCS Wide Range Temperature (T_{HOT}) | <p>394 inches and STABLE
204°F and RISING</p> |

Initiating Cues: You ~~have been~~^{are} directed to determine the Emergency Event Classification and COMPLETE the Sentry Notification form and SEND it.
Notify the Examiner when Classification is completed. OR have
This JPM is Time Critical.
2 part JPM w/ 2 cue sheets.

Task Standard: Upon completion of this JPM, the Applicant will have classified the event as an Alert within 15 minutes and then completed, and sent, the initial Sentry Notification to offsite agencies within the following 15 minutes.

START TIME: _____

STOP TIME: _____

**TASK
NUMBER - ELEMENT****STANDARD****SCORE**

1. Obtain a verified working copy of EIP-ZZ-00101, Classification of Emergencies, ADD1 Wall Chart, and combined EAL attachments	Applicant obtained working copies of procedures	S U Comments:
2. <u>NOTE</u> : Initial classification should take place as soon as possible but NOT >15 minutes after recognition of initiating conditions	Applicant read note	S U Comments:
*3. Using the given conditions and Addendum 1, determine the appropriate emergency classification: Alert	Applicant declared an Alert based on EAL CA3.1 within 15 minutes	S U Comments: Time of Declaration <hr/> (Start of new 15 min clock)
4. Notify Facility Personnel EIP-ZZ-00102, ATT 5, EC Flowchart <i>Will applicant complete JPM Steps 4-8 given Initiating Cue?</i>	Applicant notified facility personnel CUE: Facility personnel have been notified	S U Comments:

* CRITICAL STEP

TASK NUMBER - ELEMENT	STANDARD	SCORE
5. Notify Onsite Personnel EIP-ZZ-00102, ATT 5, EC Flowchart	Applicant notified onsite personnel CUE: Onsite personnel have been notified	S U Comments:
6. Is Emergency Alert or higher? EIP-ZZ-00102, ATT 5, EC Flowchart	Applicant determined emergency was an Alert	S U Comments:
7. Has SAS activate callout per KOA-ZZ-00200 EIP-ZZ-00102, ATT 5, EC Flowchart	Applicant had SAS activate callout per KOA-ZZ-00200 CUE: SAS has been notified to activate callout	S U Comments:
8. Is Emergency a General Emergency EIP-ZZ-00102, ATT 5, EC Flowchart	Applicant determined emergency was not a General Emergency	S U Comments:

* CRITICAL STEP

TASK NUMBER - ELEMENT	STANDARD	SCORE
<p>*9. Notify offsite agencies by completing and sending the Sentry notification form</p> <p>EIP-ZZ-00102, ATT 5, EC Flowchart</p>	<p>Applicant filled out the Sentry notification form and sent it to the offsite agencies within 15 minutes of completing the EAL classification</p> <p><i>1AW Key.</i></p> <p><i>RES press ↑ > 10 psig?</i></p>	<p>S U</p> <p>Comments:</p> <p>Time Notification Sent</p> <hr/> <p>(Completion time of 2nd 15 min clock)</p>
<p>10. The JPM is complete</p>	<p>Record stop time on Page 1</p> <p><i>12. } where does applicant 14. } get this info? 15. }</i></p>	<p>S U</p> <p>Comments:</p>

* CRITICAL STEP

Read to Performer: I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: Callaway is in a Refuel with the following conditions:

- | | | | | | |
|--|--|-----------------------------------|-----------------------|--|------------------|
| 0100 | <ul style="list-style-type: none">• Reactor Vessel Head removed for core off-load• 144 Fuel Assemblies remain in the Reactor Vessel• The Containment equipment hatch is open to support outage equipment coming into Containment• RCS Wide Range Temperature (T_{HOT}) is 188°F and lowering• NB02 is deenergized for maintenance• RHR Pump 'A' trips on overcurrent | | | | |
| 0115 | <table border="0"><tr><td>• Refueling Pool Level, BB LI-53A</td><td>394 inches and STABLE</td></tr><tr><td>• RCS Wide Range Temperature (T_{HOT})</td><td>204°F and RISING</td></tr></table> | • Refueling Pool Level, BB LI-53A | 394 inches and STABLE | • RCS Wide Range Temperature (T_{HOT}) | 204°F and RISING |
| • Refueling Pool Level, BB LI-53A | 394 inches and STABLE | | | | |
| • RCS Wide Range Temperature (T_{HOT}) | 204°F and RISING | | | | |

Initiating Cues: You have been directed to determine the Emergency Event Classification and COMPLETE the Sentry Notification form and SEND it.

This JPM is Time Critical.

CALLAWAY PLANT JOB PERFORMANCE MEASURE

JPM No: Sim S1, Rev 0

KSA No: 004A4.07

Revision: Nov 2012

KSA Rating: 3.9 / 3.7

Job Title: RO / SROI / SROU

Duty: Chemical and Volume Control System

Task Title: Borate the Reactor Coolant System for a power change.

Completion Time: 15 minutes

The performance of this task was evaluated against the standards contained in this JPM and determined to be:

[] SATISFACTORY [] UNSATISFACTORY

Reason, if UNSATISFACTORY:

EVALUATORS SIGNATURE: _____ DATE: _____

TASK PERFORMER: _____

LOCATION OF PERFORMANCE:

CONTROL ROOM _____ SIMULATOR/LAB X PLANT _____ CLASSROOM _____

Alternate Path: YES

Time Critical: NO

METHOD OF PERFORMANCE: SIMULATED _____ PERFORMED X

References: OTO-MA-00008, Rapid Load Reduction, Rev 25
OTN-BG-00002, Reactor Makeup Control and Boron Thermal Regeneration System, Attachment 8, Borate Mode of RMCS Operation, Rev 41

Handouts:

Tools / Equipment:

FACILITY REPRESENTATIVE: _____ DATE: _____

CHIEF EXAMINER: _____ DATE: _____

Read to Performer: I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: Reactor Power is 100%.
A primary to secondary leak has been identified on S/G "B". A plant shutdown has been commenced IAW OTO-MA-00008, Rapid Load Reduction, to be in Mode 3 within 3 hours.

Initiating Cues: The Control Room Supervisor (CRS) ^{directs} ~~has directed~~ you to borate the Reactor Coolant System (RCS) 250 gallons IAW OTO-MA-00008, Step 4, to commence the plant shutdown. *at a rate of 1 gpm.*

Inform the CRS once boration has been commenced.

Notes: Use IC 161.

Fail the RMCS (Switch BG HS-25) to operate by selecting switch X02I16F to 'OFF'

Fail BG HIS-8104 to open as follows:

Insert Remote NG04CPF2, Value = Trip, Conditional of HWX01o134R eq 1
(Trips Breaker)

Fail Meter BG FI-183A to 0.0 on glass panel.

Task Standard: Upon completion of this JPM, the applicant will have commenced a boration of the RCS. Boration will be from the RWST as he will not be able to borate from the BAST due to system failures.

START TIME: _____

STOP TIME: _____

**TASK
NUMBER - ELEMENT**
CUE
STANDARD
SCORE
EVAULATOR NOTE:

OTO-MA-00008 gives 3 sets of directions to borate the RCS in Step 4. The first refers to Attachment 8 of OTN-BG-00002; the second is the same method as the first, just with the steps embedded in Step 4; the third option given is emergency boration, with the required actions given in Step 4. The three options are bulleted, meaning they do not have to be performed in order.

1.	Obtain a verified working copy of OTO-MA-00008	Provide applicant with procedure copy	Applicant obtained working copy of OTO-MA-00008	S U Comments:
2.	<i>Step 4</i> Borate from the BAST by performing any of the following: Borate using OTN-BG-00002, Att 8	Provide applicant with procedure copy	Applicant obtained working copy of OTN-BG-00002, Att 8 NOTE: Applicant may use guidance as provided in OTO MA-00008 starting at JPM Step 10	S U Comments:
3.	NOTE: This attachment provides direction for frequently performed, nominal borations. Prior to Step 1 (Att 8)		Applicant read note	S U Comments:

* Critical Step

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
4. Place BG HS-26, RCS M/U Ctrl, in Stop Step 1 (Att 8)	BG HS-26 is in Stop	Applicant placed BG HS-26, RCS M/U Ctrl, in Stop	S U Comments:
*5. Place BG HS-25, RCS M/U Ctrl Sel, in Bo [↑] Step 2 (Att 8)	BG HS-25 is in Bo[↑]	Applicant placed BG HS-25, RCS M/U Ctrl Sel, in Bo [↑]	S U Comments:
6. Reset BG FY-110B, BA Counter, to 000 Step 3 (Att 8)	BG FY-110B indicates 000	Applicant reset BG FY- 110B, BA Counter, to 000	S U Comments:
7. NOTE: When setting BG FY-110B, allowance should be made in the setpoint to compensate for instrument inaccuracies and isolation valve closure times on total flow delevered Prior to Step 4 (Att 8)		Applicant read note	S U Comments:

* Critical Step

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
8. Ensure BG FY-110B is set to deliver the desired amount of boron Step 4 (Att 8)	BG FY-110B indicates 250.0	Applicant ensured BG FY-110B set to deliver the desired amount of boron of 250 gal.	S U Comments:
*9. Place BG HS-26, RCS M/U Ctrl, in Run Step 5 (Att 8)	BG HS-26 is in Run <i>Examiner Notes:</i> Flow Recorder, BG FR-110, indicates 0 flow BG FY-110B is not changing (counting)	Applicant placed BG HS-26, RCS M/U Ctrl, in Run Applicant recognized that RMCS has malfunctioned and is not borating as expected Applicant moved to next option for boration: Step 4, Borate using Emergency Boration, beginning at JPM Step 17 10	S U Comments:
10. Borate to the VCT: Place RCS Makeup Control in Stop: BG HS-26 Step 4.a (Borate to the VCT)	BG HS-26 is in Stop	Applicant placed BG HS-26 in Stop	S U Comments:

* Critical Step

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
<p>*11. Place RCS Makeup Control Selector in Borate: <i>all caps</i></p> <p>• BG HS-25 →</p> <p>Step 4.b (Borate to the VCT)</p>	<p>BG HS-25 is in Borate</p>	<p>Applicant placed BG HS-25 in Borate <i>all caps</i></p>	<p>S U</p> <p>Comments:</p>
<p>12. Set Boric Acid Flow Controller to the desired flow rate</p> <p>• BG FK-110 →</p> <p>Step 4.c (Borate to the VCT)</p>	<p>BG FK-110 is set to desired flow rate</p>	<p>Applicant set BG FK-110 at <i>X gpm</i> (<i>per Initiating Cue</i>)</p>	<p>S U</p> <p>Comments:</p>
<p>13. Place BG FK-110 in Auto <i>caps</i></p> <p>Step 4.d (Borate to the VCT)</p>	<p>Red Auto light is lit on BG FK-110</p>	<p>Applicant placed BG FK-110 in Auto <i>caps</i></p>	<p>S U</p> <p>Comments:</p>
<p>14. Reset Boric Acid Counter to 000:</p> <p>• BG FY-110B →</p> <p>Step 4.e (Borate to the VCT)</p>	<p>BG FY-110B indicates 000</p>	<p>Applicant reset BG FY-110B to 000</p>	<p>S U</p> <p>Comments:</p>

* Critical Step

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
15. Set BG FY-110B for the desired gallons of boric acid to be added Step 4.f (Borate to the VCT)	BG FY-110B indicates 250.0	Applicant set BG FY-110B for the desired gallons of boric acid to be added <i>250 gal</i>	S U Comments:
*16. Place BG HS-26 in Run Step 4.g (Borate to the VCT)	BG HS-26 is in Run <i>Examiner Notes:</i> 1) Flow Recorder, BG FR-110, indicates 0 flow 2) BG FY-110B is not changing (counting)	Applicant placed BG HS-26 in Run Applicant recognized that RMCS has malfunctioned and is not borating as expected Applicant moved to next option for boration: Step 4, Borate using Emergency Boration	S U Comments:
*17. Start at least one Boric Acid Transfer Pump: • BG HIS-5A → • BG HIS-6A → Step 4.a (Borate using Emergency Boration)	Red light is lit and green light is not lit for pump started	Applicant started one Boric Acid Transfer Pump	S U Comments:

* Critical Step

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
*18. Open Emergency Borate To Charging Pump Suction: • BG HIS-8104 → Step 4.b (Borate using Emergency Boration)	<i>Examiner Note:</i> Red light is not lit and green light is not lit on BG HIS-8104 If contacted, Primary OT reports that breaker for valve is tripped and will not reclose	Applicant opened Emergency Borate To Charging Pump Suction: BG HIS-8104 Applicant recognized that power has been lost to BG HV-8104 Applicant moved to RNO for Step 4	S U Comments:
<i>Borate from the RWST by performing the following:</i> *19. Open CCP Suction From RWST: • BN HIS-112D → • BN HIS-112E → RNO Step 4.a	Red light is lit and green light is not lit on both: BN HIS-112D BN HIS-112E If CRS is asked for time to emergency borate, inform operator to borate for 5 minutes – another RO will calculate amount required	Applicant opened CCP Suction From RWST: BN HIS-112D BN HIS-112E	S U Comments:
*20. Close VCT Outlet Valves: • BG HIS-112B → • BG HIS-112C → RNO Step 4.b	Green light is lit and red light is not lit on both: BG HIS-112B BG HIS-112C	Applicant closed VCT Outlet Valves: BG HIS-112B BG HIS-112C	S U Comments:

* Critical Step

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
21. Notifies CRS that boration has commenced from the RWST	CRS acknowledges	Applicant informed CRS that boration has commenced from the RWST	S U Comments:
22.	The JPM is complete	Record stop time on Page 1	S U Comments:

* Critical Step

Read to Performer: I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: Reactor Power is 100%.
A primary to secondary leak has been identified on S/G "B". A plant shutdown has been commenced IAW OTO-MA-00008, Rapid Load Reduction, to be in Mode 3 within 3 hours.

Initiating Cues: The Control Room Supervisor (CRS) has directed you to borate the Reactor Coolant System (RCS) 250 gallons IAW OTO-MA-00008, Step 4, to commence the plant shutdown.

Inform the CRS once boration has been commenced.

CALLAWAY PLANT JOB PERFORMANCE MEASURE

JPM No: Sim S2, Rev 0

KSA No: 010A4.03

Revision: Oct 2012

KSA Rating: 4.0 / 3.8

Job Title: RO / SROI

Duty: Reactor Coolant System (BB)

Task Title: Perform System Surveillance – BBHV8000A Stroke Test

Completion Time: 10 minutes

The performance of this task was evaluated against the standards contained in this JPM and determined to be:

☐ SATISFACTORY ☐ UNSATISFACTORY

Reason, if UNSATISFACTORY:

Evaluator Signature: _____ Date: _____

Task Performer: _____

Location of Performance:

Control Room _____ Simulator / Lab X Plant _____ Classroom _____

Method of Performance: Simulated _____ Performed X

AP Ne TC No

References: OSP-BB-V0001, RCS Valve Inservice Test, Rev 24

Handouts:

Tools / Equipment: Calibrated Stop Watch

Facility Representative: _____ Date: _____

Chief Examiner: _____ Date: _____

Read to Performer: I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: Callaway Plant is in Mode 3.

Initiating Cues: The Control Room Supervisor (CRS) directs you to perform the Stroke Time Test for BBHV8000A, Reactor Coolant System Pressurizer PORV Block Valve, per OSP-BB-V0001, RCS Valve Inservice Test, Section 6.1. The local position indication is NOT required for this test. *All Pre-logs are met*

Notes: Use IC 168 – Run with Sim JPM S6
Select Engineering Mode
ME Schematics/BB/m22bb02_a (Pressurizer)
Right click on motor for bbhv8000a (located on top of Pressurizer)
Select RT04RC_HV8000A_MCTCLOSE – Insert Selected Value to 25
AND
Select RT04RC_HV8000A_MCTOPEN – Insert Selected Value to 25

Task Standard: Upon completion of this JPM, the applicant will have completed the Stroke Time Test for BBHV8000A per OSP-BB-V0001 and reported to the CRS that the Acceptance Criteria was not satisfied.

Start Time: _____

Stop Time: _____

**TASK
NUMBER - ELEMENT**
CUE
STANDARD
SCORE

1. Obtain a verified working copy of OSP-BB-V0001	Provide applicant with procedure copy	Applicant obtained working copy of OSP-BB-V0001	S U Comments:
2. Review Acceptance Criteria Section 3.01		Applicant reviewed Acceptance Criteria <i>per Attach 1</i>	S U Comments:
3. Review Precautions and Limitations Section 4.0	All Precautions and Limitations are satisfied	Applicant reviewed Precautions and Limitations	S U Comments:
4. Review Prerequisites Section 5.0	All Prerequisites are satisfied	Applicant reviewed Prerequisites (<i>All Satisfied per Init Cue</i>)	S U Comments:
5. NOTE: The local position indication is performed every refuel prior to Mode 4 startup. These steps may be omitted when performing this procedure in Mode 1, 2, or 3 on BBHV8000A Prior to 6.1	<u>Examiner Note:</u> ←	Applicant read note Given in initial cue that local position indication is not required for this test.	S U Comments:

* CRITICAL STEP

**TASK
NUMBER - ELEMENT**
CUE
STANDARD
SCORE

6. NOTE: If BBHV8000A, RCS PZR Out Pwr Oper Rlf HV, is on its backseat for normal operations, the stroke close time will be from the backseat position and not from the OPEN (limit switch) position. Prior to 6.1.1	<i>Examiner Cue:</i> BBHV8000A is not on its backseat <i>Is this the normal position?</i>	Applicant read note	S U Comments:
7. Using BB HIS-455A, PZR PORV, ensure BBPCV0455A is closed Step 6.1.1	BB HIS-455A green light is lit and the red light is not lit	Applicant ensured BBPCV0455A is closed	S U Comments:
8. Ensure BB HS-8000A, TRN A Cold O/P Bloc/Arm, is in the <u>block</u> position <i>caps</i> Step 6.1.2	The Block PB is depressed on BB HS-8000A	Applicant ^{depressed} ensured Block PB for BB HS-8000A is in the <u>block</u> position <i>caps</i>	S U Comments:

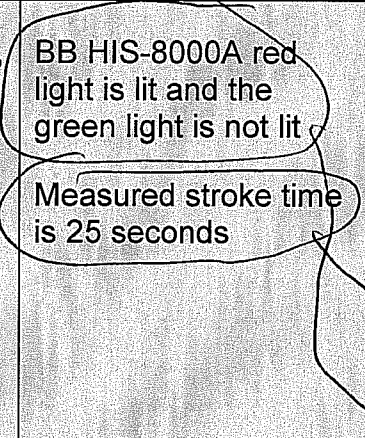
* CRITICAL STEP

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
9. Record Initial Remote Position of BB HIS-8000A, PZR PORV Block Vlv, on Attachment 1 Step 6.1.3		Applicant recorded Initial Remote Position of BB HIS-8000A on Attachment 1	S U Comments:
10. If Position Indication Testing is scheduled, perform the following: Step 6.1.4	Position Indication Testing is not scheduled	<i>N/A to step and</i> Applicant proceeded to Step 6.1.5 Given in Initiating Cue that Position Indication Testing is not scheduled	S U Comments:
*11. Using BB HIS-8000A, PZR PORV Block Vlv, close BBHV8000A and measure the elapsed time between pushing the close pushbutton and when the open light goes out Step 6.1.5	BB HIS-8000A green light is lit and the red light is not lit Measured stroke time is 25 seconds	Applicant closed BBHV8000A and measured the elapsed time between pushing the close pushbutton and when the open light went out	S U Comments:

* CRITICAL STEP

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
12. Record Observed Stroke Time Closed for BBHV8000A, RCS PZR Out Pwr Oper Rlf HV, on Attachment 1 Step 6.1.6		Applicant recorded Observed Stroke Time Closed for BBHV8000A on Attachment 1 (Observed stroke time should be ~25 sec)	S U Comments:
13. RECORD Full Stroke Remote Position of BB HIS-8000A, PZR PORV Block Vlv, on Attachment 1 Step 6.1.7		Applicant recorded Full Stroke Remote Position of BB HIS-8000A on Attachment 1 <i>what exactly should be recorded?</i>	S U Comments:
14. If Position Indication Testing is scheduled, record the Full Stroke Local Position of BBHV8000A, RCS PZR Out Pwr Oper Rlf HV, on Attachment 1 Step 6.1.8	<i>Position Indication Testing is not scheduled</i>	<i>N/A to this step and</i> Applicant proceeded to Step 6.1.9 Given in Initiating Cue that Position Indication Testing is not scheduled	S U Comments:

* CRITICAL STEP

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
<p>*15. Using BB HIS-8000A, PZR PORV Block Vlv, open BBHV8000A and measure the elapsed time between pushing the open pushbutton and when the closed light goes out</p> <p>Step 6.1.9</p>	<p>BB HIS-8000A red light is lit and the green light is not lit</p> <p>Measured stroke time is 25 seconds</p> 	<p>Applicant opened BBHV8000A and measured the elapsed time between pushing the open pushbutton and when the closed light went out</p>	<p>S U</p> <p>Comments:</p>
<p>16. Record Observed Stroke Time open for BBHV8000A, RCS PZR Out Pwr Oper Rlf HV, on Attachment 1</p> <p>Step 6.1.10</p>		<p>Applicant recorded Observed Stroke Time open for BBHV8000A on Attachment 1</p> <p>(Observed stroke time should be ~25 sec)</p>	<p>S U</p> <p>Comments:</p>

* CRITICAL STEP

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
<p>*17. Perform the following:</p> <p>a. Evaluate Observed Stroke Time against the Normal Stroke Time Range and the Maximum Allowable Stroke Time and determine if valve retest is required for BBHV8000A</p> <p>b. If Observed Stroke Time for BBHV8000A does NOT meet acceptance criteria, notify SM/CRS</p> <p>c. If retest is required, perform the retest per CA2716, Valve Retest Instructions</p> <p>Step 6.1.11</p>	<p><u>Examiner Cue:</u> Retest will NOT be performed at this time.</p>	<p>Applicant evaluated Observed Stroke Time for BBHV8000A as exceeding the maximum allowable stroke time and NOT meeting acceptance criteria</p> <p>Applicant notified SM/CRS that valve stroke time did NOT meet acceptance criteria</p>	<p>S U</p> <p>Comments:</p>
<p>18. The JPM is complete</p>		<p>Record stop time on Page 1</p>	<p>S U</p> <p>Comments:</p>

* CRITICAL STEP

Read to Performer: I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: Callaway Plant is in Mode 3.

