Final Submittal
(Blue Paper)

HARRIS EXAM 50-400/2002-302
OPERATING TEST)

NOVEMBER 21,2002

FINAL JPMS

HARRIS NUCLEAR PLANT

2002

SRO NRC RETEST JPM'S

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REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

JPM -B.1.a

Emergency Boration

CANDIDATE: _____

EXAMINER: _____

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

TASK: Perform AOP-002, Emergency Boration

ALTERNATE PATH: Emergency Boration wing RWST path **via** LCV-115B and/or LCV-I15D, to the CSIP suction

FACILITY JPM NUMBER: CR-037

KA: 004A2.14 IMPORTANCE: SRO 3.9 RO 3.8

KA STATEMENT: Ability to (a) predict the impacts of the following malfunctions or operations on the CVCS; and (b) based on those predictions, use procedures **to** correct, control, or mitigate. the consequences of those malfunctions or operations: Emergency boration

TASK STANDARD: **At** least 90 gpm Boration flow as indicated on FI-122A.1 is being delivered from the running Charging/Safety Injection Pump to the Reactor Coolant System

PREFERRED EVALUATION LOCATION: SIMULATOR **X** IN PLANT ____

PREFERRED EVALUATION METHOD: PERFORM **X** SIMULATE ____

REFERENCES: AOP-002, Emergency Boration

VALIDATION TIME: 10 MINUTES TIME CRITICAL: No

CANDIDATE: _____

START TIME: _____ FINISH TIME: _____

PERFORMANCE TIME: _____ MINIJTES

PERFORMANCE RATING: SAT _____ UNSAT _____

COMMENTS: _____

_____

_____

EXAMINER: _____
Signature Date

TOOLS / EQUIPMENT / PROCEDURES NEEDED:

- Initialize to a 100% power IC-19 (OK to a saved IC with the following setup)
- Fail two rods to insert on a Reactor Trip.
  - o MFP CRF16A rod **D-4** severity 220 steps (control bank C)
  - o MFP CRF16B rod H-14 severity 220 steps (control bank D)
- Fail the following valves shut:
  - o 1CS-278 Emergency Boration Valve (ORP XA2I150 as *is)*
  - o FCV-I **13A** Boric Acid to Blender (ORP XA2I151 as is)
- Perform **a** manual reactor trip.
  - o **PATH-1** until transition *to* EPP-004 directions to borate for rods failing tu insert.
- FREEZE the simulator in a stable condition. (An RO maybe required to maintain the plant stable and silence annunciators not associated with this JPM)
- When candidate **is** ready. place simulator in RUN.

- AOP-002, "Emergency Boration"

READ TO OPERATOR

INSTRUCTIONS TO CANDIDATE:

I will explain the initial conditions and state the task to be performed. All control room steps shall be performed **for** this JPM, including any required communications. 6 will provide initiating cues and reports on other actions when directed or asked by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task, return the handout sheet I provide you.

INITIAL CONDITIONS:

The reactor has just tripped from 100 percent power.

INI'I'IATING CUE(S):

You are the Reactor Operator. Observation of DRPI following the reactor trip indicates two control rods are stuck out. EPP-EOP-004 is being performed and the SCO directs you to refer to AOP-002 and initiate emergency boration.

START TIME:

*** DENOTES CRITICAL STEP**

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
CANDIDATE SHOULD OBTAIN A COPY OF AOP-002					
1	NA	Obtain procedure	Obtain current copy of AOP-002		
2	**3.0**	Go to Section **3.0,** OPERATOR ACTIONS.	Refers to Section **3.0**		
3	NA	NOTE: This procedure contains no immediate actions	Reads note and continues with procedure		
4	3.1	Start a Boric Acid pump	Locates a Boric Acid Pump Control Switch and takes it to START	Pump running indication light changes **from** green **to** red	
5	**3.2**	ESTABLISH boration flowpath using 1CS-278 as follows: a. OPEN 1CS-278, Emergency Boric Acid Addition	Locates and 1CS-278 Controi Switch and takes it to OPEN	Valve is failed in the CLOSED position. 1CS-278 position indication light remains green.	
6	3.2.a RNO	GO TO Step **3**	Determines that 1CS-278 will not open and fallows the response not obtained instructions- go to step **3**		