Initiating Cues: The Control Room Supervisor (CRS) directs you to perform the Stroke Time Test for BBHV8000A, Reactor Coolant System Pressurizer PORV Block Valve, per OSP-BB-V0001, RCS Valve Inservice Test, Section 6.1. The local position indication is NOT required for this test.

CALLAWAY ENERGY CENTER JOB PERFORMANCE MEASURE

LO?

JPM No: Sim S3, Rev 0

KSA No: 013A4.01

Revision: Oct 2012

KSA Rating: 4.5 / 4.8

Job Title: RO / SROI / SROU

Duty: Engineered Safety Features Actuation System (ESFAS)

Task Title: Perform Attachment A of E-0

Completion Time: 15 minutes

The performance of this task was evaluated against the standards contained in this JPM and determined to be:

☐ SATISFACTORY ☐ UNSATISFACTORY

Reason, if UNSATISFACTORY:

Evaluator Signature: _____ Date: _____

Task Performer: _____

Location of Performance:

Control Room _____ Simulator / Lab X Plant _____ Classroom _____

Method of Performance: Simulated _____ Performed X

AP: Yes TC: No

References: E-0, Reactor Trip or Safety Injection, Rev 15

Handed.

Tools / Equipment:

Facility Representative: _____ DATE: _____

Chief Examiner: _____ DATE: _____

Read to Performer: I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: Callaway has experienced a reactor trip from full power due to a Loss of Coolant Accident. The control room is responding to the trip per E-0, Reactor Trip or Safety Injection. Currently the crew is at Step 5 of E-0.

Initiating Cues: The CRS directs you to perform Attachment A of E-0 and report to him when complete.

Note: Use IC 163.

Insert the following:

- Malf/SB/CISA_A_Block_Auto/Block/Insert
- Malf/EG/PEG01A_A/Inhibit/Insert
- Malf/EG/PEG01C_A/Inhibit/Insert
- Remote/GN/SGN01A_2/Inhibit/Insert
- Malf/BB/BB002_A/5000/Insert

Trip RCPs when RCS pressure lowers to 1400 psig

Freeze the simulator until the candidate begins the JPM

NOTE: Run following lesson each time IC is restored:

Lesson/All/Generic/1302_Sifts/Sift20120320.lsn

Task Standard: Upon completion of this JPM, the applicant will have started the 'A' or 'C' CCW Pump, 'A' Containment Cooler and manually initiated a CIS 'A' on Train 'A'.

Start Time: _____

Stop Time: _____

**TASK
NUMBER - ELEMENT**
CUE
STANDARD
SCORE

1. Obtain a verified working copy of E-0, Attachment A	Provide applicant with procedure copy	Applicant obtained working copy of E-0, Attachment A	S U Comments:
2. <i>q</i> Check charging pumps both running • BG HIS-1A and 2A <i>b. Stop NCP</i> • BG HIS-3 Step A1	Both BG HIS-1A and 2A have red lights on green lights off Examiner Note: BG HIS-3 has green light and yellow light on and red light out	Applicant checked both CCPs running <i>Applicant determined</i>	S U Comments:
3. Check SI and RHR pumps: • SI pumps both running EM HIS-4 and 5 • RHR pumps both running EJ HIS-1 and 2 Step A2	Both SI pumps and both RHR pumps have red lights on and green lights off	Applicant checked ^{<i>both</i>} SI and RHR pumps running	S U Comments:
4. Check ECCS flow: <i>a.</i> CCPs to boron inj header-flow indicated <i>b.</i> RCS pressure less than 1700 psig <i>c.</i> SI Pump discharge flow indicated Step A3	<u>Examiner Notes</u> <i>a.</i> Both EM FI-917A and B indicate 320 gpm <i>b.</i> RCS WR Press indicates 1050 psig and slowly lowering on BB PR-403 <i>c.</i> Both EM FI-918 and 922 indicate 330 gpm	Applicant checked boron inj header flow and SI pump discharge flow indicated and RCS pressure – went to Step A4 due to RCS pressure >325 psig ✓	S U Comments:

* Critical Step

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
5. CAUTION: If offsite power is lost after SI reset, manual action may be required to restart safeguards equipment. Prior to Step A4		Applicant read caution	S U Comments:
6. Check ESW pumps – both running • EF HIS-55A and 56A Step A4	<i>Examiner Notes:</i> 1) EF HIS-55A has red light on and green light off with ~140 psig discharge pressure indicated 2) EF HIS-56A has red light on and green light off with ~140 psig discharge pressure indicated	Applicant checked ESW pumps running	S U Comments:
*7. Check CCW alignment <i>CCW Pumps - On running</i> • Red train EG HIS-21 or 23 running • Yellow train EG HIS-22 or 24 running Step A5.a	EG HIS-21 and 23 have green lights lit and red lights not lit EG HIS-22 has red light lit and green light not lit After starting pump, EG HIS-21 or EG HIS-23 red light is lit and green light is not lit (provide cue based on which pump is started)	Applicant checked CCW pumps in service in both Red and Yellow train Manually started either 'A' pump (EG HIS-21 or 'B' pump (EG HIS-23)	S U Comments:

* Critical Step

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
8. CCW service loop supply and return valves for one operating CCW pump open • EG ZL-15 and 53 or OR • EG ZL-16 and 54 Step A5.b	<i>Examiner Notes:</i> 1) EG ZL-15 and 53 have green lights lit and red lights off 2) EG ZL-16 and 54 have red lights lit and green lights off	Applicant checked CCW service loop aligned properly	S U Comments:
*9. Open CCW to RHR HX valves • EG HIS-101 and 102 Step A5.c	<i>E. Notes:</i> 1) Both EG HIS-101 and 102 have both green and red lights on 2) After operating HISs, both EG HIS-101 and 102 have red lights on green lights off	Applicant opened EG HIS-101 and 102	S U Comments:
*10. Close spent fuel pool HX CCW outlet valves • EC HIS-11 and 12 Step A 5.d	<i>E. Notes:</i> 1) EC HIS-11 green light is lit and the red light is not lit 2) EC HIS-12 red light and green light are both lit 3) After closing EC HIS-12, the green light is lit and the red light is not lit	Applicant closed EC HIS-11 and 12	S U Comments:
*11. Stop spent fuel pool cooling pumps • EC HIS 27 and 28 Step A5.e	<i>E. Notes:</i> 1) EC HIS-27 has green light on red light off 2) EC HIS-28 has red light on green light off 3) After operating HIS, EC HIS-28 has green light on and red light off	Applicant stopped EC HIS-28	S U Comments:

* Critical Step

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
12. Record the time spent fuel pool cooling pump secured Step A5.f	Use current time	Applicant recorded current time	S U Comments:
13. Monitor time since CCW flow isolated to SFP HX less than 4 hours Step A5.g	<u>Examiner Cue</u> CRS acknowledges and assigns this step to another RO to perform	Applicant turned over step to another RO <i>moved to next step</i>	S U Comments:
*14. Check Containment cooler fans running in slow speed • GN HIS-9, 17, 5, and 13 Step A6	<u>Examiner Notes</u> 1. Containment cooler fans B/C/D indicate red run light for slow speed with all other lights out 2. After operating HSs, GN HIS-5, red run light for slow is lit with other lights off	Applicant selected slow speed on GN HS-5 and went to run on GN HIS-5	S U Comments:
15. Check containment hydrogen mixing fans running in slow speed • GN HIS-2, 4, 1 and 3 Step A7	<u>Examiner Note</u> GN HIS-2, 4, 1 and 3 have red slow lights lit and all other lights off	Applicant checked all four H2 mixing fans running in slow speed	S U Comments:
16. Check if Containment Spray should be actuated Step A8	<u>Examiner Note :</u> Containment pressure indicates 10 psig on GN PR-934	Applicant checked that CS should not be actuated due to Containment pressure <27 psig and went to Step A9	S U Comments:

* Critical Step

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
17. Check if main steamlines should be isolated <i>has to check GN-PR-934</i> <i>" " " AB PR-514 or 535</i> Step A9	<i>Exam Note:</i> Containment pressure indicates 10 psig on GN PR-934 and steamline pressure is at 900 psig	Applicant checked that main steamlines should not be isolated due to containment pressure and main steam pressure not reaching MSLIS setpoint and went to Step A10 <i><17 psig</i> <i><615 psig</i>	S U Comments:
18. Check ECCS valves – proper emergency alignment <i>add bullet</i> <i>add bullet</i> Step A10	<i>Exam Note:</i> SA066X and Y white lights are lit for SIS sections	Applicant checked ECCS valves are in proper emergency alignment <i>by verifying</i>	S U Comments:
*19. Check Containment Isolation Phase A <i>a. ESFAS...</i> Step A11	<i>Exam Note:</i> 1. SA066Y white lights lit for CISA; SA066X red light lit for CISA 2. SA066X white lights lit after actuated from SB HS-47	Applicant checked CISA and manually actuated Train A using SB HS-47	S U Comments:
20. Check SG blowdown isolation <i>a. ESFAS...</i> Step A12	SA066X and Y white lights are lit for S/G B/D isolation	Applicant checked proper alignment for SG blowdown isolation <i>by verifying</i>	S U Comments:

* Critical Step

May end JPM here

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE S U
21. Check both trains of control room ventilation isolation <i>a. ESFAS...</i> Step A13	SA066X and Y white lights are lit for CRVIS	Applicant checked both trains of control room ventilation isolation were proper	Comments:
22. Check containment purge isolation <i>a. ESFAS...</i> Step A14	SA066X and Y white lights are lit for CPIS	Applicant checked proper alignment for containment purge	Comments:
23. Notify CRS of equipment status <i>add bullets</i> Step A15	CRS acknowledges	Applicant notified CRS of following unanticipated manual actions taken: 1) Starting CCW Pump 2) Starting Containment Cooler 'A' 3) Manually initiating Train 'A' for CISA	Comments:
24. The JPM is complete		Record stop time on Page 1	Comments:

* Critical Step

Read to Performer: I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: Callaway has experienced a reactor trip from full power due to a Loss of Coolant Accident. The control room is responding to the trip per E-0, Reactor Trip or Safety Injection. Currently the crew is at Step 5 of E-0.

Initiating Cues: The CRS directs you to perform Attachment A of E-0 and report to him when complete.

CALLAWAY PLANT JOB PERFORMANCE MEASURE

JPM No: Sim S4, Rev 0

KSA No: 007A1.01

Revision: Oct 2012

KSA Rating: 2.9 / 3.1

Job Title: RO

Duty: Pressurizer Relief Tank (PRTS)

Task Title: Drain PRT To The Containment Normal Sump

Completion Time: 8 minutes

The performance of this task was evaluated against the standards contained in this JPM and determined to be:

[] SATISFACTORY [] UNSATISFACTORY

Reason, if UNSATISFACTORY:

Evaluator Signature: _____ Date: _____

Task Performer: _____

Location of Performance:

Control Room _____ Simulator / Lab X Plant _____ Classroom _____

Method of Performance: Simulated _____ Performed X

AP: No TC: No

References: OTN-BB-00004, Pressurizer Relief Tank, Rev 35

Handout

Tools / Equipment:

Facility Representative: _____ Date: _____

Chief Examiner: _____ Date: _____

Read to Performer: I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: The plant is at 50% power.

Due to valve testing, the Pressurizer Relief Tank (PRT) level is at 81%. MCB Annunciator 34F, PRT LEV HILO, is currently in alarm.

PRT hydrogen concentration is 0.02%.

Initiating Cues: The Control Room Supervisor (CRS) has directed you to lower PRT level to clear Ann 34F, PRT LEV HILO, by draining it to the Containment Normal Sump using OTN-BB-00004, Pressurizer Relief Tank, Section 5.6.

Stop PRT draining and notify the CRS when Ann 34F clears.

Notes: Use IC 162
Insert Browser/Plant Parameters/BB/TAPRTL
Input Selected Value to .81 and Insert (This will raise PRT level to 81% and activate Ann 34F, PRT LEV HILO)

Task Standard: Upon completion of this JPM, the applicant will have drained the PRT to the Containment Normal Sump to clear Ann 34F without reactivating Ann 34F for PRT low level (64%). ✓

Start Time: _____

Stop Time: _____

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
1. Obtain a verified working copy of OTN-BB-00004	Provide applicant with procedure copy	Applicant obtained working copy of OTN-BB-00004	S U Comments:
2. Review Precautions and Limitations	All Precautions and Limitations are satisfied	Applicant reviewed Precautions and Limitations	S U Comments:
3. Ensure PRT hydrogen concentration is less than 4% Step 5.6.1		Applicant ensured PRT hydrogen concentration was less than 4% (given in Initial Conditions) and proceeds to Step 5.6.2	S U Comments:
4. Ensure PRT level is maintained above 19% until RCS has been degasified Step 5.6.2	<i>Ex. Note:</i> BB LI-470 indicates 91%	Applicant ensured PRT level was above 19%	S U Comments:

* Critical Step

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
5. Ensure RCS is depressurized prior to lowering PRT level below 64% Step 5.6.3 <i>Critical Step</i>	<i>SK Note:</i> BB LI-470 indicates 81% (NOTE: Ann 34F will clear at 80%)	Applicant ensured PRT was not lowered to less than 64% with the RCS pressurized	S U Comments:
6. Prior to venting to atmosphere, ensure PRT hydrogen concentration is <4% Step 5.6.4		<i>1</i> Applicant ensured PRT hydrogen was <4% before venting	S U Comments:
7. Using BB HIS-8031, PRT To RCDT, ensure closed BBHV8031 Step 5.6.5	<i>BB HIS-8031 green light is lit and the red light is not lit</i>	Applicant ensured BBHV8031 was closed	S U Comments:

* Critical Step

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
8. Ensure BBPCV8034, RCS PRT N2/Serv Gas Sply PCV, is set to control between 3 and 4 psig (AB 2000 RM1322) Step 5.6.6	<i>Ed Cue:</i> After contacted, POT responds that BBPCV8934 is set to 3.5 psig	Applicant contacted POT to ensure BBPCV8934 was set to control between 3 and 4 psig	S U Comments:
*9. Using BB HIS-8026, PRT N2 Sply Inner Ctmt Iso Vlv, open BBHV8026 Step 5.6.7	BB HIS-8026 red light is lit and the green light is not lit	Applicant opened BBHV8026 using BB HIS-8026	S U Comments:
*10. Using BB HIS-8027, PRT N2 Sply Outer Ctmt Iso Vlv, open BBHV8026 Step 5.6.8	BB HIS-8027 red light is lit and the green light is not lit	Applicant opened BBHV8027 using BB HIS-8027	S U Comments:

* Critical Step

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
<p>11. CAUTION:</p> <p>Containment normal sump pumps do not have capacity to keep up with PRT outlet valves. Containment sump lineup should be checked and level monitored to prevent overflowing sump.</p> <p>Prior to 5.6.9</p>		Applicant read caution	<p>S U</p> <p>Comments:</p>
<p>*12. Open one PRT outlet valve to containment normal sump:</p> <ul style="list-style-type: none"> • BBHV8037A, by operating from RL021 using BB HIS-8037A, PRT Drn To Ctmt Norm Sump <p>or</p> <p>BBHV8037B, by operating from RL021 using BB HIS-8037B, PRT Drn To Ctmt Norm Sump</p> <p>Step 5.6.9</p>	<p>If BBHV8037A opened, BB HIS-8037A red light is lit and green light is not lit</p> <p>If BBHV8037B opened, BB HIS-8037B red light is lit and green light is not lit</p> <p><i>Exam Cue:</i> <i>If asked, local operation is not desired.</i></p>	Applicant opened either BBHV8037A or BBHV8037B	<p>S U</p> <p>Comments:</p>

* Critical Step

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
<p>13. Monitor PRT level using control room instrumentation <u>or</u> computer point:</p> <ul style="list-style-type: none"> • BBLI0470, RCS Pressurizer Relief Tank Level Indicator <i>(RL021)</i> • REL0485A, PZR Relief Tank Level <i>(computer point)</i> <p>Step 5.6.10</p>	BBLI0470 indicates 80% and lowering	Applicant monitored PRT level	<p>S U</p> <p>Comments:</p>
<p>14. Monitor Containment Normal Sump level using control room instrumentation or computer points:</p> <ul style="list-style-type: none"> • LF LI-9 and 89, Ctmt Norm Sump Lev, indicators <i>(RL019) (RL023)</i> <p>or</p> <ul style="list-style-type: none"> • LFL0009 and 0089, Ctmt Normal Sump A/B Lev, <i>(computer points)</i> <p>Step 5.6.11</p>		Applicant monitored containment normal sump level	<p>S U</p> <p>Comments:</p>

* Critical Step

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
<p>*15. When containment normal sump level reaches 30 inches, or PRT reaches desired level, close:</p> <ul style="list-style-type: none"> BBHV8037A, by operating from RL021 using BB HIS-8037A, PRT Drn To Ctmt Norm Sump or BBHV8037B, by operating from RL021 using BB HIS-8037B, PRT Drn To Ctmt Norm Sump <p>Step 5.6.12</p>	<p><i>Ex. Note:</i> BBLI0470 indicates 79% and lowering</p> <p>Ann 34F has cleared</p> <p>If BBHV8037A is closed, BB HIS-8037A green light is lit and the red light is not lit</p> <p>If BBHV8037B is closed, BB HIS-8037B green light is lit and the red light is not lit</p>	<p>Applicant monitored containment normal sump level and PRT level for indications to stop PRT draining</p> <p>Applicant closed PRT drain valve opened in Step 12</p>	<p>S U</p> <p>Comments:</p>
<p>16. If additional PRT draining is desired, <u>wait until sump level reaches a low level</u>, and return to Step 5.6.9</p> <p>Step 5.6.13</p> <p><i>how?</i></p>		<p>Applicant determined additional draining is not required</p>	<p>S U</p> <p>Comments:</p>

* Critical Step

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
17. If BBHV8037A or BBHV8037B were operated manually Step 5.6.14		Not this step Applicant proceeded to Step 5.6.15 as valves were not operated manually	S U Comments:
*18. Using BB HIS-8026, PRT N2 Sply Inner Ctmt Iso Vlv, close BBHV8026 Step 5.6.7	BB HIS-8026 green light is lit and the red light is not lit	Applicant closed BBHV8026 using BB HIS-8026	S U Comments:
*19. Using BB HIS-8027, PRT N2 Sply Outer Ctmt Iso Vlv, close BBHV8027 Step 5.6.8	BB HIS-8027 green light is lit and the red light is not lit	Applicant closed BBHV8027 using BB HIS-8027	S U Comments:
20. The JPM is complete		Record stop time on Page 1	S U Comments:

* Critical Step

Read to Performer: I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: The plant is at 50% power.

Due to valve testing, the Pressurizer Relief Tank (PRT) level is at 81%. MCB Annunciator 34F, PRT LEV HILO, is currently in alarm.

PRT hydrogen concentration is 0.02%.

Initiating Cues: The Control Room Supervisor (CRS) has directed you to lower PRT level to clear Ann 34F, PRT LEV HILO, by draining it to the Containment Normal Sump using OTN-BB-00004, Pressurizer Relief Tank, Section 5.6.

Stop PRT draining and notify the CRS when Ann 34F clears.

CALLAWAY PLANT

JOB PERFORMANCE MEASURE

JPM No: Sim S5, Rev 0

KSA No: 059A2.07

Revision: Oct 2012

KSA Rating: 3.0 / 3.3

Job Title: RO / SROI

Duty: Main Feedwater System

Task Title: Transfer 'A' MFP Speed Control/Pump Trip

Completion Time: 11 Minutes

The performance of this task was evaluated against the standards contained in this JPM and determined to be:

☐ SATISFACTORY ☐ UNSATISFACTORY

Reason, if UNSATISFACTORY:

Evaluator Signature: _____ Date: _____

Task Performer: _____

Location of Performance:

Control Room _____ Simulator / Lab X Plant _____ Classroom _____

Method of Performance: Simulated _____ Performed X

AP: Yes TC: No

References: OTN-AE-00001 Addendum 2, MFP (PAE01A/B) Operations, Rev 20
OTA-RK-00026, Addendum 122C, MFT A Thrust Bearing High Oil Temp, Rev 0

Handouts:

Tools / Equipment:

Facility Representative: _____ Date: _____

Chief Examiner: _____ Date: _____

Read to Performer: I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: The following plant conditions exist:

- Reactor power is 50%
- 'A' and 'B' Main Feed Pumps are in service
- FC SK-509B, 'A' MFP Speed Controller has been malfunctioning causing rapid changes in pump speed
- It has been determined that FC SK-509B requires Corrective Maintenance and needs to be removed from service
- The Plant Computer is NOT available

Initiating Cues: The Control Room Supervisor (CRS) ^{directs} ~~has directed~~ you to transfer 'A' MFP from AUTO to MANUAL on the GE Controller (FC HK-88) in accordance with Section 5.3 of OTN-AE-00001, Add 2, MFP (PAE01A/B) Operations.

Notes: Use IC 162 (50%).
Insert Cry Wolf Alarms/RK/Annun_C122/ON/Conditional
HWX05O124W eq 1/30 sec delay/Insert

Task Standard: Upon completion of this JPM, the applicant will have transferred control of 'A' MFP speed controller from auto to manual and then tripped 'A' MFP due to high thrust bearing oil temperature.

Start Time: _____

Stop Time: _____

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
1. Obtained a verified working copy of OTN-AE-00001, Add 2	Provide applicant with procedure copy	Applicant obtained working copy of OTN-AE-00001, Add 2	S U Comments:
2. Review Precautions and Limitations Section 3.0	All Precautions and Limitations are satisfied	Applicant reviewed Precautions and Limitations	S U Comments:
3. NOTE: MFP A and MFP B can be transferred to manual control in either order. Prior to 5.3 ✓		Applicant read note	S U Comments:
4. If desired, place FC SK-509A, MFP Turbs Master Speed Ctrl, in <u>man</u> caps Step 5.3.1	FC SK-509A is in manual with red manual light lit and red auto light off Examiner Cue: Not desired.	Applicant placed FC SK-509A, MFP Turbs Master Speed Ctrl, in <u>man</u> caps NOTE: Applicant may leave SK-509A, MFP Turbs Master Speed Ctrl, in <u>auto</u> caps	S U Comments:

* Critical Step

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
*5. Place FC SK-509B, MFP Turb A Speed Ctrl, in <u>man</u> <i>caps</i> Step 5.3.2	FC SK-509B is in manual with red manual light lit and red auto light off	Applicant placed FC SK-509B, MFP Turb A Speed Ctrl, in <u>man</u> <i>caps</i>	S U Comments:
6. Using FC HK-88, MFP Turb A Man Speed Ctrl, Null FC EI-88, MFP A Man/Auto Sig Match Step 5.3.3	FC EI-88 indicates "0"	Applicant nulled FC EI- 88 using FC HK-88	S U Comments:
*7. Place FC HIS-88, MFP Turb A Speed Ctrl Transfer, in <u>man</u> <i>caps</i> Step 5.3.4	FC HIS-88 is in manual with white manual light lit and yellow auto light off	Applicant placed FC HIS-88, MFP Turb A Speed Ctrl Transfer, in <u>man</u> <i>caps</i>	S U Comments:
8. Maintain speed using FC HK-88, MFP Turb A Man Speed Ctrl Step 5.3.5	MFP Turb A Speed indicates 3840 RPM on FC SI-33	Applicant maintained speed using FC HK- 88, MFP Turb A Man Speed Ctrl <i>at approx</i> <i>3840 RPM on FC SI-33</i>	S U Comments:

* Critical Step

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
9. Annun 122C, MFT A Thrust Bearing High Oil Temp, alarms	Provide applicant a copy of OTA-RK-00026, Add 122C <i>OTA-RK-00026 Can we use sim copy? or do we need handout?</i>	Applicant acknowledged Annun 122C	S U Comments:
10. Monitor thrust bearing oil temperature using either of the following: • FCTIS0031, Thrust Brg Oil Dm TIS (Local) • Computer point FCT0031, MFT A T-Brg Oil Temp Step 3.1	<i>?</i> SOT reports temperature is 182°F and rising	Applicant dispatched SOT to locally check temperature NOTE: Computer point not available due to unavailability of plant computer (given in initial conditions)	S U Comments:
11. Directs SOT to check Closed Cooling Water valve lineup Step 3.2.1 <i>in service what cooler is in service? A or B?</i>	<i>Bx Cues</i> SOT reports Closed Cooling Water L-O Cooler inlet and outlet isolation valves are open <i>?</i>	Applicant directed SOT to check Closed Cooling Water valve lineup <i>what valve numbers? A or B?</i>	S U Comments:

11a. NOTE
prior to 3.2.2

Applicant read note.

* Critical Step

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
12. If desired, adjust FCTIC0055 to increase cooling water flow Step 3.2.2	<i>Examiner Cue:</i> SOT reports maximum flow is through the cooler and temperature on FCTIS0031 is 189°F and rising	Applicant directed SOT to adjust FCTIC0055 to increase cooling water flow	S U Comments:
? Step 3.2.3	Cue: Not desired	N/A'd step	S U Comments:
13. If transfer to the standby oil cooler is desired, Refer To OTN-AE-00001, Feedwater System Step 3.3	<i>Examiner Cue:</i> SOT reports that the standby oil cooler is tagged out	Applicant directed SOT to transfer to the standby oil cooler NOTE: Operator may determine to trip the feed pump at this time	S U Comments:
14. If thrust bearing oil temperature is $\geq 180^{\circ}\text{F}$ and oil system flows and temperatures are normal, perform the following: Runback turbine lead to $\leq 60\%$ Step 3.4.1		Applicant identified need to perform Step 3.4 and that turbine load is already $\leq 60\%$	S U Comments:

* Critical Step

**TASK
NUMBER - ELEMENT**
CUE
STANDARD
SCORE

<p>*15. Trip MFP A</p> <p>Step 3.4.2</p>	<p>FC HIS-18, MFP Turb A Trip, has been depressed and Annun 120A, MFP A Trip, is lit</p>	<p>Applicant tripped MFP A by depressing FC#15-18 MFP Turb A Trip</p>	<p>S U</p> <p>Comments:</p>
<p>16. Check that MFP B is controlling feedwater flow automatically to maintain steam generator levels at the programmed level</p> <p>Step 3.4.3</p>	<p>S/G levels are stable at 50%</p>	<p>Applicant stabilized S/G levels using MFP B</p>	<p>S U</p> <p>Comments:</p>
<p>17. The JPM is complete</p>		<p>Record stop time on Page 1</p>	<p>S U</p> <p>Comments:</p>

* Critical Step

Read to Performer: I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: The following plant conditions exist:

- Reactor power is 50%
- 'A' and 'B' Main Feed Pumps are in service
- FC SK-509B, 'A' MFP Speed Controller has been malfunctioning causing rapid changes in pump speed
- It has been determined that FC SK-509B requires Corrective Maintenance and needs to be removed from service
- The Plant Computer is NOT available

Initiating Cues: The Control Room Supervisor (CRS) has directed you to transfer 'A' MFP from AUTO to MANUAL on the GE Controller (FC HK-88) in accordance with Section 5.3 of OTN-AE-00001, Add 2, MFP (PAE01A/B) Operations.

CALLAWAY PLANT JOB PERFORMANCE MEASURE

JPM No: Sim S6, Rev 0

KSA No: 062K1.04

Revision: Oct 2012

KSA Rating: 3.7 / 4.2

Job Title: RO / SROI

Duty: A.C. Electrical Distribution

Task Title: Perform Operational Testing of the Alternate Emergency Power Source

Completion Time: 15 minutes

The performance of this task was evaluated against the standards contained in this JPM and determined to be:

[] SATISFACTORY [] UNSATISFACTORY

Reason, if UNSATISFACTORY:

Evaluator Signature: _____ Date: _____

Task Performer: _____

Location of Performance:

Control Room _____ Simulator / Lab X Plant _____ Classroom _____

Method of Performance: Simulated _____ Performed X

AP: NO

TC: NO

References: OTS-PA-00001, Operation And Testing Of The Alternate Emergency Power Source, Rev 08

Tools / Equipment:

Facility Representative: _____ Date: _____

Chief Examiner: _____ Date: _____

Read to Performer: I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: The plant is in Mode 3.

Initiating Cues: The Control Room Supervisor (CRS) ^{*directs*} ~~has directed~~ you to perform an online test of EDGPA5004, AEPS Diesel Generator #4, in accordance with OTS-PA-00001, Operation And Testing Of The Alternate Emergency Power Source, Section 5.10.

The CRS directs you to take one (1) set of readings on Attachment 5 and then secure EDGPA5004.

The Outside OT has been briefed and is at EDGPA5004 to assist in the diesel test.

All pre-req's are met.

Notes: Perform with Sim S2 (IC-168).

Task Standard: Upon completion of this JPM, the applicant will have performed an online test of EDGPA5004, AEPS Diesel Generator #4.

Start Time: _____

Stop Time: _____

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
1. Obtain a verified working copy of OTS-PA-00001	Provide applicant with procedure copy	Applicant obtained working copy of OTS-PA-00001	<p>S U</p> <p>Comments:</p>
2. Review Precautions and Limitations	All Precautions and Limitations are satisfied	Applicant reviewed Precautions and Limitations	<p>S U</p> <p>Comments:</p>
3. Review Prerequisites	All Prerequisites are satisfied	Applicant reviewed Prerequisites - (set per Unit Cue)	<p>S U</p> <p>Comments:</p>
<p>4. NOTE: Diesels are operated from PBXY0001, AEPS Computer Interface, in the Control Room. Similar controls are available on the Master HMI (PA50102 cubicle) in the PA501 building. The local control panel on the switchgear requires a key to place it in service.</p> <p>Sections 5.7 through 5.10 may be performed concurrently.</p> <p>Prior to 5.10.1</p>		Applicant read note	<p>S U</p> <p>Comments:</p>

* Critical Step

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
5. Check Pre-start checks have been performed Step 5.10.1	<u>Exam Cue:</u> Pre-start checks are complete	Applicant checked that pre-start checks were complete	S U Comments:
*6. On the Main Screen on PBXY0001, press icon for PA50107 for AEPS Diesel Generator #4 Step 5.10.2	Generator #4 EDGPA5004 Control Panel is now displayed	Applicant pressed icon for PA50107 on PBXY0001	S U Comments:
7. Check the diesel status lights are green under the alarm monitoring section of the pop-up screen. Any status light not green must be evaluated by the CRS prior to continuing. Step 5.10.3	All status lights are lit green in the alarm monitoring section	Applicant checked status lights were green under the alarm monitoring section of the pop-up screen	S U Comments:


* Critical Step

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
<p>*8. In the pop-up window, press the button "On Line Gen Test Start"</p> <p>Step 5.10.4</p>	<p>"On Line Gen Test Start" button in the pop-up window has been pressed</p>	<p>Applicant pressed the button "On Line Gen Test Start" in the pop-up window</p>	<p>S U</p> <p>Comments:</p>
<p>9. NOTE: The next step will start the diesel generator. The generator will automatically synchronize to the PA501 bus. The output breaker will close automatically when they are synchronized. The diesel will then ramp to to 2000 KW automatically at a pre-set rate and remain at that load.</p> <p>Prior to 5.10.5</p>		<p>Applicant read note</p>	<p>S U</p> <p>Comments:</p>
<p>*10. In the confirmation pop-up window, press the button "Yes Start Generator"</p> <p>Start 5.10.5</p>	<p>"Yes Start Generator" button has been pressed</p>	<p>Applicant pressed the button "Yes Start Generator" in the confirmation pop-up window</p>	<p>S U</p> <p>Comments:</p>

* Critical Step

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
11. Check the diesel started Step 5.10.6	Engine speed indicates 1800 RPM and MegaWatts indicate 2.00 MW	Applicant checked that the diesel started	S U Comments:
12. Locally check the ventilation dampers have opened Step 5.10.7	Exam Case The OOT reports the ventilation dampers are open	Applicant contacted the OOT to verify the ventilation dampers were open	S U Comments:
13. Check breaker PA50107 closed Step 5.10.8	Breaker indication for PA50107 is lit red	Applicant checked breaker PA50107 closed	S U Comments:
14. Check diesel parameters come into normal range per Attachment 5 Step 5.10.9	All Attachment 5 parameters are within their normal range	Applicant checked diesel parameters came into normal range	S U Comments:

* Critical Step

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
15. Record readings on Attachment 5 at 1-hour intervals	<u>Exam Cue</u> You are directed to take the Attachment 5 readings from Panel PBXY0001 in the Control Room	Applicant recorded 1 set of Attachment 5 readings as directed in Initiating Cues	S U Comments:
Step 5.10.10	Indications are: Oil Press 57 Water Temp 183 Battery Volt 26 Engine RPM 1800 Volts A 13.8 Volts B 13.8 Volts C 13.8 Hz 60.0 Amps A 86 Amps B 86 Amps C 86 KiloWatts 2000 KiloVars 500 Power Factor -.97		

* Critical Step

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
<p>16. NOTE: AEPS diesels go into a 5-minute cooldown period after Stop command is given. A "Cool Down Time Left" timer shows the time remaining in the 5-minute period (in seconds).</p> <p>CAUTION: The 286 relay must be reset prior to shutting down any of the remaining diesels to ensure a minimum of three diesels remain functional at all times.</p> <p>Prior to 5.10.11</p>		Applicant read note and caution	<p>S U</p> <p>Comments:</p>
<p>*17. To secure from the Online test, press button PA50107 for AEPS Diesel Generator #4</p> <p>Step 5.10.11</p>	<p>Generator #4 EDGPA5004 Control Panel is now displayed</p>	<p>Applicant pressed button PA50107 for AEPS Diesel Generator #4</p> <p>NOTE: Button PA50107 will not need to be pressed if Generator #4 EDGPA5004 Control Panel is already displayed</p>	<p>S U</p> <p>Comments:</p> <p>?</p>

* Critical Step

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
*18. Press the button "Generator Normal Stop" Step 5.10.12	The "Generator Normal Stop" button has been pressed	Applicant pressed the button "Generator Normal Stop"	S U Comments:
*19. Confirm the command by pressing the button "Yes Stop Generator" Step 5.10.13	The "Yes Stop Generator" button has been pressed	Applicant confirmed the command by pressing the button "Yes Stop Generator"	S U Comments:
20. Check breaker PA50107 opened Step 5.10.14	Breaker indication for PA50107 is lit green JPM complete	Applicant checked breaker PA50107 opened	S U Comments:
21. After the 5-minute cooldown period, check the diesel stopped Step 5.10.15	JPM is complete	Applicant waited 5 minutes to check diesel stopped	S U Comments:

* Critical Step

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
22. The JPM is complete		Record stop time on Page 1	S U Comments:

* Critical Step

Read to Performer: I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: The plant is in Mode 3.

Initiating Cues: The Control Room Supervisor (CRS) has directed you to perform an online test of EDGPA5004, AEPS Diesel Generator #4, in accordance with OTS-PA-00001, Operation And Testing Of The Alternate Emergency Power Source, Section 5.10.

The CRS directs you to take one (1) set of readings on Attachment 5 and then secure EDGPA5004.

The Outside OT has been briefed and is at EDGPA5004 to assist in the diesel test.

CALLAWAY PLANT JOB PERFORMANCE MEASURE

JPM No: Sim S7, Rev 0

KSA No: 005K4.11

Revision: Dec 2012

KSA Rating: 3.5 / 3.9

Job Title: RO / SROI

Duty: Residual Heat Removal System

Task Title: Transfer to Cold Leg Recirculation

Completion Time: 13 minutes

The performance of this task was evaluated against the standards contained in this JPM and determined to be:

☐ SATISFACTORY ☐ UNSATISFACTORY

Reason, if UNSATISFACTORY:

Evaluator Signature: _____ Date: _____

Task Performer: _____

Location of Performance:

Control Room _____ Simulator / Lab X Plant _____ Classroom _____

Method of Performance: Simulated _____ Performed X

AP: Yes TC: No

References: ES-1.3, Transfer To Cold Leg Recirculation, Rev 10

HO's:

Tools / Equipment:

Facility Representative: _____ Date: _____

Chief Examiner: _____ Date: _____

Read to Performer: I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: A large break Loss of Coolant Accident has occurred. The crew was performing the actions of E-1, Loss of Reactor Or Secondary Coolant, when MCB Annunciator 47C, RWST LOLO 1 AUTO XFR, alarmed.

Initiating Cues: ~~You have been directed~~ *The CCS directs you* to place ECCS in cold leg recirculation in accordance with ES-1.3, Transfer To Cold Leg Recircuation.

Notify the Control Room Supervisor when Step 3 is complete.

Note: Use IC 169 (Built from IC-163 used for Sim S3)
After the completion of JPM Sim 3, perform the following:
Insert Malfunction SB/K741TrainA/Fail_As_Is
Run/Freeze
Insert Plant Parameters BN/TBN01TAZTLIL/Value = 16.5
Verify Annun 47C is in alarm and that ECCS auto swapover is complete.
Freeze the simulator.

Task Standard: Upon completion of this JPM, the applicant will have aligned the RHR pumps for cold leg recirculation and the SI pumps and CCPs suction to the RHR pumps IAW ES-1.3.

Start Time: _____

Stop Time: _____

**TASK
NUMBER - ELEMENT**
CUE
STANDARD
SCORE

1. Obtain a verified working copy of ES-1.3	Provide applicant with procedure copy	Applicant obtained working copy of ES-1.3	S U Comments:
*2. Reset SI: SB HS-42A SB HS-43A Step 1	Auto SI block light is lit and red SI actuate light is off on Panel SB069	Applicant reset SI	S U Comments:
3. Check CCW flow to RHR heat exchangers: • Check CCW to RHR HX valves – open • EG HIS-101 • EG-HIS-102 Step 2.a	Red lights are lit and green lights are not lit for EG HIS-101 and 102	Applicant checked EG HIS-101 and EG HIS-102 valves were open	S U Comments:
4. Check Spent Fuel Pool HX CCW outlet valves – closed • EC HIS-11 • EC-HIS-12 Step 2.b	Green lights are lit and red lights are not lit for EC HIS-11 and 12	Applicant checked EC HIS-11 and EC HIS-12 were closed	S U Comments:

* CRITICAL STEP

**TASK
NUMBER - ELEMENT**
CUE
STANDARD
SCORE

<p>5. Check CCW pumps – one running in each train</p> <ul style="list-style-type: none"> • Red Train: • EG HIS-21 or EG → HIS-23 • Yellow Train: • EG HIS-22 or EG → HIS-24 <p>Step 2.c</p>	<p>Red light is lit and green light is not lit for EG HIS-21 and EG HIS-22</p>	<p>Applicant checked one CCW pump running in each train</p>	<p>S U</p> <p>Comments:</p>
<p>6. Align ECCS for cold leg recirculation:</p> <p>Check RHR pump automatic suction switchover – complete</p> <p><i>Noted procedure</i></p> <p>RHR Pump A: <i>Name</i></p> <ul style="list-style-type: none"> • EJ HIS-8811A – open BN HIS-8812A – closed <p>Step 3.a.1)</p>	<p>RHR Pump A – red light is not lit and green light is lit for EJ HIS-8811A; green light is not lit and red light is lit for BN HIS-8812A</p>	<p>Applicant checked RHR pump automatic suction switchover – complete for RHR Pump A</p> <p>Applicant went to Step 3.a.1) RNO to manually align Train A RHR</p>	<p>S U</p> <p>Comments:</p>
<p><i>Manually ALIGN RHR Pump A suction</i></p> <p>*7. Stop RHR Pump A:</p> <ul style="list-style-type: none"> • EJ HIS-1 <p>Step 3.a RNO 1)a</p>	<p>EJ HIS-1 red light is not lit and green light is lit</p>	<p>Applicant stopped RHR Pump A</p>	<p>S U</p> <p>Comments:</p>

* CRITICAL STEP

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
<p>*8. Close RWST To RHR Pump A Suction:</p> <ul style="list-style-type: none"> • BN HIS-8812A <p>Step 3.a RNO 1)b</p>	<p>BN HIS-8812A green light is lit and red light is not lit</p>	<p>Applicant closed BN HIS-8812A</p>	<p>S U</p> <p>Comments:</p>
<p>*9. Open Containment Recirc Sump To RHR Pump A Suction:</p> <ul style="list-style-type: none"> • EJ HIS-8811A <p>Step 3.a RNO 1)c</p>	<p>EJ HIS-8811A red light is lit and green light is not lit</p>	<p>Applicant opened EJ HIS-8811A</p>	<p>S U</p> <p>Comments:</p>
<p>10. Align ECCS for cold leg recirculation:</p> <p>Check RHR pump automatic suction switchover – complete</p> <p>RHR Pump B: EJ HIS-8811B – open BN HIS-8812B – closed</p> <p>Step 3.a.2)</p>	<p>RHR Pump B – red light is lit and green light is not lit for EJ HIS-8811B; green light is lit and red light is not lit for BN HIS-8812B</p>	<p>Applicant checked RHR pump automatic suction switchover – complete for RHR Pump B</p>	<p>S U</p> <p>Comments:</p>

* CRITICAL STEP

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
<p>*11. Check RHR pumps – both running</p> <ul style="list-style-type: none"> • EJ HIS-1 • EJ HIS-2 <p>Step 3.b</p>	<p>Red light is lit and green light is not lit for EJ HIS-2</p> <p>Green light is lit and red light is not lit for EJ HIS-1</p> <p>After starting RHR Pump A, EJ HIS-1 red light is lit and green light is not lit</p>	<p>Applicant checked both RHR pumps running</p> <p>Applicant started RHR Pump A using EJ HIS-1</p>	<p>S U</p> <p>Comments:</p>
<p>12. Check both the following conditions - satisfied</p> <ul style="list-style-type: none"> • RCS pressure – less than 1700 psig • SI pump discharge – flow indicated • EM FI-918 → • EM FI-922 → <p>Step 3.c</p>	<p>RCS pressure is 700 psig on BB PR-403</p> <p>EM FI-918 and 922 indicate 500 gpm</p>	<p>Applicant checked RCS pressure and SI pump discharge flow</p>	<p>S U</p> <p>Comments:</p>