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
7	3.3	ESTABLISH boration flowpath using FCV-113A/B as follows: a. OPEN the following valves o 1CS-283 Boric Acid to Boric Acid Blender FCV-I 13A	Locates FCV-113A Control Switch and takes it to OPEN	Valve is failed in the CLOSED position. 1FCV-1 13A indication light remains green.	
8	3.3.a RNO	GO TO Step 6	Determines that 1FCV-113A will not open and follows the response not obtained instructions- go to step 6		
*9	3.6	ESTABLISH boration flow from RWST as follows: a. OPEN the following valves • 1CS-291, Suction From RWST LCV-115B	Locates LCV-1 15B and takes the control switch to OPEN	**(Critical that 1CS-291 and/or 1CS-292 are opened – parallel path from RWST)** Position indication light for LCV-I 15B changes from green to red	
10	3.6.a (cont)	• 1CS-292, Suction From RWST LCV-115D	Locates LCV-115D and takes the control switch to OPEN	Position indication light for LCV-115D changes %om green to red	

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
*11	3.6.h	SHUT the following valves • **ICs-165,** VCT Outlet LCV-115C	Locates ICS-165, VCT Outlet LCV-115C and takes the control switch to CLOSE	**(Critical that ICS-165 and/or ICS-166 are/is closed- series path from VCT)** Position indication light for LCV-115C changes from red to green	
12	**3.6.b** (cont)	• ICS-166, VCT Outlet LCV-115E	Locates **ICs-166,** VCT Outlet **LCV-** 115E and takes the control switch to **CLOSE**	Position indication Light for LCV-115E changes from red to green	
*13	3.6.c	VERIFY and **MAINTAIN** at least 90 gpm charging flow to RCS (FI-122A.1) until required boration is completed.	Locates Controller **FK- 122.**1 charging flow, and places it in manual. Increases the output to ≥ 90 gpm and monitors charging flow on FI-122A1.		
14	**NA**	CAUTION – Low VCT level is a precursor to gas binding the CSIPs	Reads caution and continues with procedure		
15	**3.6.d**	CHECK **VCT** level greater than or equal to 5% and can **9e** maintained on scale	Locates LI-115 and monitors VCT level		
	TASK COMPLETE WHEN > *90* GPM FLOWRATE OF BORIC ACID FROM RWST TO RCS IS BEING MAINTAINED AND MONITORED				

STOP TIME: _____

CANDIDATE CUE SHEET

(TO BE RETURNED TO EXAMINER UPON COMPLETION OF **TASK)**

INITIAL CONDITIONS:

The reactor has just tripped from 100 percent power.

INITIATING CUE(S):

You are the Reactor Operator. Observation of DRPI following the reactor trip indicates two control rods are stuck **out.** EPP-EOP-004 is being performed and the SCO directs you to refer to AOP-002 and initiate emergency boration.

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

JPM -B.1.b

ISOLATE RUPTURED SG--MSIV WILL NOT CLOSE

CANDIDATE: _____

EXAMINER: _____

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

TASK: Implement EOP-PATH 2, Steam Generator Tube Rupture

ALTERNATE PATH: Ruptured SG MSIV will NOT isolate. Operator performs a manual isolation of intact SG's from the **ruptured** SG and minimizes **the** steam flow from the ruptured SG

FACILITY JPM NUMBER: CR-105

KA: **035A2.01** IMPORTANCE: SRO 4.6 RO **4.5**

KA STATEMENT: Abiiitp to (a) predict the impacts of the following malfunctions or operations on the SG; and (b) based on those predictions, **use** procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Faulted or ruptured S/Gs

TASK STANDARD: Steam Generator B isolated per PATH-2 and PATH-2 Guide

PREFERRED EVALUATION LOCATION: SIMULATOR **X** IN PLANT ___

PREFERRED EVALUATION METHOD: PERFORM **X** SIMULATE ___

REFERENCES: EOP-PATH 2 GUIDE

VALIDATION TIME: 15 MINUTES TIME CRITICAL No

CANDIDATE: _____

START TIME: _____ FINISH TIME: _____

PERFORMANCE TIME: _____ MINUTES

PERFORMANCE RATING: SAT _____ UNSAT _____

COMMENTS: _____

_____

EXAMINER: _____
Signature Date

TOOLS / EQUIPMENT / PROCEDURES NEEDED:

- Initialize to a 100% power IC-19. (OR to a saved IC with the following setup)
- Fail B Steam Generator MSIV 1MS-82
  - **ORP XB2I037 as is (will not shut from MCB switch)**
  - **MFP MSS05B fail tu close (will nut shut on Main Steam Isolation Signal)**
- Insert an SGTR of sufficient size *to* require an SI
  - **MFP SGN05B final severity 160**
  - **Select GRID 5 on RM-11**
- Complete PATH-1 until the first PATH-2 transition point. (Step 16--Secondary Radiation Normal.) Transition to PATH-2 through step 5.
  - ✓ Re-OPEN MS-70 and MS-72 (if closed to reduce AFW) and minimize AFW flow
- Clear all annunciators, RM-11 alarms, and stabilize the plant
- FREEZE the simulator
- When candidate is ready, place simulator in RUN.

- PATH-2 GUIDE

READ TO OPERATOR

INSTRUCTIONS TO CANDIDATE:

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

INITIAL CONDITIONS:

The Reactor **was** at 100% power when a tube rupture exceeds the VCT makeup capability. The crew manually Safety Injected and have performed the actions of PATH-1. A transition to PATH-2 was made and the B SG has been identified as ruptured by Main Steam line radiation readings. PATH-2 step 5 has just been completed.

INITIATING CUE(S):

You are the Balance of Plant Operator. You are to continue with PATII-2 starting at step 6 until otherwise directed. Other operators have the foldout responsibilities.

START TIME:

*** DENOTES CRITICAL STEP**

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
CUE	**CANDIDATE SHOULD OBTAIN A COPY OF PATH-2** **STEPS 1-5 of PATH-2 have been completed**				
1	N/A	Obtain procedure	Obtain **current** copy of PATH-2		
2	Caution prior to **step 6**	CAUTION • At least one SG must be maintained available for RCS cooldown • **If** the TDAFW pump is the only available source of feed flow, une steam supply valve from an intact SG must be maintained open	**Reviews** caution prior to proceeding with step.		
***3**	6	Isolate Flow From Ruptured SG a. Adjust ruptured SG PORV controller setpoint to **88%** (1 145PSIG) AND place in AUTO	Locates 1MS-60 controller and depresses setpoint raise pushbutton until setpoint is at 88%. 'Verifies controller is in AUTO.	1MS-60 controller setpoint AUTO pushbutton is lit	
4	6.b	Check ruptured SG POKV SHUT	Locates Main Steam PORV Position indication for PCV 308B and verifies shut	PCV 308B indication light is green	

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
***5**	**6.c**	Shu? ruptured ***SG*** steam supply valve to TDAFW pump: SGB: 1MS-70	Locates control switch for 1MS-70 and shuts valve.	1MS-70 indication light changes from red to green	
6	6.d	Verify blowdown isolation valves **from** ruptured SG – SHUT	On **AEQ-I,** locates indications for 1BD-20, 1BD-26, and 1BD-30 and verifies them SHUT	1BD-20, ***26,*** arid **30** indication lights are green.	
***7**	6.e	Shut ruptured SG main steam drain isolation before MSIV: SGB: 1MS-266	Locates control switch for 1MS-266 and shuts valve	1MS-266 indication light changes **from** red to green	
8	**6.f**	Shut ruptured SG MISV AND **bypass** valve.	Locates 1MS-82 control switch and takes it to SHUT. (May initiate Main Steam Isolation in an attempt to shut the MSIV.)	Indication light **for** 1MS-82 does not change. Red indication light is still lit.	
9	6.f RNO	GO TO Step 7	Reads RNO and continues with step 7		
***10**	*4*	Isolate Intact SG(s) From Ruptured SG AND Minimize Steam Flow From Ruptured SG: a. Shut all remaining MSIV AND bypass valves	Locates control snitches for 1MS-80 and 1MS-84 and takes them to SHUT. (May initiate Main Steam Isolation to shut valves – if **MSI** initiated in step **8** valves may already be shut.)	1**MS-80** and 1MS-**84** indicator lights will change from red to green.	