* CRITICAL STEP

**TASK
NUMBER - ELEMENT**

CUE

STANDARD

SCORE

<p>*13. Close SI pump recirc to RWST valves:</p> <p>Close both the following:</p> <ul style="list-style-type: none"> • EM HIS-8814A <u>AND</u> • EM HIS-8814B <p><u>OR</u></p> <p>Perform the following:</p> <ol style="list-style-type: none"> 1) Place power lockout for BN HIS-8813A in non iso position: BN HIS-8813A 2) Close BN HIS-8813 3) Place power lockout for BN HIS-8813A in iso position: BN HIS-8813A <p>Step 3.d</p>	<p>Green light is lit and red light is not lit for EM HIS-8814A and EM HIS-8814B</p> <p>If BN HIS-8813 was operated, then green light is lit and red light is not lit for BN HIS-8813</p>	<p>Applicant closed SI pump recirc to RWST valves, EM HIS-8814A <u>AND</u> EM HIS-8814B</p> <p><u>OR</u></p> <p>performed the following:</p> <ol style="list-style-type: none"> 1) Placed power lockout for BN HIS-8813A in non iso position: BN HIS-8813A 2) Closed BN HIS-8813 3) Placed power lockout for BN HIS-8813A in iso position: BN HIS-8813A 	<p>S U</p> <p>Comments:</p>
<p>*14. Close RHR train hot leg recirc valves:</p> <ul style="list-style-type: none"> • EJ HIS-8716A • EJ HIS-8716B <p>Step 3.e</p>	<p>Green light is lit and red light is not lit for EJ HIS-8716A and 8716B</p>	<p>Applicant closed RHR train hot leg recirc valves</p>	<p>S U</p> <p>Comments:</p>

* CRITICAL STEP

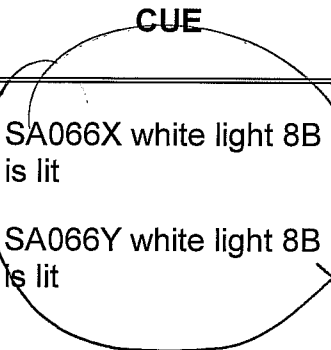

**TASK
NUMBER - ELEMENT****CUE****STANDARD****SCORE**

<p>*15. Open the following suction crosstie valves:</p> <ul style="list-style-type: none"> • CVCS to SI Pump A suction valves: • EM HIS-8807A → • EM HIS-8807B → <p>Step 3.f</p>	<p>Red light is lit and green light is not lit for EM HIS-8807A and 8807B</p>	<p>Applicant opened the CVCS to SI Pump A suction valves</p>	<p>S U</p> <p>Comments:</p>
<p>16. Check CVCS to SI pump isolation valve – open</p> <ul style="list-style-type: none"> • ESFAS status panel SIS section SA066Y location 2Q, CVCS To SI Pmp Iso Vlv EM HV-8924, white light – lit <p>Step 3.g</p>	<p>ESFAS status panel SIS section SA066Y, location 2Q, lit white</p>	<p>Applicant checked CVCS to SI pump isolation valve open</p>	<p>S U</p> <p>Comments:</p>
<p>*17. Open the following suction crosstie valves:</p> <ul style="list-style-type: none"> • RHR to charging pumps: • EJ HIS-8804A → • RHR to SI pump B suction: • EJ HIS-8804B → <p>Step 3.h</p>	<p>Red light is lit and green light is not lit for EJ HIS-8804A and 8804B</p>	<p>Applicant opened RHR to charging pumps and RHR to SI pump B suction valves</p>	<p>S U</p> <p>Comments:</p>

* CRITICAL STEP

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
18. Check if any SI pump – running • EM HIS-4 • EM HIS-5 Step 3.i	Red light is lit and green light is not lit for EM HIS-4 and 5	Applicant checked if any SI pump was running	S U Comments:
*19. Monitor SI pump flow and close RWST to SI pump suction valves: • BN HIS-8806A • BN HIS-8806B Step 3.j	Green light is lit and red light is not lit for BN HIS-8806A and 8806B SI pump discharge flow does not change	Applicant monitored SI pump flow and closed RWST to SI pump suction valves	S U Comments:
*20. Monitor CCP discharge flow and close CCP suction from RWST valves: • BN HIS-112D • BN HIS-112E Step 3.k	Green light is lit and red light is not lit for BN HIS-112D and 112E CCP pump discharge flow does not change	Applicant monitored CCP pump flow and closed RWST to CCP pump suction valves	S U Comments:
21. Check at least one flow path from recirculation sump to RCS – established Step 3.l	EJ FI-618 and EJ FI- 619 both indicate 2100 gpm flow <i>Examiner Note:</i> (RHR pump discharge flow would indicate that recirculation flow had been established)	Applicant checked at least one flow path from recirculation sump to RCS was established	S U Comments:

* CRITICAL STEP

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
22. Check RHR Pump Room Coolers – running • ESFAS status panels SIS sections: • SA066X white light 8B (SGL10A) – Lit → • SA066Y white light 8B (SGL10B) – Lit → Step 3.m	 SA066X white light 8B is lit SA066Y white light 8B is lit	Applicant checked RHR Pump Room Coolers were running	S U Comments:
23. <i>Inform CRS when Step 3 is complete.</i>		Applicant informed CRS that ES-1.3 was complete through Step 3 	S U Comments:
24. The JPM is complete		Record stop time on Page 1	S U Comments:

* CRITICAL STEP

Read to Performer: I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: A large break Loss of Coolant Accident has occurred. The crew was performing the actions of E-1, Loss of Reactor Or Secondary Coolant, when MCB Annunciator 47C, RWST LOLO 1 AUTO XFR, alarmed.

Initiating Cues: You have been directed to place ECCS in cold leg recirculation in accordance with ES-1.3, Transfer To Cold Leg Recirculation.

Notify the Control Room Supervisor when Step 3 is complete.

CALLAWAY PLANT JOB PERFORMANCE MEASURE

JPM No: Sim S8, Rev 0

KSA No: 029G2.1.29

Revision: Oct 2012

KSA Rating: 4.1 / 4.0

JOB TITLE: RO / SROI

Duty: Containment Purge System

Task Title: Remove the Containment Mini-Purge System From Service

Completion Time: 11 minutes

The performance of this task was evaluated against the standards contained in this JPM and determined to be:

[] SATISFACTORY [] UNSATISFACTORY

Reason, if UNSATISFACTORY:

Evaluator Signature: _____ Date: _____

Task Performer: _____

Location of Performance:

Control Room _____ Simulator / Lab X Plant _____ Classroom _____

Method of Performance: Simulated _____ Performed X

AP: No TC: No

References: OTN-GT-00001, Containment Purge System, Rev 28

HB
Tools / Equipment:

Facility Representative: _____ Date: _____

Chief Examiner: _____ Date: _____

Read to Performer: I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: The plant is in Mode 1. The containment mini-purge system had been placed in service to support containment maintenance activities. The Control Room Supervisor (CRS) has the Gaseous Rad Release Permit.

Initiating Cues: The maintenance activities inside containment have been completed.
The CRS ^{directs} ~~has directed~~ you to remove containment mini-purge from service in accordance with OTN-GT-00001, Containment Purge System, Section 5.3.
All pre-req's are met.

Notes: Use Mode 161.
Place containment mini-purge in service IAW OTN-GT-00001, Section 5.2.

Task Standard: Upon completion of this JPM, the applicant will have removed containment mini-purge from service IAW OTN-GT-00001.

Start Time: _____

Stop Time: _____

**TASK
NUMBER - ELEMENT****CUE****STANDARD****SCORE**

1. Obtain a verified working copy of OTN-GT-00001	Provide applicant with procedure copy	Applicant obtained working copy of OTN-GT-00001	S U Comments:
2. Review Precautions and Limitations Section 3.0	All Precautions and Limitations are satisfied	Applicant reviewed Precautions and Limitations	S U Comments:
3. Review Prerequisites Section 4.0	All Prerequisites are satisfied	Applicant reviewed Prerequisites <i>Int Cue</i>	S U Comments:
4. If containment equipment hatch is open during core alterations and mini-purge exhaust must be secured, perform one of the following: Step 5.3.1 /		Applicant read step and determined that it was N/A for the given initial conditions and goes to Step 5.3.2	S U Comments:

* Critical Step

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
<p>*5. Using GT HIS-5, Ctmt Mini Purge Air Sply CTMT Iso, close GTHZ0005</p> <p>Step 5.3.2</p>	<p>GT HIS-5 green light is lit and the red light is not lit</p>	<p>Applicant closed GTHZ0005 using GT HIS-5, Ctmt Mini Purge Air Sply CTMT Iso,</p>	<p>S U</p> <p>Comments:</p>
<p>*6. Using GT HIS-4, Ctmt Mini Purge Air Sply CTMT Iso, close GTHZ0004</p> <p>Step 5.3.3</p>	<p>GT HIS-4 green light is lit and the red light is not lit</p>	<p>Applicant closed GTHZ0004 using GT HIS-4, Ctmt Mini Purge Air Sply CTMT Iso,</p>	<p>S U</p> <p>Comments:</p>
<p>*7. Using GT HIS-23, CTMT Mini Purge Air Sply Unit, stop SGT02</p> <p>Step 5.3.4</p>	<p>GT HIS-23 green light is lit and the red light is not lit</p>	<p>Applicant stopped SGT02 using GT HIS-23, CTMT Mini Purge Air Sply Unit</p>	<p>S U</p> <p>Comments:</p>

* Critical Step

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
<p>*8. Using GT HIS-26, CTMT Purge Sys Air Sply Damper, close GTHZ0026</p> <p>Step 5.3.5</p>	<p>GT HIS-26 green light is lit and the red light is not lit</p>	<p>Applicant closed GTHZ0026 using GT HIS-26, CTMT Purge Sys Air Sply Damper</p>	<p>S U</p> <p>Comments:</p>
<p>*9. Using GT HIS-27, CTMT Purge Sys Air Sply Damper, close GTHZ0027</p> <p>Step 5.3.6</p>	<p>GT HIS-27 green light is lit and the red light is not lit</p>	<p>Applicant closed GTHZ0027 using GT HIS-27, CTMT Purge Sys Air Sply Damper</p>	<p>S U</p> <p>Comments:</p>
<p>*10. Using GT HIS-20, CTMT Mini Purge Exh Fan & Damper, stop CGT02</p> <p>Step 5.3.7</p>	<p>GT HIS-20 green lights are lit and the red lights are not lit</p>	<p>Applicant stopped CGT02 using GT HIS-20, CTMT Mini Purge Exh Fan & Damper</p>	<p>S U</p> <p>Comments:</p>

* Critical Step

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
<p>*11. Using GT HIS-11, CTMT Mini Purge Exh Inner CTMT Iso, close GTHZ0011</p> <p>Step 5.3.8</p>	<p>GT HIS-11 green light is lit and the red light is not lit</p>	<p>Applicant closed GTHZ0011 using GT HIS-11, CTMT Mini Purge Exh Inner CTMT Iso</p>	<p>S U</p> <p>Comments:</p>
<p>*12. Using GT HIS-12, CTMT Mini Purge Exh Outer CTMT Iso, close GTHZ0012</p> <p>Step 5.3.9</p>	<p>GT HIS-12 green light is lit and the red light is not lit</p>	<p>Applicant closed GTHZ0012 using GT HIS-12, CTMT Mini Purge Exh Outer CTMT Iso</p>	<p>S U</p> <p>Comments:</p>
<p>*13. Using GT HIS-41, CTMT Mini Purge Sply/Exh Dampers, close the following:</p> <ul style="list-style-type: none"> ● GTHZ0041, CTMT Mini-Purge Exh Inner CTMT Upstrm Dmpr Oper <p>AND</p> <ul style="list-style-type: none"> ● GTHZ0042, CTMT Mini-Purge Air Sply Inner CTMT Dnstrm Dmpr Oper <p>Step 5.3.10</p>	<p>GT HIS-41 green light is lit and the red light is not lit</p>	<p>Applicant closed GTHZ0041 and GTHZ0042 using GT HIS-41, CTMT Mini Purge Sply/Exh Dampers</p>	<p>S U</p> <p>Comments:</p>

* Critical Step

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
*14. Using GT HIS-28, CTMT Purge Exh Damper, close GTHZ0028 Step 5.3.11	GT HIS-28 green light is lit and the red light is not lit	Applicant closed GTHZ0028 using GT HIS-28, CTMT Purge Exh Damper	S U Comments:
*15. Using GT HIS-29, CTMT Purge Exh Damper, close GTHZ0029 Step 5.3.12	GT HIS-29 green light is lit and the red light is not lit	Applicant closed GTHZ0029 using GT HIS-29, CTMT Purge Exh Damper	S U Comments:
16. Record date and time dampers were closed on Gaseous Rad Release Permit Step 5.3.13	Date and time dampers were closed have been recorded on the Gaseous Rad Release Permit <i>EXCER: CRS acknowledges</i>	Applicant ensured date and time dampers were closed recorded on Gaseous Rad Release Permit <i>informed CRS</i> <i>of date & time</i>	S U Comments:

* Critical Step

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
<p>17. Record containment pressure as read on GT PDI-40, CTMT ΔP, or plant computer point GTD0040 on Gaseous Rad Release Permit</p> <p>Step 5.3.14</p>	<p>Containment pressure has been recorded on Gaseous Rad Release Permit</p> <p><i>Ex Cae</i> <i>CRS acknowledges</i></p>	<p>Applicant ensured containment pressure as recorded on Gaseous Rad Release Permit</p> <p><i>Informed CRS</i></p>	<p>S U</p> <p>Comments:</p>
<p>18. Notify Rad/Chem Technician (Count Room) of time of purge completion</p> <p>Step 5.3.15</p>	<p><i>Exam Cae</i> Rad/Chem Technician (Count Room) acknowledges</p>	<p>Applicant notified Rad/Chem Technician (Count Room) of time of purge completion</p>	<p>S U</p> <p>Comments:</p>

* Critical Step

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
<p>19. If in Modes 1-4 or preparing to enter Mode 4 from Mode 5, remove "Containment Purge In Progress Do Not Bypass" covers from the following switches:</p> <ul style="list-style-type: none"> • GTRT22 (located on Drawer 7N168-1 in SA036D) <p>AND</p> <ul style="list-style-type: none"> • GTRT33 (located on Drawer 7N168-2 in SA036E) <p>Step 5.3.16</p>	<p>"Containment Purge In Progress Do Not Bypass" covers have been removed from GTRT22 and GTRT33</p>	<p>Applicant removed "Containment Purge In Progress Do Not Bypass" covers from GTRT22 and GTRT33</p>	<p>S U</p> <p>Comments:</p>
<p>20. If in Modes 5 or 6 and not preparing for entry into Mode 4, ensure the following are in operate:</p> <ul style="list-style-type: none"> • GTRT22 and GTRT33 <p>Step 5.3.17</p>		<p>Applicant recognized step was N/A for given conditions and moved to Step 5.3.18</p>	<p>S U</p> <p>Comments:</p>

* Critical Step

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
23. If desired, remove trends from plant computer: SDR0041H SDR0042H GTD0040 Step 5.3.19	Trends have been moved from the plant computer	Applicant removed trends from plant computer, if desired NOTE: Applicant may decide NOT to remove plant trends at this time	S U Comments:
24. The JPM is complete		Record stop time on Page 1	

* Critical Step

Read to Performer: I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: The plant is in Mode 1. The containment mini-purge system had been placed in service to support containment maintenance activities. The Control Room Supervisor (CRS) has the Gaseous Rad Release Permit.

Initiating Cues: The maintenance activities inside containment have been completed.

The CRS has directed you to remove containment mini-purge from service in accordance with OTN-GT-00001, Containment Purge System, Section 5.3.

CALLAWAY PLANT JOB PERFORMANCE MEASURE

JPM No: Plt P1, Rev 0

KSA No: 062A2.10

Revision: Oct 2012

KSA Rating: 3.0 / 3.3

Job Title: RO / SROI / SROU

Duty: A.C. Electrical Distribution

Task Title: Shift Instrument Bus to Backup Power Supply

Completion Time: 12 Minutes

The performance of this task was evaluated against the standards contained in this JPM and determined to be:

[] SATISFACTORY [] UNSATISFACTORY

Reason, if UNSATISFACTORY:

Evaluator Signature: _____ Date: _____

Task Performer: _____

Location of Performance:

Control Room _____ Simulator/Lab _____ Plant X Classroom _____

Method of Performance: Simulated X Performed _____
AP N TC N

References: OTS-NN-00013, NN13 Inverter Outage - IPTE, Rev. 14

H.O.
Tools/Equipment: PPE

Facility Representative: _____ Date: _____

Chief Examiner: _____ Date: _____

Read to Performer: I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: The plant is operating in Mode 1.
A problem was discovered on NN13, 7.5 KVA Inv Fed From NK0311.
Engineering recommends that it be deenergized as soon as practical.

A Pre-Job Brief has been performed. *Pre-regs are met.*
Key #78 to the Kirk Key Interlock is in your possession.

Steps 5.1.1 through 5.1.3 of OTS-NN-00013, NN13 Inverter Outage, are complete.

Initiating Cues: The Control Room Supervisor (CRS) directs you to transfer NN03, 120 VAC Inst Pnl Class IE Grp 3, to XNN05, Alt Feed XFMR To Inst AC Busses NN01 And NN03, by completing OTS-NN-00013, Sections 5.1 and 5.2.

↑ procedure handbook is place kept

Notes: **All operator actions are to be simulated.**

Task Standard: Upon completion of this JPM, the applicant will have demonstrated the ability to transfer NN03 to XNN05.

Weak - what are Crt Steps?

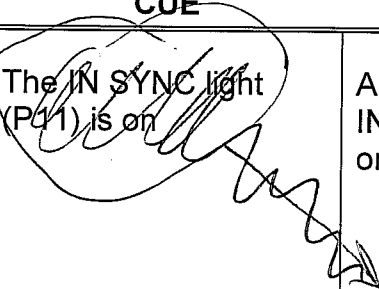
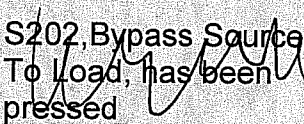
Start Time: _____

Stop Time: _____

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
1. Obtain a verified working copy of OTS-NN-00013	Provide applicant with procedure copy	Applicant obtained working copy of OTS-NN-00013	S U Comments:
2. Ensure the applicable Prerequisites are met (Section 4.0) Step 5.1.1	All Prerequisites are satisfied	Applicant reviewed Prerequisites (Init Conditions)	S U Comments:
3. Review Precautions and Limitations (Section 3.0) Step 5.1.2	All Precautions and Limitations are satisfied	Applicant reviewed Precautions and Limitations	S U Comments:
4. Perform the following for Attachment 4, Plant Lineup For Transferring NN03: Step 5.1.3	If asked, respond that Attachment 4 is complete	Applicant recognized that step was complete based on Initial Conditions and went to Step 5.1.4	S U Comments:

Init Conditions
States these are complete!

* Critical Step

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
5. Transfer NN13 from Normal to Alternate as follows: Check the IN SYNC light (P11) is on Step 5.1.4.a	 The IN SYNC light (P11) is on	Applicant checked the IN SYNC light (P11) is on	S U Comments:
6. NOTE: The following step makes NN13 inoperable which affects the following Technical Specifications: T/S 3.8.7 T/S 3.8.8 Prior to 5.1.4.b	<i>Exam Cue:</i> <i>If asked, inform applicant CRS will address T.S.'s</i>	Applicant read note	S U Comments:
*7. Press S202, Bypass Source To Load, and check the following: Step 5.1.4.b	 S202, Bypass Source To Load, has been pressed	Applicant pressed S202, Bypass Source To Load	S U Comments:

* Critical Step

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
8. Check the following: The IN SYNC amber light (P11) is on Step 5.1.4.b	The IN SYNC amber light (P11) is on <i>Examiner</i>	Applicant checked the IN SYNC amber light (P11) was on NOTE: JPM Steps 8- 11 may be performed in any order.	S U Comments:
9. Check the following: The Bypass Source Supplying Load red light (P202) is on Step 5.1.4.b	The Bypass Source Supplying Load red light (P202) is on	Applicant checked the The Bypass Source Supplying Load red light (P202) was on NOTE: JPM Steps 8- 11 may be performed in any order.	S U Comments:
10. Check the following: The Inverter Supplying Load amber light (P201) is off Step 5.1.4.b	The Inverter Supplying Load amber light (P201) is off	Applicant checked the Inverter Supplying Load amber light (P201) was off NOTE: JPM Steps 8- 11 may be performed in any order.	S U Comments:

* Critical Step

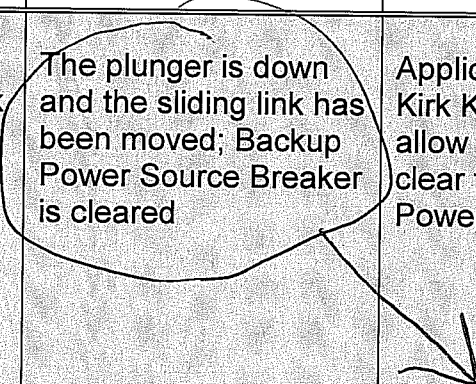
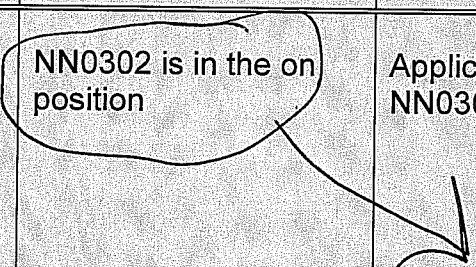
TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
11. Check the following: MCB Annunciator 27B, NN13 INV TRBL/XFER, is on Step 5.1.4.b	<i>Examiner Cue!</i> Control Room reports MCB Annunciator 27B, NN13 INV TRBL/XFER, is on	Applicant contacted the Control Room to check MCB Annunciator 27B, NN13 INV TRBL/XFER was on <i>NOTE: JPM Steps 8-11 may be performed in any order.</i>	S U Comments:
<i>5.2 Unloading NN03 & transfer to XNN05</i> 12. Ensure Section 5.1 is complete Step 5.2.1	<i>[Handwritten scribbles]</i>	Applicant ensured Section 5.1 was complete <i>[Handwritten scribbles]</i>	S U Comments: <i>[Handwritten OK]</i>
13. Ensure the applicable Prerequisites of Section 4.0 are met Step 5.2.2	The applicable Prerequisites of Section 4.0 are met <i>[Handwritten scribbles]</i>	Applicant ensured the applicable Prerequisites of Section 4.0 were met <i>What specific pre-req's does this step mean?</i>	S U Comments:

* Critical Step

* Critical Step

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE S U
16. IF directed by the SM/CRS, perform Attachment 2, Sequential Unloading Of NN03 Step 5.2.4	<i>Examiner Cue:</i> NN03 loads will <u>NOT</u> be sequentially unloaded	Applicant acknowledged ^{and determined} that Attachment 2 will not be performed and proceeded to Step 5.2.5	S U Comments:
17. NOTE: The following step de-energizes NN03, making it inoperable. This may impact the following Technical Specifications: T/S 3.8.1 T/S 3.8.2 T/S 3.8.9 T/S 3.8.10 Prior to 5.2.5	<i>Examiner Cue:</i> <i>If asked, CRS will review TS's</i>	Applicant read note	S U Comments:
*18. Open NN0301, Fdr Bkr To NN03-Class 1E AC Dist Pnl From Inv NN13 Step 5.2.5	NN0301 is in the off position	Applicant opened NN0301	S U Comments:

* Critical Step

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
19. Check Annunciator 27A, NN03 INST BUS UV, is on Step 5.2.6	<u>Examiner Cue:</u> Control Room reports Annunciator 27A, NN03 INST BUS UV, is on	Applicant contacted the Control Room to check Annunciator 27A, NN03 INST BUS UV, was on.	S U Comments:
*20. On NN03, operate the Kirk Key Interlock to allow the sliding link to clear the Backup Power Source Breaker Step 5.2.7	 The plunger is down and the sliding link has been moved; Backup Power Source Breaker is cleared	Applicant operated the Kirk Key Interlock to allow the sliding link to clear the Backup Power Source Breaker	S U Comments:
*21. Close NN0302, Alt Fdr Bkr To NN03 Class IE AC Dist Pnl From XFMR XNN05 Step 5.2.8	 NN0302 is in the on position	Applicant closed NN0302	S U Comments:

* Critical Step

* Critical Step

Read to Performer: I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: The plant is operating in Mode 1.
A problem was discovered on NN13, 7.5 KVA Inv Fed From NK0311.
Engineering recommends that it be deenergized as soon as practical.