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
*11	7.6	Place both steam dump interlock bypass switches to OFF/RESET	Locates and places both Steam Dump Interlock switches to OFFIRESET	Both Steam Dump Interlock switches are in the OFF/RESET position.	
12	7.c	Use intact SG(s) POKV for all further steam dumping.	Uses A arid C Steam Generator PORVs to control RCS temperature if necessary.		
CUE	**[EVALUATOR DISCRETION: IF PROGRESS IN THE PROCEDURE IS NOT CONTINUING THEN CUE:]** **OTHER OPERATORS WILL MONITOR RCS TEMPERATURE AND MAKE ADDITIONAL ADJUSTMENTS USING A & C PORV'S. CONTINUE WITH PATE-2**				
13	9.d	Isolate steam release path from ruptured SG using Attachment 1.	Reviews Attachment 1 to PATH-?. Guide.		
14	NA	NOTE: Isolation of possible steam release paths downstream of the MSIVs may be completed in parallel with RCS cooldown and subsequent recovery actions.	Reviews NOTE and continues with procedure.		
15	1	Verify the following valves SHUT: • Turbine stop valves	Locates valve test panel and checks TV-1, TV-2, TV-3. and TV-4 SHUT.	All throttle valve indications are "green".	

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
16	1 (cont)	• Condenser steam dump valves	Locates indications on **Status** Light Box 1 for CNBSR STEAM DUMP PCV valves and DNDSR COOLDOWN STEAM DUMP Valves and verifies valves are shut.	All condenser steam dump valve indications are "green".	
17	1 (cont)	• Atmospheric steam dump valves	Locates indications on Status Light Box 1 for ATMOSPHERIC STEAM BUMP PCV valves and checks valves SHUT.	All atmospheric steam dump valve indications are "green".	
I8	1 (cont)	• MSR shutoff AND purge valves: 1MS-151 1MS-152 1MS-149 1MS-161 1MS-150 1MS-163	Verifies that 1MS-151 1MS-152 1MS-149 1MS-161 1MS-150 1MS-163 are SHUT	Indication lights for 1MS-151, 1MS-152, 1MS-149, 1MS-161, MS-150, and 1MS-**163** are "green"	
*19	1 (cont)	• Main steam to auxiliary steam isolation valve: 1AS-244 (Radwaste Control Room)	Contacts Radwaste Control Room and directs them to SHUT 1AS-244 – Main Steam To Auxiliary Steam Isolation Valve.		
CUE		**(AS RADWASTE OPERATOR)** – Understand **SHUT** 1AS-244 Main **Steam To Auxiliary Steam Isolation Valve. — Wait a** few seconds and report – **1AS-244 Main** Steam **To Auxiliary Steam Isolation Valve is SHUT.**			

JPM STEP	PROC **STEP**	ELEMENT	**STANDARD**	NOTES	SAT / **UNSAT**
20	2	Locally Shut Main Steam Drain LCV Inlet Isolations AND Orifice Inlet Isolation Valves: • Main steam drains after MSIVs (platform 10 ft above 261 steam tunnel): 1MS-249 1MS-252 1MS-284 1MS-287 1MS-319 1MS-322 • Main steam header and steam dump header drains (286 TB near condenser): IMS-374 (north side) 1MS-377 (north side) 1MS-425 (north side) 1MS-428 (north side) 1MS-433(north side) 1MS-409 (north side) 1MS-391 (west side) 1MS-394 (west side)	Contacts AO **and** directs implementation of remaining **steps** in "Attachment 1" sheet 2 of 2		
CITE	**AO ACKNOWLEGES REQUEST TO PERFORM ATTACHMENT I STEPS. ALL OTHER REMAINING STEPS WILL BE PERFORMED BY ANOTHER OPERATOR** **TASK COMPLETE**				

STOP TIME: _____

CANDIDATE CUE SHEET

(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

'The Reactor was at 100% power when a tube rupture exceeds the VCT makeup capability. The crew manually Safety Injected and have performed the actions of PATH-1. A transition to PATH-2 was made and the B SG has been identified as ruptured by Main Steam line radiation readings. PATPI-2 step 5 has just been completed.