A Pre-Job Brief has been performed.
Key #78 to the Kirk Key Interlock is in your possession.
Steps 5.1.1 through 5.1.3 of OTS-NN-00013, NN13 Inverter Outage, are complete.

Initiating Cues: The Control Room Supervisor (CRS) directs you to transfer NN03, 120 VAC Inst Pnl Class IE Grp 3, to XNN05, Alt Feed XFMR To Inst AC Busses NN01 And NN03, by completing OTS-NN-00013, Sections 5.1 and 5.2.

Notes: All operator actions are to be simulated.

CALLAWAY PLANT JOB PERFORMANCE MEASURE

JPM No: Plt P2, Rev 0

KSA No: 059A2.12

Revision: Dec 2012

KSA Rating: 3.1 / 3.4

Job Title: RO / SROI / SROU

Duty: Main Feedwater (MFW) System

Task Title: Locally Operate 'C' Main Feedwater Regulating Valve (MFRV)

Completion Time: 15 Minutes

LO
The performance of this task was evaluated against the standards contained in this JPM and determined to be:

[] SATISFACTORY [] UNSATISFACTORY

Reason, if UNSATISFACTORY:

Evaluator Signature: _____ Date: _____

Task Performer: _____

Location of Performance:

Control Room _____ Simulator / Lab _____ Plant X Classroom _____

Method of Performance: Simulated X Performed _____

AP: N TC: N

References: OTN-AE-00001 Addendum 8, Local Operation Of Main Feedwater Regulating Valves (MFRV), Rev 4

H.S.

Tools / Equipment: PPE

Facility Representative: _____ Date: _____

Chief Examiner: _____ Date: _____

1

Read to Performer: I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Bullets? Initial Conditions: The plant is in Mode 1. I&C is required to adjust main feedwater regulating valve, AE FCV-0530, due to improper operation. A pre job brief has been conducted. ^(pre-reqs complete) OTN-AE-00001, Add 8, Local Operation Of Main Feedwater Regulating Valves (MFRV), will be used to control feedwater to 'C' Steam Generator while I&C is working on AE FCV-0530. All required equipment is at the valve. I&C and the field supervisor are ready.

Bullets? Initiating Cues: The CRS ^{directs} ~~has directed~~ you to work with the BOP Operator to take manual control of AE FCV-0530 and control feedwater to 'C' Steam Generator IAW OTN-AE-00001, Add 8, Section 3.5. Inform the CRS when the MFRV is mechanically aligned to the handwheel and the MFRV can only be operated by the local operator using the handwheel. *This is step 3.5.11*

Task Standard: Upon completion of this JPM the applicant will have placed AE FCV-0530 in manual, ready to control feedwater to 'C' Steam Generator.



Weak-Critical Steps?

Start Time: _____

Stop Time: _____

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
1. Obtain a verified working copy of OTN-AE-00001, Add 8	Provide applicant with procedure copy	Applicant obtained working copy of OTN-AE-00001, Add 8	S U Comments:
2. Review Precautions and Limitations	All Precautions and Limitations are satisfied	Applicant reviewed Precautions and Limitations	S U Comments:
3. Review Prerequisites	All Prerequisites are satisfied	Applicant reviewed Prerequisites (Int Cond)	S U Comments:
3.5 AEV0530 - Local Op Using Handwheel 4. Cycle MFRV Bypass Valve as follows: Ensure AE LK-570, SG C MN FW BYP LEV CTRL, in MAN and Closed Step 3.5.1.a	BOP informs you AE LK-570, SG C MN FW BYP LEV CTRL, is in MAN and Closed <u>Examiner Cue!</u>	Applicant contacted BOP and ensured AE LK-570, SG C MN FW BYP LEV CTRL, is in MAN and Closed	S U Comments:
5. Close one of the following to isolate MFRV Bypass: • AEV0264, of Title • AEV0263, SG C MFW REG VLV BYP UPSTRM DNSTRM ISO Step 3.5.1.b	After candidate closes valve. <u>Either valve checked.</u> AEV0264 or AEV0263 has threads showing and handwheel is down	Applicant closed AEV0264 AEV0263 <u>or</u>	S U Comments: Cnt step

* Critical Step

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
6. Notify BOP operator that isolation valve for MFRV Bypass is Closed Step 3.5.1.c	<u>Examiner Cue:</u> BOP acknowledges MFRV Bypass iso is closed	Applicant informed BOP MFRV Bypass iso is closed	S U Comments:
7. Using AE LK-570, SG MN FW BYP LVL CTRL, cycle AEFCV0570 Step 3.5.1.d	<u>Examiner Cue:</u> BOP informs you that AE LK-570, SG MN FW BYP LVL CTRL, has been cycled	Applicant contacted the BOP to ^{use} cycle AE LK-570, SG MN FW BYP LVL CTRL to cycle AEFCV0570	S U Comments: 
8. Open isolation valve closed in Step 3.5.1.b Step 3.5.1.e	After candidate opens valve: Either valve checked: AEV0264 or AEV0263 has no threads showing and handwheel is up	Applicant opened AEV0264 AEV0263 <u>or</u>	S U Comments: 
9. NOTE: Adjusting the MFRV Bypass Valve to 60% in the following step allows for some remote adjustment of FW flow once the MFRV is placed in local handwheel operation. Prior to 3.5.2		Applicant read note	S U Comments:
10. Adjust AE LK-570, SG MN FW BYP LVL CTRL, to approximately 60% Step 3.5.2	<u>Examiner Cue:</u> BOP informs you AE LK-570, SG MN FW BYP LVL CTRL, has been adjusted to approximately 60%	Applicant contacted BOP to adjust AE LK-570, SG MN FW BYP LVL CTRL, to approximately 60%	S U Comments:

* Critical Step

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
11. Using Control Room computer displays, ensure affected SG parameters are relatively stable Step 3.5.3	<i>Examiner Cue:</i> BOP informs you that 'C' SG parameters are stable with level at 50%	Applicant contacted BOP to ensure 'C' SG parameters are stable	S U Comments:
12. Ensure communications have been established between local operator and BOP Operator Step 3.5.4	<i>Examiner Cue:</i> You have a headset on in communication with the BOP Operator	Applicant ensured communications were established	S U Comments:
13. Record the following for AEFCV0530, SG C MFW REG VLV: Local (LCD display) % Full Open AE FK-530, SG C MFW REG VLV CTRL: % Full Open Step 3.5.5	<i>Local display is 80% full open</i> <i>EC:</i> BOP informs you that AE FK-530 indicates 80% full open	Applicant recorded local display at 80% Full Open Applicant contacted BOP to get AEFCV0530 indication <i>and recorded in procedure</i>	S U Comments: <i>CS</i>
14. NOTE: While it might not be possible for all repair situations, MFRV position should not be changed using the controller until requested by the local operator. This simplifies restoration to MCB control. Prior to Step 3.5.6		Applicant read note ✓	S U Comments:

* Critical Step

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
15. Place AE FK-530, SG C MFW REG VLV CTRL, in MAN Step 3.5.6	<u>EC:</u> BOP informs you AE FK-530, SG C MFW REG VLV CTRL, is in MAN	Applicant contacted BOP to place AE FK-530, SG C MFW REG VLV CTRL, in MAN	S U Comments:
16. NOTE: The MFRV Bypass Valve is operated in MAN due to the lead/lag characteristics of the control circuit. Prior to Step 3.5.7		Applicant read note	S U Comments:
17. Adjust AE LK-570, SG C MN FW BYP LEV CTRL, to maintain stable SG level Step 3.5.7	<u>EC:</u> BOP informs you 'C' SG level is stable at 50%	Applicant contacted BOP to adjust AE LK-570, SG C MN FW BYP LEV CTRL, to maintain stable SG level	S U Comments:
*18. Rotate AEFCV0530 handwheel to align handwheel engaging mechanism with stem engaging mechanism Step 3.5.8	AEFCV0530 handwheel has holes aligned when looking through it	Applicant rotated AEFCV0530 handwheel to engage with stem	S U Comments:
*19. Place T-handle in alignment holes Step 3.5.9	After applicant demonstrates where the T-handle is and where the alignment holes are: T-handle is in the alignment holes	Applicant placed T-handle in the alignment holes	S U Comments:

* Critical Step

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
*20. Close the following to bleed air from the top and bottom of actuator: • AEFCV0530V4, etc • AEFCV0530O ACT 3-WAY ISO/BLEED INST AIR VALVE Step 3.5.10	AEFCV0530V4 is in the vent position <i>Examiner</i> Note: This is a 3-way valve with a vent position. When it is aligned to vent you should hear a small rush of air. <i>EC</i>	Applicant closed AEFCV0530V4 <i>Examiner</i> Note: Steps 20 and 21 may be performed in any order.	S U Comments:
*21. Close the following to bleed air from the top and bottom of actuator: • AEFCV0530V6, ISOLATION/BLEED AIR VALVE TO UPPER AND LOWER PISTON Step 3.5.10	AEFCV0530V6 is in the vent position <i>Examiner</i> Note: This is a 3-way valve with a vent position. When it is aligned to vent you should hear a small rush of air. <i>Same as above</i>	Applicant closed AEFCV0530V6 Note: Steps 20 and 21 may be performed in any order.	S U Comments:
22. Notify Control Room that AEFCV0530, SG C MFW REG VLV, is mechanically aligned to handwheel and can only to operated locally Step 3.5.11	<i>Examiner Cue:</i> BOP acknowledges AEFCV0530 is aligned for local control JPM is complete	Applicant informed BOP AEFCV0530 is in local control	S U Comments:
23. The JPM is complete		Record stop time on Page 1	S U Comments:

* Critical Step

Read to Performer: I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: The plant is in Mode 1. I&C is required to adjust main feedwater regulating valve, AE FCV-0530, due to improper operation. A pre job brief has been conducted. OTN-AE-00001, Add 8, Local Operation Of Main Feedwater Regulating Valves (MFRV), will be used to control feedwater to 'C' Steam Generator while I&C is working on AE FCV-0530. All required equipment is at the valve. I&C and the field supervisor are ready.

Initiating Cues: The CRS has directed you to work with the BOP Operator to take manual control of AE FCV-0530 and control feedwater to 'C' Steam Generator IAW OTN-AE-00001, Add 8, Section 3.5. Inform the CRS when the MFRV is mechanically aligned to the handwheel and the MFRV can only be operated by the local operator using the handwheel.

CALLAWAY ENERGY CENTER JOB PERFORMANCE MEASURE

JPM No: Plt P3, Rev 0

KSA No: 033K1.05

Revision: Oct 2012

KSA Rating: 2.7 / 2.8

Job Title: RO / SROI / SROU

Duty: Spent Fuel Pool Cooling System *JTA?*

Task Title: Place RWST in Recirculation

LO/JTA
Validation
Completion Time: 20 Minutes

The performance of this task was evaluated against the standards contained in this JPM and determined to be:

☐ SATISFACTORY ☐ UNSATISFACTORY

Reason, if UNSATISFACTORY:

Evaluator Signature: _____ Date: _____

Task Performer: _____

Location of Performance:

Control Room _____ Simulator / Lab _____ Plant X Classroom _____

Method of Performance: Simulated X Performed _____

AP: Y *TC: N*

References: OTN-EC-00001, Addendum 3, RWST Cleanup Operations, Rev 13

H.S:

Tools / Equipment: PPE

Facility Representative: _____ DATE: _____

Chief Examiner: _____ DATE: _____

Repeat: Original JPM?

M.H.R

Read to Performer: I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: Callaway Plant is in Mode 1. Chemistry has requested that the RWST be placed in recirculation.

Initiating Cues: The Control Room Supervisor (CRS) ^{directs} ~~has directed~~ you to place the RWST in recirculation per OTN-EC-00001, Addendum 3, RWST Cleanup Operations, Section 5.1.

A second OT and RO have been briefed on the assigned job to assist with required actions not in the RCA. *Pre-regs are complete.*

~~Notify the CRS that the RWST is in recirculation after notifying Chemistry of RWST status in Step 5.1.20.~~

not a step in JPM

Task Standard: Upon completion of this JPM, the applicant will have placed the RWST in recirc.

weak CS?

Start Time: _____

Stop Time: _____

**TASK
NUMBER - ELEMENT**

CUE

STANDARD
SCORE

1. Obtain a verified working copy of OTN-EC-00001, Add 3	Provide applicant with procedure copy	Applicant obtained working copy of OTN-EC-00001, Add 3	S U Comments:
2. Review Precautions and Limitations Section 3.0	All Precautions and Limitations are satisfied	Applicant reviewed Precautions and Limitations	S U Comments:
3. Review Prerequisites Section 4.0	All Prerequisites are satisfied	Applicant reviewed Prerequisites (Init Card)	S U Comments:
4. NOTE: In order to limit pump heat added to the RWST during the summer, the recirculation should be secured as soon as possible after chemistry sampling has been completed. Prior to 5.1		Applicant read note	S U Comments:

Individual 3035 - Consistent w/ Reg IV *my comment*

* Critical Step

<i>JPM Step</i> TASK NUMBER	<i>TBL</i> ELEMENT	CUE	Performance STANDARD	SCORE
5.	<i>5.1 RWST Recirculation</i> Check the requirements of Step 4.3 are met Step 5.1.1	<i>EC:</i> RWST level is 98% No other systems are aligned to RWST return header	Applicant checked RWST level and no other system aligned to RWST return header	S U Comments:
6.	ENSURE operations which alter normal Fuel Pool Cooling And Cleanup System alignments are NOT in progress Step 5.1.2	<i>EC:</i> NO operations which alter normal Fuel Pool Cooling And Cleanup system alignments are in progress	Applicant ensured operations which alter normal Fuel Pool Cooling And Cleanup system alignments were NOT in progress	S U Comments:

* Critical Step

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
<p>7. Ensure: The Fuel Pool Skimmer System is shutdown per applicable section of either:</p> <p>• OTN-EC-00001 ADD02, Spent Fuel Pool Skimmer Operations</p> <p>- OR -</p> <p>• OTN-EC-00001 ADD04, Refuel Pool Cleanup Operation</p> <p>The Fuel Pool Cleanup System is shutdown per applicable section of either:</p> <p>• OTN-EC-00001 ADD01, Spent Fuel Pool Cleanup Operations</p> <p>- OR -</p> <p>• OTN-EC-00001 ADD04, Refuel Pool Cleanup Operation</p> <p>Step 5.1.3</p>	<p>Both systems are shutdown per the appropriate procedures</p> <p><i>Does it matter which procedure?</i></p>	<p>Applicant ensured both systems are shutdown per the appropriate procedure</p>	<p>S U</p> <p>Comments:</p>
<p>8. Update control room status board for performing RWST recirculation</p> <p>Step 5.1.4</p>	<p><u>EC:</u> The Control Room Status Board for performing RWST recirculation has been updated by the RO</p>	<p>Applicant ensured the Control Room Status Board had been updated for performing RWST recirculation</p>	<p>S U</p> <p>Comments:</p>

* Critical Step

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
9. NOTE: Monitoring of fluid inventories via these trend graphs should only be necessary in the initial phase of the evolution, but should continue until there is reasonable assurance of no inventory transfers. Prior to 5.1.5		Candidate read note ✓	S U Comments:
10. Ensure a trend graph is established to allow monitoring of inventories between RWST and Spent Fuel Pool Step 5.1.5	<u>EC:</u> A trend graph has been established to allow monitoring of inventories between RWST and Spent Fuel Pool by the RO	Applicant ensured a trend graph was established to allow monitoring of inventories between RWST and Spent Fuel Pool	S U Comments:
11. Request Chemistry determine desired alignment (in service/bypassed) for the Fuel Pool Cleanup Demineralizer Step 5.1.6	<u>EC:</u> Chemistry responds to <u>bypass</u> Fuel Pool Cleanup Demineralizer	Applicant requested Chemistry determine desired alignment (in service/ <u>bypassed</u>) for the Fuel Pool Cleanup Demineralizer	S U Comments:

* Critical Step

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
12. Direct Radwaste Watchstander to align Fuel Pool Cleanup Demineralizer in service or bypassed per OTN-EC-00001 ADD05, Fuel Pool Cleanup Demineralizer Operations Step 5.1.7	<u>EC:</u> Radwaste Watchstander has aligned Fuel Pool Cleanup Demineralizer to <u>bypass</u> per OTN-EC-00001 ADD05	Applicant directed Radwaste Watchstander to align Fuel Pool Cleanup Demineralizer <u>bypassed</u> per OTN-EC-00001 ADD05, as directed by Chemistry in previous step	S U Comments:

* Critical Step

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
<p>13. To prevent transfer of water between SFP and RWST, hang Equipment Warning signs stating, "The RWST is in the cleanup/recirculation lineup. Do NOT place the SFP skimmers in service." on:</p> <ul style="list-style-type: none"> • ECV0099, SFP Skimmer A To Fuel Pool Skimmer Pmp Iso • ECV0100, SFP Skimmer B To Fuel Pool Skimmer Pmp Iso • ECV0101, SFP Skimmer C To Fuel Pool Skimmer Pmp Iso <p>Step 5.1.8</p>	<p>The equipment warning signs have been hung</p> <p><i>EC:</i> <i>Where would you find the tags?</i> <i>(Locker —)</i></p> <p><i>Note: Applicant will need PA301 Key</i></p>	<p>Applicant demonstrated the ability to find each of the following valves and hang equipment warning signs on:</p> <ul style="list-style-type: none"> • ECV0099 • ECV0100 • ECV0101 <p>(FB 2026 Northeast Corner) <i>Good</i></p>	<p>S U</p> <p>Comments:</p>
<p>14. CAUTION: Leakage past ECV0025 and ECV0033 will result in water transferring between RWST and SFP.</p> <p>Prior to 5.1.9</p>		<p>Applicant read caution ✓</p>	<p>S U</p> <p>Comments:</p>

* Critical Step

**TASK
NUMBER - ELEMENT**
CUE
STANDARD
SCORE

<p>*15. ENSURE CLOSED the following valves:</p> <ul style="list-style-type: none"> • ECV0025, Fuel Pool Clg HX A To Fuel Pool Cln/upmps Iso • ECV0033, Fuel Pool HX B To Fuel Pool Clean/Up Pmps Iso <p>Step 5.1.9</p>	<p><u>EN:</u> No threads showing and stem is down on ECV0025</p> <hr/> <p><u>EC:</u> Stem is up with threads showing on ECV0033 (Valve is OPEN)</p>	<p>Applicant demonstrated the ability to ensure ECV0025 and ECV0033 were closed</p> <p>Applicant recognized ECV0033 was open and closed valve</p> <p>(FB 2000 - Rms 6104 and 6105)</p>	<p>S U</p> <p>Comments:</p>
<p>16. Hang Equipment Warning tags on following valves stating "The RWST is in the cleanup/recirculation lineup. Do not place SFP Cleanup in service":</p> <ul style="list-style-type: none"> • ECV0025, Fuel Pool Clg HX A To Fuel Pool Cln/upmps Iso • ECV0033, Fuel Pool HX B To Fuel Pool Clean/Up Pmps Iso <p>Step 5.1.10</p>	<p>Equipment warning tags are hanging on:</p> <p>ECV0025 and ECV0033</p>	<p>Applicant ensured equipment warning tags are hanging on:</p> <ul style="list-style-type: none"> • ECV0025 • ECV0033 <p>(Location?)</p>	<p>S U</p> <p>Comments:</p> <p><i>same as JPM Step 13</i></p>

* Critical Step

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE S U
17. CAUTION: If Train A SFP Cooling is in service, water will be transferred to the RWST if BNV0002 and ECV0076 are open at the same time. Prior to 5.1.11	<i>EC! If asked,</i> Train A SFP is NOT in service <i>How can applicant determine?</i> <i>- Initial Condition</i>	Applicant read caution <i>(per Initial Condition)</i>	S U Comments:
*18. Ensure closed ECV0076, Fuel Pool Clean-up Demin To SFP Dnstrm-iso Step 5.1.11	<i>EC:</i> Stem is up with threads showing on ECV0076 (Valve is OPEN)	Applicant demonstrated the ability to ensure close ECV0076 was closed (FB 2000 – Rm 6105)	S U Comments:
19. Hang Equipment Warning tags on ECV0076 stating "The RWST is in the cleanup/recirculation lineup. Do not place SFP Cleanup in service." Step 5.1.12	Equipment warning tags are hanging on ECV0076	Applicant ensured equipment warning tags were hanging on ECV0076 <i>(Location?)</i>	S U Comments:

* Critical Step

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
*20. Open BNV0002, Fuel Pool Cln/u Pmps To RWST Iso Step 5.1.13	<i>OpsTech</i> <u>EC:</u> Provide cue after OT is contacted to open valve: BNV0002 is open	Applicant contacted OT to open BNV0002 (Located in RWST valve room)	S U Comments: CS?
21. Place magnetic CAUTION signs, "RWST in recirc" on Main Control Board Step 5.1.14	<u>EC:</u> Caution signs have been placed on the MCB	<i>Applicant</i> Candidate contacted the control room to place magnetic CAUTION signs on MCB	S U Comments:
*22. PERFORM the following: • Using BN HIS-8800A, RWST To Refuel Pool, open BNHCV8800A • Using BN HIS-8800B, RWST To Refuel Pool, open BNHCV8800B Step 5.1.15	<u>EC:</u> Provide cue after RO is contacted to open valve: BNHCV8800A and BNHCV8800B are open <i>OK</i>	Applicant contacted the control room to open BNHCV8800A and BNHCV8800B	S U Comments: CS?