INITIATING CUE(S):

You are the Balance of Plant Operator. **You** are to continue with PATH-2 starting at step ***6*** until otherwise directed. Other operators have the foldout responsibilities.

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

JPM -B.1.6

Restoring the Control Room **Area** HVAC System to Normal **After** a Control Room Isolation Signal

CANDIDATE: _____

EXAMINER: _____

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

TASK: Return the Control Room Area Ventilation Isolation System to Normal

ALTERNATE PATH None

FACILITY JPM NUMBER: NEW

KA: 013A4.02 IMPORTANCE: SRO 4.4 RO 4.3

KA STATEMENT: Ability to manually operate and/or monitor in the control room: Reset of ESFAS channel

TASK STANDARD: Control Room Area HVAC system returned to normal mode (no longer in Recirculation lineup) and periodic monitoring for O_2 and CO_2 is no longer required.

PREFERRED EVALUATION LOCATION: SIMULATOR X IN PLANT ___

PREFERRED EVALUATION METHOD: PERFORM X SIMULATE ___

REFERENCES: OP-173, Control Room Area HVAC System

VALIDATION TIME: 15 MINUTES TIME CRITICAL: No

CANDIDATE: _____

START TIME: _____ FINISH TIME: _____

PERFORMANCE TIME: _____ MINUTES

PERFORMANCE RATING: SAT _____ UNSAT _____

COMMENTS: _____

_____

_____

EXAMINER: _____
Signature Date

TOOLS / EQIJIPMENT / PROCEDURES NEEDED:

- Initialize to a 100% power IC. (OR to a saved IC with the following setup)
- Enter an inadvertent SI signal
- Kespond to SI IAW Path-1 to step **28**
- Transition to EPP-008. Perform step 1 through step 35.b - perform Attachment I "Plant Systems Realignment"
  (step **8** in Attachment 1 is realign control room area IHVAC per OP-173 section 8.4)
- Clear all annunciators and stabilize the plant
- FREEZE the simulator
- When candidate is ready, place simulator in RUN.

- OP-173, "Control Room Area HVAC System"

READ TO OPERATOR

INSTRUCTIONS TO CANDIDATE:

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

INITIAL CONDITIONS:

The plant was operating at 100% power when an inadvertent Safety Injection signal **was** received. 'Theoperators have performed the actions of Path-1 and transitioned to EPP-008. The crew is now at the point of realigning plant systems for normal operation per Attachment 1. The SCQ has directed you to perform Step 8 of Attachment 1 Realign Control Room Area HVAC using OP-173, "CONTROL ROOM AREA IIVAC SYSTEM", Section **8.4.** The initial conditions are satisfied and the HVAC system is in operation per section 8.1 of OP-173.

INITIATING CUE(S):

You are the Balance of Plant Operator. Restore the Control Room Area HVAC System to normal in accordance with OP-173 "CONTROL ROOM AREA IIVAC SYSTEM". Section **8.4.**

START TIME:

*** DENOTES CRITICAL STEP**

JPM STEP	PRQC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
CUE	**PROVIDE CANDIDATE WITH COPY OF OP-173 section 8.4**				
1	NA	Obtain procedure	Obtain current copy of OP-173 section 8.4		
2	8.4	Go to Section 8.4, Restoring the Control Room Area HVAC System to Normal after a Control Room Isolation Signal or Manual Kecirc.	Refers to Section 8.4		
CUE	**THE INITIAL CONDITIONS ARE SATISFIED AND THE CONTROL ROOM AREA HVAC SYST S IN OPERATION PER SECTION 8.1**				
3	8.4.1	Initial Conditions 1. Control Room Isolation Signal clear 2. Control Room Isolation Signal clear			
*4	8.4.2.1	Place the CONTROL ROOM ISOL TRAIN A and B RESET switches to RESET	Locates and manually operates the Control Room Isol Train A reset switch to reset and the Train B reset switch to reset		
5	8.4.2.2	Shut any EMER FILT SOUTH (NORTH) OUTSIDE AIR INLET valves that are open, 1CZ-9 SA and 1CZ-10 SB or 1CZ-11 SA and 1CZ-12 SB.	Locates valves and verifies ALL outside air inlets are closed.	Valves ICZ-9 SA 1CZ-10 SB 1CZ-11 SA 1CZ-12 SB position indication lights are "green".	