* Critical Step

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
23. NOTE: The Fuel Pool Cleanup subsystem may be run regardless of Fuel Pool Cooling subsystem status as long as the system is properly aligned (suction and discharge). Prior to 5.1.16		Applicant read note ✓	S U Comments:
*24. Start one Fuel Pool Cleanup Pump: • ECHS0023, Fuel Pool Clean-up Pump A Hand Switch ✓ ECHS0024, Fuel Pool Clean-up Pump B Hand Switch Step 5.1.16	Fuel Pool Cleanup Pump is running <u>EC:</u> <i>indications?</i> <i>Pump disch press?</i> <i>Red light on?</i> <i>Flow?</i>	Applicant started one Fuel Pool Cleanup Pump <u>A or B</u> . (FB 2000 – Rm 6104)	S U Comments:

* Critical Step

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE S U
<p>*25. Throttle pump discharge valve to obtain flow between 70,000 lbm/hr and 75,000 lbm/hr as indicated by ECFI0044, Fuel Pool Clean-up Pumps Disch Hdr Flow Ind:</p> <ul style="list-style-type: none"> ● ECV0038, Fuel Pool Clean-up Pmp A Disch Iso ● ECV0043, Fuel Pool Clean-up Pmp B Disch Iso <p>Step 5.1.17</p>	<p><u>EC:</u> Provide cue after appropriate discharge valve is throttled:</p> <p>ECFI0044 indicates 79,000 lbm/hr <i>prev step</i></p> <p>After valve is throttled, ECFI0044 indicates 73,000 lbm/hr</p>	<p>Applicant throttled the appropriate discharge valve to maintain 70,000 lbm/hr to 75,000 lbm/hr</p> <p>Applicant recognized flow was excessive and throttled closed on appropriate valve</p> <p>(FB 2000 – Rm 6104)</p>	<p>S U</p> <p>Comments:</p>
<p>26. Contact Radwaste Watchstander to check Fuel Pool Cleanup Filter differential pressure:</p> <ul style="list-style-type: none"> ● ECPDI0025, Fuel Pool Cln/u Fltr A Press Diff Ind ● ECPDI0026, Fuel Pool Cln/u Fltr B Press Diff Ind <p>Step 5.1.18</p>	<p><u>EC:</u> In-service filter dP is 11 psig</p>	<p>Applicant contacted Radwaste Watchstander ✓</p>	<p>S U</p> <p>Comments:</p>

* Critical Step

TASK NUMBER - ELEMENT	CUE	STANDARD	SCORE
27. Radwaste - If filter differential pressure exceeds 23 psid request appropriate supervisor load PM0999965 for filter replacement Step 5.1.19	Radwaste to Chemistry acknowledges <i>Same person was Radwaste Watchstander?</i>	Applicant informed RW of dP limit on cleanup filter <i>Applicant Determined Step is N/A.</i>	S U Comments:
28. NOTE: A minimum 24 hour recirculation prior to sample is required following any makeup to the RWST. Prior to 5.1.20		Applicant read note	S U Comments:
29. Notify Chemistry RWST is in recirculation Step 5.1.20	<u>EC:</u> Chemistry acknowledges	Applicant notified Chemistry that the RWST is now in recirculation	S U Comments:
30. The JPM is complete		Record stop time on Page 1	S U Comments:

* Critical Step

Read to Performer: I will explain the initial conditions, which steps to simulate or discuss, and provide initiating and subsequent cues. You may use any approved reference materials normally available to you. Make all written reports, oral reports, and log entries as if the evolution was actually being performed. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: Callaway Plant is in Mode 1. Chemistry has requested that the RWST be placed in recirculation.

Initiating Cues: The Control Room Supervisor (CRS) has directed you to place the RWST in recirculation per OTN-EC-00001, Addendum 3, RWST Cleanup Operations, Section 5.1.

A second OT and RO have been briefed on the assigned job to assist with required actions not in the RCA.

Notify the CRS that the RWST is in recirculation after notifying Chemistry of RWST status in Step 5.1.20.

Facility: Callaway

Scenario No.: 2, rev. 3

Op-Test No.: 2013301

Examiners: _____

Operators: _____

Initial Conditions: 100% Power, with the "A" CCP Out of Service for oil change and pump alignment.

Turnover: Reduce Power to 95% to allow testing of the Main Turbine Control Valves.

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	RO (R) BOP (N) SRO (N)	Reduce Power to 95% for Control Valve Testing ✓
2	ACPT0506	SRO (I) BOP (I)	Turbine Impulse Pressure Channel PT-506 Fails Low (Tech Spec) 1
3	BGLT0149	SRO (I) RO (I)	VCT Level Transmitter BG LT-149 Fails High 2
4	BB002_A	SRO (C) RO (C) BOP (C)	Small Break LOCA, Crew must determine Leak Rate (Tech Spec) 3
5	PBB01C_ S1TVFL	SRO (C) BOP (C) RO (C)	RCP "C" Seal Degrades, then Fails completely, requiring Reactor Trip / Trip of RCP "C" <i>what op actions are taken to correct comp failure? This is a precursor test to Major</i>
6	BB002_A	SRO (M) RO (M) BOP (M)	RCS Leak degrades to 5,000 gpm
7	SB SIS_BLOCK	RO (I)	SI Fails to Automatically Actuate in Both Trains, must be manually actuated <i>LOCA large enough that crew won't have time before</i> 4
8	PBG05B_1	RO (C)	"B" Centrifugal Charging Pump fails to Auto Start on receipt of SI Signal 5 <i>no 70 setpt?</i>
* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor			

Target Quantitative Attributes (Per Scenario; See Section D.5.d)	Actual Attributes
1. Total malfunctions (5-8)	7 5 or 6?
2. Malfunctions after EOP entry (1-2)	2 ✓
3. Abnormal events (2-4)	3 or 4 ?
4. Major transients (1-2)	1 ✓
5. EOPs entered/requiring substantive actions (1-2)	2
6. EOP contingencies requiring substantive actions (0-2)	0
7. Critical tasks (2-3)	3

Scenario Event Description
Callaway 2013 NRC Scenario #2

The plant is operating at 100%, steady state power. Centrifugal Charging Pump (CCP) "A" is tagged out of service for an oil change and pump alignment. The crew is directed to reduce reactor power to 95% to allow testing of the Main Turbine Control Valves. The power reduction will be performed in accordance with OTG-ZZ-00004, Addendum 3, Planned Power Changes From Full Power.

AsP After power has been reduced to 95%, Turbine Impulse Pressure Channel, AC PT-506 fails low. The crew should respond per OTO-AC-00003, Turbine Impulse Pressure Channel Failure, place rod control in manual and select Turbine Impulse Pressure Channel, AC PT-505, for control. Tech Spec 3.3.1 applies.

AsP After Tech Specs have been addressed for PT-506, VCT Level Transmitter BG LT-149 fails high, causing Letdown to Divert to the RHUT. The crew should respond per OTO-BG-00004, VCT Level Channel Failures, and re-position the Divert valve to the VCT position.

AsP After the VCT Level Transmitter Failure, a 30 gpm leak to containment develops. The crew will address the leak using OTO-BB-00003, RCS Excessive Leakage. The crew calculates the RCS leak rate and reviews Tech Specification 3.4.13 for RCS Operational Leakage, requiring the plant to be shutdown in 4 hours.

AsP Once the RCS Leak is addressed, RCP "C" seal #1 degrades, requiring the crew to enter OTO-BB-00002, RCP Off-Normal. Once the crew gets to the point in the procedure where they contact Engineering for additional actions to be taken, RCP "C" seal degrades further forcing the crew to manually trip the reactor and enter E-0, Reactor Trip or Safety Injection. RCP "C" should be tripped IAW OTO BB-00002 following the trip of the reactor. Since the RCS leak is not large enough to cause a Safety Injection (SI), the crew will transition to ES-0.1, Reactor Trip Response.

5? (want applicants to finish steps 3 & 4)
While performing ES-0.1, Step 3, Check PZR Pressure Control, the RCS leak increases to 5,000 gpm. Both trains of Safety Injection fail to actuate and the crew must manually initiate Safety Injection. The crew will transition back to E-0 and then to E-1, Loss of Reactor or Secondary Coolant.

CCP "B" fails to automatically start on the Safety Injection signal and will have to be started manually by the applicant.

The scenario can be terminated when the crew has commenced a RCS cooldown IAW with ES-1.2, Post LOCA Cooldown and Depressurization, or at the discretion of the lead evaluator.

Op Test No.: 2013301 Scenario # 2 rev.3 Event # 1 Page 5 of 25

Event Description: Reduce Power to 95% to allow Turbine Control valve Testing

Proc /Time	Position	Applicant's Actions or Behavior

OTG-ZZ-00004 Addendum 3, Planned Power Changes From Full Power

	<i>CRS</i>	<i>steps 5.1 Continuous Actions ?</i>
T=0 OTG-ZZ-00004	CRS	(Step 5.2.1) Perform the following in any order to prepare for lowering power. <i>a ✓</i> If needed, prior to beginning a load reduction, REQUEST I&C adjust NIS Power range coarse gains <i>b ✓</i> INITIATE Additional Actions Section 5.4 to prepare for reducing power
	SIM	<i>If called as I&C, inform the crew an I&C Tech is standing by if needed to adjust NIS Power range instruments</i>
	BOP	(Step 5.2.2) INITIATE power reduction
	RO	(Step 5.2.2.a) Borate the RCS as require to support lowering power to the desired final load.
	RO	(Step 5.2.2.b) ENSURE SE HS-9, ROD BANK AUTO/MAN SEL, is in MAN
	BOP	(Step 5.2.2.c) If using MANUAL turbine, INITIATE load reduction by slowly turning LOAD LIMIT SET potentiometer counter-clockwise.
	BOP	(Step 5.2.2.d) If using AUTOMATIC turbine control, Perform the following: <i>1 ✓</i> Using LOAD SELECTOR, DECREASE LOAD, pushbutton, SLOWLY LOWER load until the following conditions are met: <ul style="list-style-type: none"> ○ Load Limit Limiting light is off ○ Decrease Loading Rate, OFF, light is lit ○ Loading Rate Limit %/Min, ½, light is lit <i>2 ✓</i> TURN LOAD LIMIT SET potentiometer fully clockwise <i>3 ✓</i> Using DECREASE LOADING RATE, ON, pushbutton, PRESS ON <i>4 ✓</i> SELECT the desired loading rate <i>three bullets missing</i> <i>5 ✓</i> [INITIATE Load Reduction] <i>actual wording</i>

Op Test No.: 2013301 Scenario # 2 rev.3 Event # 2 Page 8 of 25

Event Description: Turbine Impulse Pressure Channel PT-506 Fails High(Tech Spec)

Proc /Time	Position	Applicant's Actions or Behavior
------------	----------	---------------------------------

OTO-AC-00003		(Step 4 RNO) Restore Tav _g to within 1.5°F using any of the following: <ul style="list-style-type: none"> • Adjust Control Rods • Adjust Turbine load • Adjust Boron concentration
	RO	(Step 5) CHECK Rod Control – IN AUTO
	BOP	(Step 6) Place Steam Dump Bypass Interlock Switches to OFF/RESET <ul style="list-style-type: none"> • AB HS-63 • AB HS-64
	BOP/RO	(Step 7) CHECK the following Permissives are in the Correct State within one hour of the Channel Failure <ul style="list-style-type: none"> • P-7 - Lit • P-13 - Lit
	CRS	(Step 8) REVIEW Applicable Tech Specs. <i>Refer to Attach C, Tech Specs.</i> TS 3.3.1, Cond T, Verify Interlock is in required state for existing conditions within 1 hour <u>OR</u> be in Mode 2 in 7 hours <i>Item 18-b and/or f?</i>
	CREW	(Step 9) REVIEW Attachment A, Effects of Turbine Impulse Pressure Instrument Failure
NOTE		At Lead Examiner's discretion move to the next Event

Op Test No.: 2013301 Scenario # 2 rev.3 Event # 4 Page 11 of 25

Event Description: Small Break LOCA (~30 gpm), Crew must determine Leak Rate (Tech Spec)

Proc /Time	Position	Applicant's Actions or Behavior
------------	----------	---------------------------------

Booth Operator Instructions

T = 35 minutes or at the discretion of the Lead Examiner

Small Break Loss of Coolant Accident of 30 gpm

- Insert Malfunction (BB) BB002_A, Value = 30
- When contacted, respond as EDO as requested.

Indications Available:

T=35		ANN 61A, PROCESS RAD HIHI
OTO-BB-00003, RCS Excessive Leakage		
	CRS	Implement OTO-BB-00003, RCS Excessive <i>Leakage</i>

NOTE

CREW

Tech Spec 3.4.1, DNB Limits, may be entered on Low RCS Pressure (2223 psig) due to RCS leak – 2 hours to restore if entered

✓

RO

(Step 1) CHECK If Pressurizer Level can be maintained

- Control charging flow as necessary to maintain PZR level
- CHECK Pressurizer Level – Stable or Rising

RO

(Step 2) CHECK Pressurizer Level – Stable or Rising

CRS

(Step 3) Evacuate Non-Essential Personnel in Containment

RO

(Step 4) CHECK if VCT Level can be maintained

- VCT Level – Maintained > 5% by Normal makeup

Op Test No.: 2013301 Scenario # 2 rev.3 Event # 4 Page 12 of 25

Event Description: Small Break LOCA (~30 gpm), Crew must determine Leak Rate (Tech Spec)

Proc /Time	Position	Applicant's Actions or Behavior
------------	----------	---------------------------------

	RO	(Step 5) Determine If Plant Trip is Required a. Determine Leak size and rate of change using any of the following b. Leak rate – LESS THAN 50 GPM (20 – 40 gpm)
NOTE		The crew should determine the Leak to be approximately 20-40 gpm
OTO-BB-00003	RO	(Step 6) CHECK PZR Pressure a. Check Pressurizer Pressure Trending to or between 2225 and 2250 psig
	BOP	(Step 7) CHECK SG Tubes – Intact a. SG Steam Flow/Feed Flow Trends – Consistent with Pre-Event Values b. Condenser Air Removal Radiation – Normal c. SG Blowdown and Sample Radiation Monitors - Normal d. SG Steamline N16 Radiation - Normal
	BOP	(Step 8) CHECK Containment Conditions – Normal • Containment Radiation-Normal - NO • Containment Pressure-Normal • Containment Normal Sump Level – Normal • Containment area radiation monitors – Normal • Instrument Tunnel Sump - Normal
	RO	(Step 8 RNO a) If normal letdown is/was in service, THEN Perform the following: 1) Close Letdown Orifice Isolation Valves <i>1st 3 valves :</i> 2) Close RCS Letdown to Regen Hx isolation valves <i>1st 2 valves :</i> 3) If Leakage stopped, THEN Established Excess Letdown per OTN-BG-00001, Chemical and Volume Control System (Excess Letdown will be established if Crew believes leak has been stopped) <i>Where is leak? Would this be a correct action?</i>

Op Test No.: 2013301 Scenario # 2 rev.3 Event # 4 Page 13 of 25

Event Description: Small Break LOCA (~30 gpm), Crew must determine Leak Rate (Tech Spec)

Proc /Time	Position	Applicant's Actions or Behavior
------------	----------	---------------------------------

OTO-BB-00003	RO	<p>(Step 8 RNO b) If Leakage continues, THEN perform the following:</p> <ol style="list-style-type: none"> 1) Secure charging by closing Charging Header Back Pressure Control Valve (BG HC-182) 2) Maintain RCP Seal injection flow to each RCP between 8 and 13 gpm 3) If leakage continues, then perform the following: <ol style="list-style-type: none"> a. Restore normal charging b. If leakage can be maintained within the capacity of one pump when letdown is established, THEN restore letdown 4) When containment conditions permit, THEN Dispatch an operator into containment to identify source per Att. A, Containment Leak Search.
	SIM	<p>If contacted as the Field Supervisor for a containment entry to search for the leak, acknowledge that a team will be formed.</p>
	RO/BOP	<p>(Step 9) Monitor RCS Leakage Rate</p> <ul style="list-style-type: none"> • Use Trends of VCT level and PZR level, <i>or</i> • Compare charging and letdown flows, <i>or</i> • Use CTMT Sump level trends, <i>or</i> • Perform OSP-BB-00009
	CRS	<p>(Step 10) Refer to the following Technical Specifications</p> <ul style="list-style-type: none"> • 3.4.13, RCS Operational Leakage <i>Cond A?</i> • Be in Mode 3 in 6 hours <u>AND</u> Be in Mode 5 in 36 hours <i>Cond B?</i>
NOTE	RO	<p>Due to the failed VCT level channel (BGLT0149) manual makeup to the VCT will be required.</p>
		<p>At Lead Examiner's discretion move to the next Event</p>

Op Test No.: 2013301 Scenario # 2 rev.3 Event # 5 Page 16 of 25

Event Description: RCP "C" No. 1 Seal Degrades and eventually fails

Proc /Time	Position	Applicant's Actions or Behavior
------------	----------	---------------------------------

OTO-BB-00002	RO/BOP	(Step D2) Trip the Affected RCP (C)
	RO/BOP	(Step D3 and D4) Check A and B RCPs – RUNNING
	RO/BOP	(Step D5) Defeat Tavg and ΔT for idle RCS Loop
		• add 2 bullets
	RO/BOP	(Step D6) CHECK No. 1 Seal Leakoff Flow was less than 6 GPM prior to securing (BG FR-155) RNO – When the affected RCP has come to a stop (approximately 4 minutes), THEN Close #1 Seal Leakoff valve for the affected RCP: <ul style="list-style-type: none">• BB HIS-8141C (RCP C) ✓

Op Test No.: 2013301 Scenario # 2 rev.3 Event # 6, 7, 8 Page 17 of 25

Event Description: Reactor Trip / Large Break Loss of Coolant Accident / SI Fails to Automatically Actuate / "B" Centrifugal Charging pump fails to Auto Start

Proc /Time	Position	Applicant's Actions or Behavior
------------	----------	---------------------------------

E-0, Reactor Trip or Safety Injection

	CRS	Implement E-0, Reactor Trip or Safety Injection
		NOTE Steps 1 through 4 are immediate actions
E-0	RO	(Step 1) CHECK Reactor Trip Rod Bottom Lights – All Lit Reactor Trip and Bypass Breakers – Open Neutron Flux - Lowering
	BOP	(Step 2) CHECK Turbine Trip Turbine Stop Valves - Closed
	BOP	(Step 3) CHECK Power to AC Emergency Buses At Least One Emergency Bus – Energized Both Emergency Buses – Energized
	RO	(Step 4) CHECK SI Status Actuated or Required – NO RNO – If SI is NOT required then Go to ES-0.1, Reactor Trip Response, Step 1
		<i>ES-0.1 Reactor Trip Response</i>
<i>7</i>	CRS	Call STA to Initiate CSF Status Tree Monitoring Implement ES-0.1, RTR
ES-0.1	CAUTION	If SI Actuation occurs during the performance of this procedure, E-0, Reactor Trip or Safety Injection, should be performed. <i>Call STA...</i>
	RO	(Step 1) CHECK RCS Temperature Control a. Check RCPs – Any Running b. Check RCS temperature response - NORMAL

like above

Op Test No.: 2013301 Scenario # 2 rev.3 Event # 6, 7, 8 Page 19 of 25

Event Description: Reactor Trip / Large Break Loss of Coolant Accident / SI Fails to Automatically Actuate / "B" Centrifugal Charging pump fails to Auto Start