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
NA	NOTE	Performing steps 8.4.2.03 through 8.4.2.05 quickly will minimize excessive pressurization of the Main Control Room.	Reads note, reviews steps and Locates associated control hoard switches prior to performance of steps to allow minimal time to perform steps.		
*6	8.4.2.3	Open NORMAL INTAKES ICZ-1 **SA** and ICZ-2 SB.	Locates and Opens **NORMAL "TAKES** ICZ-1 **SA** and ICZ-2 **SB**	Position indication lights change from "green" to "red"	
7	8.4.2.4	If more than one **NORMAL** SUPPLY **FAN AH-** 15 **ASA** (BSB) is running, **stop** one fan and verify associated valves/dampers align for the ;topped train **as** follows:	Locates and STOPS one NORMAL **SUPPLY FAN** (either **AH-15 ASA** or **AH-15 BSB** and verifies the associated valvesidampers align for the stopped train	Selected Supply fan running indication light changes from "red" to "green"	
		AH-I5 IN CZ-D1 (CZ-D2) Shut **SED-5** (6)	**AH-15** IN CZ-D1 (CZ-D2) **Shut** (indication) on **SIB-5** ***(6)***	SLB indication light changes from "red" to "green"	
		AH-I5 IN CZ-25 (CZ-26) Shut **SLB-5** ***(6)***	AH-15 IN CZ-25 (CZ-26) **Shut** (indication) on SLB-5 ***(6)***	**SLB** indication light changes from "red" to "green"	
		CON?'**ROM NORMAL** RECIRC DAMPER CZ-D69 **SA** (CZ-D70 SB) Shut	CONT **ROM** NORMAL **RECIRC DAMPER** CZ-Dh9 **SA** (CZ-D70 SD) **Shut**	Damper position indication light changes from "red" to "green"	

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
8	8.4.2.5	Start NORMAL EXHAUST **FAN** E-9 **A (B)** and verify:	Locates and **starts** NORMAL EXHAUST **FAN E-9 A** OR (B) and verifies:	Selected fan indication light changes from "green" to "red"	
		E-9A(B) IN CZ-D6 (CZ-D7) Open (located on SLB-7)	E-9A(B) **IN** CZ-D6 (CZ-D7) Open (located on SLB-7)	**Indication** light changes from "green" to "red"	
		E-9A(B) OUT CZ-D12 (CZ-13) Modulates (located on SLB-7)	E-9A(B) OIJT CZ-D12 (62-13) Modulates (located on SLB-7)	both "green and red" lights are on	
		NORMAL EXHAUST ICZ-3 **SA** and **ICZ-4** SB **Open**	**NORMAL** EXHAUST **ICZ-3 SA** and ICZ-4 SB Open	Indication light changes from **"green"** to "red"	
9	8.4.2.6	Stop both EMERGENCY **FILTRATION FANS R-2 A-SA** and **R-2** B-SB and verify:	Locates and **stops** both EMERGENCY FILTRATION **FANS R-2 A-SA** and **R-2** B-SB and verifies:	Indication light changes from "red" to "green"	
		R2 INLET CZ-23 (CZ-24) Shut [located on SLB-5 (6)]	**R2 INLET CZ-23** (CZ-24) Shut [located on SLB-5 (6)]	indication light changes from "red" to "green"	
		R2 DISCH CZ-21 **(CZ-22)** Shut [located on SLB-5 (6)]	R2 DISCH CZ-21 (CZ-22) Shut [located on SLB-5 (6)]	"Indication light changes from "red" to "green"	

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
10	8.4.2.7	Shut the EMERGENCY FILTRATION RECIRC dampers CZ-D66 **SA** and CZ-D61 **SB**	Locates the control switches and shuts the EMERGENCY FILTRATION RECIRC dampers CZ-D66 **SA** and CZ-D61 **SB**	Indication light changes from **"red"** to "green" Indication light changes from "red" to "green"	
CUE		**ANOTHER OPERATOR WILL COMPLETE THE REMAINING VENTILATION RESTORATION** **TASK COMPLETE**			

STOP TIME: _____

CANDIDATE CUE SHEET

(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

The plant was operating at 100% power when an inadvertent Safety Injection signal was received. The operators have performed the actions of Path-1 and transitioned to EPP-008. The crew is now at the point of realigning plant systems for normal operation per Attachment 1. The SCO has directed you to perform Step 8 of Attachment 1 Realign Control Room Area HVAC using OP-173, "CONTROL ROOM AREA HVAC SYSTEM, Section 8.4. The initial conditions are satisfied and the KVAC system is in operation per section 8.1 of OP-173.