Proc /Time	Position	Applicant's Actions or Behavior
E-0	CRS	E-0 Reactor Trip or SI
	RO	(Step 1) CHECK Reactor Trip Rod Bottom Lights – All Lit Reactor Trip and Bypass Breakers – Open Neutron Flux - Lowering
	BOP	(Step 2) CHECK Turbine Trip Turbine Stop Valves - Closed
	BOP	(Step 3) CHECK Power to AC Emergency Buses At Least One Emergency Bus – Energized Both Emergency Buses – Energized
	RO	(Step 4) CHECK SI Status Actuated or Required Manually Actuate SI (If not actuated) Check both Trains of SI Actuated LOCA Sequencer ANN 30A – Lit LOCA Sequencer ANN 31A – Lit SB069 SI Actuate Red Light – Lit Solid
	RO/BOP	(Step 5) Perform Attachment A, Automatic Action Verification, while continuing with this procedure
E-0 Att A	RO/BOP	(Step A1) CHECK Charging Pumps – Both CCPs running
Critical Task	CREW	Establish flow from at least one Centrifugal Charging Pump before transitioning from E-0, Reactor Trip or Safety Injection
	RO/BOP	(Step A2) CHECK SI and RHR Pumps – All running – NO Start SI Pump "A"
	RO/BOP	(Step A3) CHECK ECCS Flow – BIH flow indicated

like before

lightly shade all Att A cells

Op Test No.: 2013301 Scenario # 2 rev.3 Event # 6, 7, 8 Page 22 of 25

Event Description: Reactor Trip / Large Break Loss of Coolant Accident / SI Fails to Automatically Actuate / "B" Centrifugal Charging pump fails to Auto Start

Proc /Time	Position	Applicant's Actions or Behavior
------------	----------	---------------------------------

E-0	RO/BOP	(Step 12) CHECK if RCPs should be Stopped <ul style="list-style-type: none"> • RCPs – Any Running • ECCS Pumps – At least One Running • RCS Pressure – Less than 1425 psig • YES – Stop all RCPs • RNO – Go To Step 13
NOTE		<i>This may be performed earlier using the Foldout Page for E-0</i>
Critical Task	CREW	Trip all RCPs such that the core does not uncover (RVLIS<55%) AND prior to commencing an operator controlled cooldown
	RO	(Step 13) CHECK RCS Temperatures <ul style="list-style-type: none"> • RCPs Running – Tavg 557 Deg F • No RCPs Running – Tcold 557 Deg F
	RO/BOP	(Step 14) CHECK if any SG is Faulted <ul style="list-style-type: none"> • Any SG pressure lowering uncontrollably • Any SG completely depressurized
	RO/BOP	(Step 15) CHECK if SG Tubes are Intact <ul style="list-style-type: none"> • Levels in all SGs – No NR Level rising uncontrollably • SG Steamline N16 radiation – Normal • Condenser Air Removal radiation – Normal before Isolation • SG Blowdown and Sample radiation – Normal for Isolation • SG ASD radiation – Normal • Turbine Driven Aux Feedwater Pump Exhaust radiation – normal

list both criteria

Op Test No.: 2013301 Scenario # 2 rev.3 Event # 6, 7, 8 Page 23 of 25

Event Description: Reactor Trip / Large Break Loss of Coolant Accident / SI Fails to Automatically Actuate / "B" Centrifugal Charging pump fails to Auto Start

Proc /Time	Position	Applicant's Actions or Behavior
------------	----------	---------------------------------

E-0	RO	(Step 16) CHECK if RCS is Intact <ul style="list-style-type: none"> • Containment Pressure Normal – NO • Containment Normal Sump Level Normal – NO • Containment Radiation – Normal Before Isolation – NO RNO – Go To E-1, Loss of Reactor or Secondary Coolant , Step 1
E-1		Transition to E-1, Loss of Reactor Or Secondary Coolant
	RO	(Step 1) CHECK if RCPs Should be stopped
Note		<i>These should have been stopped during the performance of E-0</i>
	BOP	(Step 2) CHECK if Any SG is Faulted <ul style="list-style-type: none"> a. Check pressures in all SGs b. Check all faulted SG(s) isolated
	BOP	(Step 3) CHECK Intact SG Levels <ul style="list-style-type: none"> a. Narrow ^{range} levels great than 7% [25%] b. Control feed flow to maintain narrow levels between 7% [25%] and 52%
	BOP	(Step 4) CHECK Secondary Radiation - NORMAL <i>add g. c.</i>
	RO	(Step 5) CHECK PZR PORVs and Block Valves <ul style="list-style-type: none"> a. Power to Block Valves – Available b. PZR PORVs – Closed c. Block Valves – Both OPEN

Op Test No.: 2013301 Scenario # 2 rev.3 Event # 6, 7, 8 Page 24 of 25

Event Description: Reactor Trip / Large Break Loss of Coolant Accident / SI Fails to Automatically Actuate / "B" Centrifugal Charging pump fails to Auto Start

Proc /Time	Position	Applicant's Actions or Behavior
------------	----------	---------------------------------

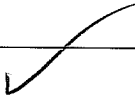
E-1	RO	(Step 6) CHECK IF ECCS Flow should be reduced <ol style="list-style-type: none"> RCS subcooling – Greater than 30°F [50°F] Secondary heat sink RCS pressure – Stable or Rising PZR level – Greater than 9% [29%] RNO <u>9</u> Go to Step 7
	BOP	(Step 7) CHECK of Containment Spray should be stopped <ol style="list-style-type: none"> Spray Pumps – Running – NO RNO – Go to Step 8. <i>Observe Caution prior to step 8.</i>
	BOP	(Step 8) CHECK if RHR Pumps should be stopped - NO <i>add a.1 a.2</i> <i>RNO a.2) Go to step 9</i>
	BOP	(Step 9) CHECK SG and RCS Pressures <ul style="list-style-type: none"> Check pressure in all SGs – Stable or Rising Check RCS pressure Stable or Lowering
	RO/BOP	(Step 10) CHECK if Diesel Generators Should be Stopped <ol style="list-style-type: none"> AC emergency buses – Energized by Offsite Power RESET SI if necessary Load equipment on AC emergency bus(es) as necessary using EOP Addendum 8 Stop any unloaded DG(s) and PLACE in standby <i>add steps</i>
	BOP	(Step 11) CHECK Ultimate Heat Sink – Normal <ol style="list-style-type: none"> NG01 and NG08 Bus annunciators – CLEAR Determine ESW Return Temperature Check UHS Cooling Tower Bypass Valve <i>(open or closed?)</i> Check UHS Cooling Tower Fans Speeds <i>(status?)</i>

add steps since applicant should stop unloaded DGs

Op Test No.: 2013301 Scenario # 2 rev.3 Event # 6, 7, 8 Page 25 of 25

Event Description: Reactor Trip / Large Break Loss of Coolant Accident / SI Fails to Automatically Actuate / "B" Centrifugal Charging pump fails to Auto Start

Proc /Time	Position	Applicant's Actions or Behavior
------------	----------	---------------------------------

E-1	RO/BOP	(Step 12) Initiate Evaluation of Plant Status <ol style="list-style-type: none"> Check cold leg recirculation capability <ul style="list-style-type: none"> Train A - Available Train B - Available Check Auxiliary Building radiation – NORMAL Obtain Samples Evaluate plant equipment Start additional plant equipment to assist in recovery as directed by the SM/CRS
	CRS	(Step 13) CHECK if RCS Cooldown and Depressurization is required <ol style="list-style-type: none"> RCS pressure – Greater than 325 psig – YES Go to ES-1.2, Post LOCA Cooldown and Depressurization
ES-1.2	CRS	Transition to ES-1.2, Post LOCA Cooldown and Depressurization 
NOTE		Once the crew has transitioned to ES-1.2 – The Scenario can be STOPPED and the Simulator FROZEN

Appendix D

Scenario Outline

Form ES-D-1

Facility: Callaway

Scenario No.: 3, Rev 3

Op-Test No.: 2013301

Examiners: _____

Operators: _____

Initial Conditions: 80% Power, Steady State Conditions

Turnover: The "B" Motor Driven Auxiliary Feedwater Pump is out of service for breaker maintenance and will not be returned to service until next shift. The NCP is vibrating excessively, so after the completion of Shift Turnover, shift to the "A" CCP.

Event No.	Malf. No.	Event Type*	Event Description	
1	N/A	RO (N) SRO (N)	Swap Charging Pumps (High Vibration on NCP)	N
2	BBTE0411A1	SRO (I) RO (I)	RTD Fails High (Tech Spec) ✓	1
3	AEFC0530_1	SRO (C) BOP (C)	MFW Reg Valve (FRV) "C" Fails Closed – Manual Control Available	2
4	BNLT0932	SRO (I)	Refueling Water Storage Tank (RWST) Level Channel Fails Low (Tech Spec) ✓	3
5	PB03	SRO (M) RO (M) BOP (M)	Loss of Power Supply PB03 / Reactor Trip	
6	PBG05A	SRO (C) RO (C)	Running CCP Trips ("A") / Non Running CCP ("B") must be manually started	4
7	SA036D_MD AFAS SA036E_MD AFAS	SRO (I) BOP (I)	Auxiliary Feedwater Actuation Signal (AFAS) fails to actuate on both trains ^{-MD}	5
8	PAL02_1	SRO (C) BOP (C)	Turbine Driven Auxiliary Feedwater Pump trips following the Reactor Trip (Loss of Secondary Heat Sink)	6
9	ALV0043	SRO (C) BOP (C)	"A" Motor Driven Auxiliary Feedwater Pump Discharge Flow Degraded - Discharge Valve cannot be opened (Loss of Secondary Heat Sink) <i>no op action to correct</i>	X
* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor				

Target Quantitative Attributes (Per Scenario; See Section D.5.d)	Actual Attributes
1. Total malfunctions (5-8)	4 8
2. Malfunctions after EOP entry (1-2)	3 4
3. Abnormal events (2-4)	3 2
4. Major transients (1-2)	1 ✓
5. EOPs entered/requiring substantive actions (1-2) <i>ES-0.1</i>	1 ✓
6. EOP contingencies requiring substantive actions (0-2) <i>FRH.1</i>	1 ✓
7. Critical tasks (2-3)	3 ✓

Scenario Event Description
Callaway 2013 NRC Scenario #3

The plant is operating at 80%, steady state power. Motor Driven Auxiliary Feedwater (MDAFW) Pump "B" is out of service for breaker maintenance and will not be returned to service until next shift. The crew is directed to shift charging to Centrifugal Charging Pump (CCP) "A" after shift turnover due to excessive vibration reported on the Normal Charging Pump (NCP).

AOP After the NCP is secured and pressurizer level has been stabilized, the Loop 1 Hot Leg RTD will fail high causing the control rods to drive in. The RO Candidate will take manual control of the control rods and respond in accordance with OTO-BB-00004, RCS RTD Channel Failures. Tech Spec 3.3.1 applies.

AOP After Tech Specs have been addressed for the RTD, MFW Reg Valve (FRV) "C" fails closed. This causes a feedwater flow reduction and a lowering SG level. The crew should respond per OTO-AE-00001, Feedwater System Malfunction, and take manual control of the failed valve to prevent a reactor trip.

AOP After Steam Generator "C" level has been stabilized, a Refueling Water Storage Tank (RWST) level channel fails low. The crew will respond IAW OTO-BN-00001, RWST Level Channel Malfunction, and refer to Tech Specs 3.3.2 applies.

After Tech Specs have been reviewed for the RWST level channel a loss of Bus PB03 occurs. This results in the loss of a Heater Drain Pump "A" and Condensate Pumps "A" and "C". The crew should respond by manually tripping the reactor and entering E-0, Reactor Trip or Safety Injection. If the reactor is not tripped manually, it will trip automatically on SG low level.

When the reactor trips, CCP "A" will trip. CCP "B" will have to be manually started to provide RCS charging and seal injection to the Reactor Coolant Pumps. This could be on Prudent operation action or from direction in ES-0.1, Reactor Trip Response, or from FR-H.1, Response to Loss of Secondary Heat Sink. *Reference for this action?*

The Auxiliary Feedwater Actuation Signal-Motor Driven (AFAS-MD) fails to actuate on both trains from the SG low level. The crew should respond to the failed AFAS-MD signal by starting MDAFW Pump "A" ("B" pump is OOS for maintenance). The manual discharge valve for MDAFW Pump "A" is failed at 10% open and cannot be opened locally.

TDAFW pump capacity ? 100% ?

Once the crew has entered ES-0.1, Reactor Trip Response, and completed the first 3 steps, the Turbine Driven Aux Feedwater Pump will be tripped.

4 (to get to 4.C. RNO & start CCP)

Due to the status of the AFW system, the crew should transition to FR-H.1. The crew should use EOP Addendum 38, Non Safety Auxiliary Feedwater Pump, as directed in FR-H.1, to restore Aux Feedwater flow.

The scenario can be terminated once the crew restores Aux Feedwater flow IAW EOP Addendum 38 or at the discretion of the lead evaluator.

Rev 3

Critical Tasks:

Event #3 CT - Take manual control of FRV "C" prior to a reactor trip occurring on low steam generator water level

Event #5 CT - Manually start CCP "B" prior to initiating a RCS bleed and feed due to having no CCPs in service

Event #8 CT - Manually start the Non Safety Auxiliary Feedwater Pump IAW FR-H.1, Response to Loss of Secondary Heat Sink, prior to initiating a RCS bleed and feed due to Steam Generator low level

NOTE: RCS bleed
and feed
criteria:

WR level in any 3 S/Gs < 27% [42%]

OR

PZR press > 2335

OR

No CCPs available

References
OTN-BG-00001, Addendum 1, Shifting From The NCP to One Of The CCPs
OTO-BB-00004, RCS RTD Channel Failures
OTO-AE-00001, Feedwater System Malfunction
OTO-BN-00001, RWST Level Channel Malfunction
E-0, Reactor Trip or Safety Injection
ES-0.1, Reactor Trip Response
FR-H.1, Response To Loss Of Secondary Heat Sink
EOP Addendum 38, Non Safety Auxiliary Feedwater Pump
Tech Spec 3.3.1 for Reactor Trip System Instrumentation
Tech Spec 3.3.2 for ESFAS Instrumentation
ODP-ZZ-00025, EOP/OTO User's Guide

Appendix D

Op Test No.: 2013301 Scenario # 3 rev.3 Event # 5 Page 16 of 25

Event Description: Loss of PB03 – results in Reactor Trip

Proc /Time	Position	Applicant's Actions or Behavior
------------	----------	---------------------------------

OTO-AE-00001	BOP	(Step 10) CHECK if MFW reg valves – in service
	BOP	(Step 11) CHECK MFW reg valves – controlling in auto - YES
	BOP	(Step 12) CHECK if MFW reg valve bypass – in service <ul style="list-style-type: none"> • NO → Go to Step 14
	BOP	(Step 14) CHECK condensate pump – tripped - YES
	CREW	(Step 15) CHECK reactor power – greater than 45% - YES <ul style="list-style-type: none"> • If less than two condensate pumps are running, then perform the following: <ol style="list-style-type: none"> 1) Manually trip the reactor 2) Go to E-0, Reactor Trip or Safety Injection
NOTE		<i>Crew may trip the reactor prior to Step 14 based on prudent operator action if SG levels are approaching the trip setpoint</i>
		Once the reactor has been tripped → GO TO THE NEXT EVENT

Assuming applicants don't wait till Step 15 to trip the reactor, what reference allows this? Ops Dept procedure?

Appendix D

Op Test No.: 2013301 Scenario # 3 rev.3 Event # 6,7,8,9 Page 18 of 25

Event Description: Reactor Trip/"A" CCP Trips/MDAFAS Fails to Actuate (Both Trains)/TDAFW Pump Trips/MDAFW Pump "A" Discharge Flow Degraded

Proc /Time	Position	Applicant's Actions or Behavior
------------	----------	---------------------------------

E-0	CREW	(Step 4) CHECK SI status: <ul style="list-style-type: none"> Check if SI is actuated – NO → Go to RNO
	CREW	(Step 4 RNO) CHECK if SI is required: <ul style="list-style-type: none"> PZR pressure less than or equal to 1849 psig Any SG pressure less than or equal to 615 psig Containment pressure greater than or equal to 3.5 psig If SI is not required, then go to ES-0.1, Reactor Trip Response
ES-0.1	CRS	Implement ES-0.1, Reactor Trip Response
	CRS	Call STA to initiate CSF Status Tree Monitoring
	RO	(Step 1) CHECK RCS temperature control: <ul style="list-style-type: none"> Check RCPs – any running Check RCS temperature response - normal
	BOP	(Step 2) CHECK status of AC buses: <ul style="list-style-type: none"> Check generator output breakers – open Check all AC buses – energized by offsite power
	RO	(Step 3) CHECK PZR pressure control: <ul style="list-style-type: none"> Pressure – greater than 1849 psig Pressure – stable at or trending to 2235 psig
		ES-0.1
SIM Operator	TDAFW Pump	Insert Malf (AL) PAL02_1, Value = True, after completion of Step 84 or at the direction of the Lead Examiner (Trips TDAFW Pump)

move to
next page

Appendix D

Op Test No.: 2013301 Scenario # 3 rev.3 Event # 6,7,8,9 Page 19 of 25

Event Description: Reactor Trip/"A" CCP Trips/MDAFAS Fails to Actuate (Both Trains)/TDAFW Pump Trips/MDAFW Pump "A" Discharge Flow Degraded

Proc /Time	Position	Applicant's Actions or Behavior
------------	----------	---------------------------------

ES-0.1	RO	(Step 4) CHECK PZR level control: <ul style="list-style-type: none"> • PZR level – greater than 17% • Check instrument air supply containment isolation valve – open (KA HIS-29) • Check charging – in service NO → Go to RNO – See Below • Check letdown – in service • PZR level – trending to 25%
	RO	(Step 4 RNO for no charging in service) <ul style="list-style-type: none"> • Establish charging: • Check NCP running – NOT AVAILABLE • If NCP is not available, then perform the following: • Ensure CCP recirc valves are open: BG HIS-8110 BG HIS-8111 • Start one CCP: BG HIS-2A ("B" CCP)
Critical Task	CREW	Manually start CCP "B" prior to initiating a RCS bleed and feed due to having no CCPs in service
NOTE		<i>Crew may notice no charging flow prior to Step 4 and start CCP "B" at that time or they may not start CCP "B" until Step 2 of FR H.1, dependent on when the transition to FR H.1 occurs.</i>
	RO	(Step 5) CHECK shutdown reactivity status: <ul style="list-style-type: none"> • Check all control rods – fully inserted • Check if uncontrolled RCS dilution – in progress NO → Go to RNO → Go to Step 6

Appendix D

Op Test No.: 2013301 Scenario # 3 rev.3 Event # 6,7,8,9 Page 21 of 25

Event Description: Reactor Trip/"A" CCP Trips/MDAFAS Fails to Actuate (Both Trains)/TDAFW Pump Trips/MDAFW Pump "A" Discharge Flow Degraded

Proc /Time	Position	Applicant's Actions or Behavior
FR-H.1	RO/BOP	<p>(Step 2) CHECK if RCS bleed and feed – required: Any RCS bleed and feed condition – satisfied</p> <ul style="list-style-type: none"> • WR level in any three SGs – less than 27% • PZR pressure – greater than 2335 psig due to loss of secondary heat sink • No CCPs – available (CCP "B" could be started at this time if not already started) <p>Bleed and feed not required – Go to RNO Perform the following:</p> <ul style="list-style-type: none"> • Monitor RCS bleed and feed conditions • If any condition occurs, then perform Step 2.b and 2.c • Continue with Step 3
	BOP	<p>(Step 3) Try to establish AFW flow to at least one SG:</p> <p><i>a ✓</i> Check SG blowdown isolation</p> <ul style="list-style-type: none"> - SG blowdown containment isolation valves – closed - SG sample outer containment isolation valves – closed <p><i>b ✓</i> Check control room indications for cause of AFW failure</p> <ul style="list-style-type: none"> - CST level - MD AFW pump power supply - TD AFW pump steam supply - AFW valve alignment – refer to EOP Addendum 18, as necessary <p><i>c ✓</i> Try to restore AFW flow</p> <p><i>d ✓</i> Check total flow to SGs – greater than 285,000 lbm/hr NO → Go to RNO</p> <p><i>RNO rd</i> If any feed flow to at least one SG is not verified, the perform the following:</p> <ol style="list-style-type: none"> 1. Perform EOP Addendum 38, Non Safety Auxiliary Feedwater Pump 2. <i>DISPATCH Op To locally restore AFW flow</i> 3. Go to Step 4
EOP Add 38	CRS	Implement EOP Addendum 38, Non Safety Auxiliary Feedwater Pump (Addendum assigned to BOP)

RO/BOP

(Step 2) CHECK if RCS bleed and feed – required:

Any RCS bleed and feed condition – satisfied

- WR level in any three SGs – less than 27%
- PZR pressure – greater than 2335 psig due to loss of secondary heat sink
- No CCPs – available (**CCP "B" could be started at this time if not already started**)

Bleed and feed not required – Go to RNO

Perform the following:

- Monitor RCS bleed and feed conditions
- If any condition occurs, then perform Step 2.b and 2.c
- Continue with Step 3

BOP

(Step 3) Try to establish AFW flow to at least one SG:

- a ✓* Check SG blowdown isolation
- SG blowdown containment isolation valves – closed
 - SG sample outer containment isolation valves – closed
- b ✓* Check control room indications for cause of AFW failure
- CST level
 - MD AFW pump power supply
 - TD AFW pump steam supply
 - AFW valve alignment – refer to EOP Addendum 18, as necessary
- c ✓* Try to restore AFW flow
- d ✓* Check total flow to SGs – greater than 285,000 lbm/hr
NO → Go to RNO
- RNO rd* If any feed flow to at least one SG is not verified, the perform the following:
1. Perform EOP Addendum 38, Non Safety Auxiliary Feedwater Pump
 2. *DISPATCH Op To locally restore AFW flow*
 3. Go to Step 4

EOP
Add 38

CRS

Implement EOP Addendum 38, Non Safety Auxiliary Feedwater Pump (Addendum assigned to BOP)

add 2

Appendix D

Op Test No.: 2013301 Scenario # 3 rev.3 Event # 6,7,8,9 Page 22 of 25

Event Description: Reactor Trip/"A" CCP Trips/MDAFAS Fails to Actuate (Both Trains)/TDAFW Pump Trips/MDAFW Pump "A" Discharge Flow Degraded

Proc /Time	Position	Applicant's Actions or Behavior
------------	----------	---------------------------------

**EOP
Add 38****BOP**

(Step 1) CHECK AEPS 4.16 KV PB05 Bus energized by one of the following:

- At least one alternate emergency power supply (AEPS) DG
- Central electric power reform substation

BOP

(Step 2) Locally align the non safety aux feedwater pump:

- a ✓* Open ALV0200, NS AFP TO TDAFP Disch Upstrm ISO
- b ✓* Open APV0022, CST Drain
- c ✓* Close APV0012, CST Makeup To Hotwell Iso Vlv
- d ✓* Notify control room NS AFP status

BOP

(Step 3) Throttle the following TD AFP AFW Reg Valves – 25% open:

- AL HK-8A
- AL HK-10A
- AL HK-12A
- AL HK-6A

*Note: A day 5/6 is WR < 10% and is feed flow established***BOP**

(Step 4) Close CST makeup to hotwell level control valve:

- a ✓* Close condenser hotwell makeup level controller by placing controller in manual and zero output:
- AD LIC-79B

BOP

(Step 5) CHECK AEPS 4.16KV PB05 bus energized by one of the following:

- At least one alternate emergency power supply (AEPS) DG
- Central electric power reform substation

Appendix D

Op Test No.: 2013301 Scenario # 3 rev.3 Event # 6,7,8,9 Page 23 of 25

Event Description: Reactor Trip/"A" CCP Trips/MDAFAS Fails to Actuate (Both Trains)/TDAFW Pump Trips/MDAFW Pump "A" Discharge Flow Degraded

Proc /Time	Position	Applicant's Actions or Behavior
------------	----------	---------------------------------

EOP Add 38	BOP	(Step 6) Start the non safety aux feedwater pump: <ol style="list-style-type: none"> Check Step 2 alignment – complete Using PBXY0001 close NS AFP FDR BKR PB0504: <ul style="list-style-type: none"> PB0504 Monitor running NS AFW pump operation
	BOP	(Step 7) Establish and maintain NS AFW flow – less than 280,000 lbm/hr
	BOP	(Step 8) CHECK CST to AFP suction header pressure – greater than 2.75 psig
	BOP	(Step 9) Monitor AEPS system using PBXY0001: <ul style="list-style-type: none"> Watts Amps Volts Fuel (DG only)
	BOP	(Step 10) Notify Jefferson City Oil to refuel AEPS DGs as necessary:
	BOP	(Step 11) CHECK addendum entry status: <ol style="list-style-type: none"> Entry – from FR-H.1 → (Return to FR-H.1, Step 3.d) Determine if SI has been actuated due to RCS bleed & Feed rigid RNO •
Critical Task	CREW	Manually start the Non Safety Auxiliary Feedwater Pump IAW FR-H.1 prior to initiating a RCS bleed and feed due to Steam Generator low level
	CRS	Transition to FRH.1, Step 3.d

Appendix D

Op Test No.: 2013301 Scenario # 3 rev.3 Event # 6,7,8,9 Page 24 of 25

Event Description: Reactor Trip/"A" CCP Trips/MDAFAS Fails to Actuate (Both Trains)/TDAFW Pump Trips/MDAFW Pump "A" Discharge Flow Degraded

Proc /Time	Position	Applicant's Actions or Behavior
		<i>(Step 3d) Check total flow to s/gs > 285 K lb/hr</i>
FR-H.1	RO	(Step 4) Transfer Condenser Steam Dump to Steam Pressure Mode: <ol style="list-style-type: none"> Check Condenser – Available <ul style="list-style-type: none"> • C-9 interlock – Lit • MSIVs – Any Open Place Steam Header Pressure Controller in Manual and Zero Output: <ul style="list-style-type: none"> • AB PK-507 Place Steam Dump Select switch in Stm Press position: <ul style="list-style-type: none"> • AB US-500Z Place Steam Header Pressure Controller in Auto: <ul style="list-style-type: none"> • AB PK-507
	RO	(Step 5) Stop All RCPs
	RO	(Step 6) Try To Establish Main Feedwater Flow To At Least One SG: <ol style="list-style-type: none"> Check Condensate System – In Service Reset SI if necessary: <ul style="list-style-type: none"> • SB HS-42A • SB HS-43A Reset FWIS: <ul style="list-style-type: none"> • SB HS-17 • SB HS-18 Bypass the FWIS using EOP Addendum 29, FWIS Bypass Operation
SIM Operator	FW ISO Valves	If Crew attempts to use EOP Addendum 29, inform them that the FW Isolation Valves will not open
	RO	(Step 6 cont'd) <ol style="list-style-type: none"> Open at least one Feedwater Isolation Valve: <ul style="list-style-type: none"> 6.e RNO – If No Feedwater Isolation Valve can be opened, Then Go To Step 10.

Appendix D

Op Test No.: 2013301 Scenario # 3 rev.3 Event # 6,7,8,9 Page 25 of 25

Event Description: Reactor Trip/"A" CCP Trips/MDAFAS Fails to Actuate (Both Trains)/TDAFW Pump Trips/MDAFW Pump "A" Discharge Flow Degraded

Proc /Time	Position	Applicant's Actions or Behavior
------------	----------	---------------------------------

FR-H.1

RO

(Step 10) Check For Loss Of Secondary Heat Sink:

- Wide Range level in any three SGs – less than 27%
or
- PZR pressure – greater than 2335 psig due to loss of secondary heat sink

NO→Go to RNO→Return to Step 1

NOTE

EVAL

Once flow has been established to the SGs through the Non Safety Aux Feedwater Pump IAW Addendum 38, or at the discretion of the Lead Evaluator, the scenario can be STOPPED and the Simulator Frozen

*How long will it take to feed 3 s/b's to
> 27% WGR?*

Facility: Callaway

Scenario No.: 4, Rev 4

Op-Test No.: 2013301

Examiners: _____ Operators: _____

Initial Conditions: A Reactor Startup has just been completed with Reactor power just above the Point of Adding Heat (POAH). "A" Train CCW is in Service.

Turnover: The plant is in Mode 2. A Reactor Startup has just been completed on the previous shift. Conditions are being held steady while the on-coming crew is performing Just In Time Training for the power increase. Callaway County is under a severe thunderstorm watch. The crew is directed to shift the CCW service loop to "B" Train and leave CCW Pump "A" in service due to scheduled surveillances later in the shift.

Event No.	Malf. No.	Event Type*	Event Description	
1	N/A	RO (N) SRO (N)	Swap CCW Service Loop from "A" to "B" Train	N
2	BBPT0455	SRO (I) RO (I)	Pressurizer pressure fails high (Tech Spec)	I
3	ABPV0002A	BOP (C) SRO (C)	Atmospheric Steam Dump Failure on "B" SG (Tech Spec)	2
4	XMR01_1 PEF01B_1	SRO (C) BOP (C) RO (C)	Loss of ESF transformer XNB02 causing a Loss of NB02/ EDG "B" starts, ESW Pump "B" trips (Tech Spec)	3
5	MD	SRO (M) RO (M) BOP (M)	Loss of Offsite Power, <u>Manual Reactor Trip</u> "A" EDG fails to start Automatically, Loss of All AC Power	4
6	BBPCV 0455A	RO (C) SRO (C)	Pressurizer PORV Fails Partially Open	5
7	PEF01A_2	SRO (C) BOP (C)	ESW Pump "A" Auto Start Failure	6

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

Target Quantitative Attributes (Per Scenario; See Section D.5.d)	Actual Attributes
1. Total malfunctions (5-8)	6 8
2. Malfunctions after EOP entry (1-2)	2 3 2 OK
3. Abnormal events (2-4)	3 ✓
4. Major transients (1-2)	1 ✓
5. EOPs entered/requiring substantive actions (1-2)	2 1 ✓
6. EOP contingencies requiring substantive actions (0-2)	0 1 ✓
7. Critical tasks (2-3)	3 ✓

FRG's

Scenario Event Description
Callaway 2013 NRC Scenario #4

The plant is in Mode 2. A Reactor Startup has just been completed on the previous shift. Conditions are being held steady while the on-coming crew is performing Just In Time Training prior to the plant startup. Callaway County is under a severe thunderstorm watch.

The crew starts the scenario by shifting the CCW service loop from the "A" to the "B" Train. This is to support surveillances scheduled later in the shift.

AOP?
Once the CCW service loop has been shifted, Pressurizer Pressure Channel, PT-455 fails high. The crew should respond IAW OTO-BB-00006, Pressurizer Pressure Control Malfunction, and select away from the failed channel prior to the reactor tripping on low pressurizer pressure. T.S. 3.3.1, 3.3.2, and 3.3.4 apply.

AOP
Once Tech Specs are addressed, SG "B" Atmospheric Steam Dump fails open. The crew should respond per OTO-AB-00001, Steam Dump Malfunction, close the failed valve and initiate action to make repairs. T.S. 3.7.4 applies.

AOP
A fault on ESF Transformer XNB02 occurs, resulting in a loss of power to Bus NB02. "B" EDG starts, but Essential Service Water Pump "B" trips 3 minutes following pump start, forcing the crew to trip the affected Diesel and enter OTO-NB-00002, Loss of Power to NB02. T.S. 3.8.1 applies. The crew will also have to shift back to "A" Train CCW service loop and stop Aux Feed Flow to the Steam Generators from the Turbine Driven Aux Feed Pump. *will they secure TDAFW pump? TS not in D-2's*

Due to the severe weather, a fault at the Montgomery substation results in a Loss of Offsite power. Upon the loss of offsite power, the crew sees that the "A" EDG has not started causing a loss of power to NB01. Since there is no power to NB01 or NB02, the crew will transition to ECA-0.0, Loss of All AC Power, and perform the Immediate Actions. The reactor should be tripped when performing Immediate Actions.

Step 4 - check AFW flow - will BOP have to manually start TDAFW pump?

When the crew gets to Step 5 of ECA-0.0, they will attempt to start the "A" Emergency Diesel Generator and it will start, however the "A" ESW pump fails to start automatically, but should be started manually. Also, when NB01 is energized in Step 5, PZR PORV, BB PCV-455A, fails partially open. BB PCV-455A should be isolated prior to RCS pressure lowering to the Safety Injection setpoint. *- Ref for isolating PSRV prior to IA steps of E-0?*

Once power is restored to NB01, the crew will transition to E-0, Reactor Trip or Safety Injection, and perform appropriate actions. Once the crew has completed applicable portions of E-0 and transitioned to ES-0.1, Reactor Trip Response, or as determined by the Lead examiner, the Scenario can be stopped.

Step 2 - Check all AC Buses → RNB?

OTG - Plant Op Procedure? General Ops?

? - Annunciator Response Procedures

OTN - Sys Op procedure?

Rev 4

Op Test No.: 2013301 Scenario # 4 rev.4 Event # 4 Page 12 of 21

Event Description: Loss of ESF Transformer XNB02 causing Loss of NB02 / EDG "B" starts, ESW Pump "B" trips (Tech Spec)

Proc /Time	Position	Applicant's Actions or Behavior
------------	----------	---------------------------------

Booth Operator Instructions:

- T = 30 minutes or at the discretion of the Lead Examine

Loss of Startup Transformer / Loss of NB02 / EDG Starts / ESW Pump "B" Trips

- Insert Malfunction (NB) XNB02_1, Value = True
- Insert Malfunction (EF) PEF01B, Value = Trip (PRELOADED)

Indications Available:**T = 30**

ANN 21B, NB02 BUS UV
 ANN 22A, XNB02 XFMR LOCKOUT
 ANN 22E, NB02 BUS DGRD VOLT

OTO-NB-00002, Loss of Power to NB02**OTO-NB-00002****CRS/ RO**

(Step 1) CHECK 4160 VAC Bus NB02 - DEENERGIZED

- RNO → Go To Attachment A, Power Restored to NB02

BOP/RO

(Step A1) CHECK 4160VAC Bus NB02 - ENERGIZED

- 4.16KV Bus NB02 light – LIT - YES
- 4.16 KV Bus NB02 Voltage indicates approximately 4160 volts

BOP/RO

(Step A2) CHECK EDG B – RUNNING

BOP/RO

(Step A3) CHECK ESW Flow – Aligned to EDG B

RO/RO

(Step A4) CHECK ESW Train A – Properly Aligned

- ESW Pump A – Running
EF HIS-55A
- ESW Train A To CCW Hx A – Open
EF HIS-51
- ESW Train A To UHS – Open
EF HIS-37

Op Test No.: 2013301 Scenario # 4 rev.4 Event # 4 Page 16 of 21

Event Description: Loss of ESF Transformer XNB02 causing Loss of NB02 / EDG "B" starts, ESW Pump "B" trips (Tech Spec)

Proc /Time	Position	Applicant's Actions or Behavior
------------	----------	---------------------------------

OTO-NB-00002	RO	(Step 14) OPEN NB02 Normal Alternate Feeder Breakers <ul style="list-style-type: none">NB HIS-4, NB02 Normal Supply Breaker NB0209NB HIS-5, NB02 Alternate Supply Breaker NB0212
NOTES		'B' Train CCW pump handswitches are placed in Pull-To-Lock to prevent breaker cycling while NB02 is de-energized
NOTE		At Lead Examiner's discretion move to the next Event

CRS Refer to TS 3.8.1 Cond. —

Op Test No.: 2013301 Scenario # 4 rev.4 Event # 5/6/7 Page 17 of 21

Event Description: Loss of Offsite Power and Failure of EDG "A" to AUTO Start
 Post Trip PZR PORV Fails Partially Open and ESW Pump "A" Fails to AUTO Start

Proc /Time	Position	Applicant's Actions or Behavior
------------	----------	---------------------------------

Booth Operator Instructions:

- T = 50 minutes or at the discretion of the Lead Examiner
- Loss of Offsite Power / DG "A" Fails to Auto Start / ESW Pump "A" Fails to Auto Start
 - Insert Malfunction (EF) PEF01A_1, Value = Block
 - Run Lesson ALL/GENERIC/lossofswitchyard.lsn
 - The Failure of EDG "A" to Auto Start is preloaded
- PORV, BB PCV-455A, failure is preloaded
- When contacted, respond as EDO. Acknowledge entry into the OTO.

Indications Available:

T = 50

ECA-0.0, Loss of All AC Power

ECA-0.0

CRS

Transition to ECA-0.0, Loss of All AC Power

Notes:

- Steps 1 and 2 are immediate action steps
- CSF status trees should be monitored for information only. Functional Restoration Procedures should NOT be implemented

RO

(Step 1) CHECK Reactor Trip

- Reactor Trip and Bypass Breakers –OPEN
- Neutron Flux – Lowering

RNO o Manually TRIP reactor

BOP

(Step 2) CHECK Turbine Trip

- All Turbine Stop valves - CLOSED

RO

(Step 3) Check if RCS is Isolated

- PZR PORVs – CLOSED

- RNO - If PZR pressure is less than 2335 PSIG, THEN CLOSE PORV(s)

Op Test No.: 2013301 Scenario # 4 rev.4 Event # 5/6/7 Page 18 of 21Event Description: Loss of Offsite Power and Failure of EDG "A" to AUTO Start
Post Trip PZR PORV Fails Partially Open and ESW Pump "A" Fails to AUTO Start

Proc /Time	Position	Applicant's Actions or Behavior

ECA-0.0	RO	(Step 3 cont'd) CHECK if RCS is isolated - NO b. Letdown isolation valves – CLOSE c. RCS to Excess Letdown valves –CLOSE d. Reactor Head Vent Valves – CLOSED <i>will letdown be secured?</i>
	BOP	(Step 4) Check AFW Flow – GREATER THAN 285,000 Lbm/hr <i>Actions?</i>
	RO/BOP	(Step 5) TRY to Restore Power to Any AC Emergency Bus: a. Energize AC emergency bus with diesel generator: 1) CHECK both DGs – RUNNING – NO • Manually START DG(s) 2) CHECK AC emergency buses – AT LEAST ONE ENERGIZED b. CHECK AC emergency buses – AT LEAST ONE ENERGIZED – YES c. CHECK ESW Pump associated with energized AC emergency bus(es) – RUNNING – NO 1) ENSURE ESW to UHS valves are OPEN 2) START ESW Pump(s) as necessary d. Return to procedure and step in effect and IMPLEMENT Functional Recovery Procedures as necessary
	(NOTE)	<i>At this time the CREW should attempt to start the "A" Emergency Diesel Generator and it will start and load onto the bus (BB PCV-455A fails open when NB01 reenergizes). Crew should transition to E-0, Reactor Trip or Safety Injection, once power is restored to NB01.</i>
Critical Task	CREW	Manually start ESW Pump A before Emergency Diesel Generator NE01 trips on high temperature.

Appendix D

Op Test No.: 2013301 Scenario # 4 rev.4 Event # 6/7 Page 19 of 21Event Description: Loss of Offsite Power and Failure of EDG "A" to AUTO Start
Post Trip PZR PORV Fails Partially Open and ESW Pump "A" Fails to AUTO Start

Proc /Time	Position	Applicant's Actions or Behavior
------------	----------	---------------------------------

E-0, Reactor Trip Or Safety Injection

E-0	CRS	Implement E-0, Reactor Trip or Safety Injection
	(NOTE)	Steps 1 through 4 are immediate action steps
	RO	(Step 1) CHECK reactor trip: <ul style="list-style-type: none"> Rod bottom lights – all lit Reactor trip and bypass breakers – open Neutron flux - lowering
	BOP	(Step 2) CHECK turbine trip: <ul style="list-style-type: none"> All turbine stop valves - closed
	BOP	(Step 3) CHECK power to AC emergency buses: <ul style="list-style-type: none"> AC emergency buses – at least one energized NB01 is now Energized AC emergency buses – both energized – NO
	CREW	(Step 4) CHECK SI status: <ul style="list-style-type: none"> Check if SI is actuated – NO → Go to RNO
	CREW	(Step 4 RNO) CHECK if SI is required: <ul style="list-style-type: none"> PZR pressure less than or equal to 1849 psig Any SG pressure less than or equal to 615 psig Containment pressure greater than or equal to 3.5 psig If SI is not required, then go to ES-0.1, Reactor Trip Response
	CRS	
ES-0.1	CRS	Implement ES-0.1, Reactor Trip Response
	CRS	Call STA to initiate CSF Status Tree Monitoring <i>Reference?</i>

Appendix D

Op Test No.: 2013301 Scenario # 4 rev.4 Event # 6/7 Page 20 of 21Event Description: Loss of Offsite Power and Failure of EDG "A" to AUTO Start
Post Trip PZR PORV Fails Partially Open and ESW Pump "A" Fails to AUTO Start

Proc /Time	Position	Applicant's Actions or Behavior
------------	----------	---------------------------------

ES-0.1	RO	(Step 1) CHECK RCS temperature control: <ul style="list-style-type: none"> • Check RCPs – any running • Check RCS temperature response - normal
	BOP	(Step 2) CHECK status of AC buses: <ul style="list-style-type: none"> • Check generator output breakers – open • Check all AC buses – energized by offsite power <i>RNO actions?</i>
	RO	(Step 3) CHECK PZR pressure control: <ul style="list-style-type: none"> • Pressure – greater than 1849 psig • Pressure – stable at or trending to 2235 psig (If not closed previously, RCS pressure will be trending down at this time and Step 3 RNO will direct the crew to isolate the failed PORV) <i>Ref for isolating PORV prior to performing IA steps of E-0?</i>
Critical Task	CREW	Manually close the PORV before receiving a Safety Injection.
	RO	(Step 4) CHECK PZR level control: <ul style="list-style-type: none"> • PZR level – greater than 17% • Check instrument air supply containment isolation valve – open (KA HIS-29) • Check charging – in service • Check letdown – in service • PZR level – trending to 25%
	RO	(Step 5) CHECK shutdown reactivity status: <ul style="list-style-type: none"> • Check all control rods – fully inserted • Check if uncontrolled RCS dilution – in progress NO → Go to RNO → Go to Step 6

Appendix D

Op Test No.: 2013301 Scenario # 4 rev.4 Event # 6/7 Page 21 of 21Event Description: Loss of Offsite Power and Failure of EDG "A" to AUTO Start
Post Trip PZR PORV Fails Partially Open and ESW Pump "A" Fails to AUTO Start

Proc /Time	Position	Applicant's Actions or Behavior
------------	----------	---------------------------------

ES-0.1	BOP	(Step 6) CHECK feedwater status: <ul style="list-style-type: none"> • Check RCS Tavg – less than 564°F • Main feedwater pumps – tripped • Check main feedwater reg valves – closed • Check main feedwater reg bypass valves – closed • Check total feed flow to SGs – greater than 285,000 lbm/hr
	BOP	(Step 7) CHECK SG Levels <ol style="list-style-type: none"> Narrow range levels – GREATER THAN 7% CONTROL feed flow to maintain narrow range levels between 7% and 52%
	BOP	(Step 8) TRANSFER Condenser Steam Dumps to Steam Pressure Mode: <ol style="list-style-type: none"> CHECK condenser – AVAILABLE – NO RNO: If Condenser steam dump is NOT available, THEN use SG ASD(s) as necessary for any subsequent cooldown.
NOTE	EVAL	Once Steam Dumps have been addressed or at the discretion of the Lead Evaluator, the scenario can be STOPPED and the Simulator Frozen

Examiner Note: Follow-up question to all Applicants
Q: Why didn't the R trip upon loss of all AC pwr?

A: _____