INITIAIING CUE(S):

You are the Balance of Plant Operator. Restore the Control Room Area HVAC System to normal in accordance with **OP-173** "CONTROL ROOM AREA IIVAC SYSTEM', Section **8.4.**

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

JPM -B.2.a

ENERGIZE A DEAD BUS WITH A DIESEL LOCALLY

CANDIDATE: _____

EXAMINER: _____

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

TASK: Load a Diesel Generator Locally per OP-I55

ALTERNATE PATH: NO

FACILITY JPM NUMBER: IP-135

KA: 062A2.05 IMPORTANCE: SRO 3.3 RO 2.9

KA STATEMENT: Ability to (a) predict the impacts of the following malfunctions or operations on the AC Distribution System; and (b) based on those predictions, use procedures to correct, controi, or mitigate the consequences of those malfunctions or operations: Methods for energizing a dead bus

TASK STANDARD: Emergency Diesel Generator Output Breaker 126 is CLOSED.

PREFERRED EVALUATION LOCATION: SIMULATOR ___ INPLANT X

PREFERRED EVALUATION METHOD: PERFORM ___ SIMULATE X

REFERENCES: OP-155

VALIDATION TIME: 10 MINUTES TIME CRITICAL: No

CANDIDATE: _____

START TIME: _____ FINISH TIME: _____

PERFORMANCE TIME: _____ MINUTES

PERFORMANCE RATING: SAT _____ UNSAT _____

COMMENTS: _____

_____

_____

EXAMINER: _____
Signature Date

TOOLS / EQUIPMENT / PROCEDURES NEEDED:

- None

- OP-155, Section 8.13

READ TO OPERATOR

INSTRUCTIONS TO CANDIDATE:

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

INITIAL CONDITIONS:

Due to a fire, the Main Control Room has been evacuated and AOP-004 is being implemented. During the transfer to the ACP, the normal power feed to 6.9KV bus 1B-SB was lost. EDG 1BSB has been Locally started per OF-155 Section 8.14 but has not been loaded.

INITIATING CUE(S):

The SCO instructs you to locally energize 6.9KV bus 1B-SB from the Emergency Diesel Generator per OP-155 Section **8.13.**

START TIME:

*** DENOTES CRITICAL STEP**

JPM STEP	PROC **STEP**	ELEMENT	STANDARD	NOTES	SAT / UNSAT
CUE	**PROVIDE CANDIDATE WITH COPY OF OP-155, Section 8.13 and Attachment 9**				
1	N/A	Obtain procedure	Obtain current copy of OP-155, Section **6.13**		
CUE	**Provide when at the Generator Control Panel:** **ALL Initial Conditions are met.** **Initial conditions:** **1. EDG 1B-SB is running** **2. At GCP, UNIT-PARALLEL switch in PARALLEL** **3. At GCP, VOLTAGE REGULATOR TRANSFER SWITCH in AUTO** **4. At GCP, CONTROL TRANSFER SELECTOR SWITCH in LOCAL**				
2	8.13.2.1	At GCP, Position synchronizing switch #2 in ON	Locates SYNCHRONIZING **SWITCH** #2 and takes it to ON.		
CUE	**Synchronizing Switch #2 is pointing to ON.**				
3	NOTE	• The Synch **Check** Relay will be bypassed on an undervoltage on the safety bus • When EDG output breaker is closed, the sequencer **will** place **loads** *onto* the EDG and the maximum load will be that of the safety bus.	Reviews note and continues with the procedure		

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
*4	8.13.2.2	Position CS-1750.2SB, BREAKER 126 Control Switch IB-SB, to CLOSE.	Locates CS-1750.2SB and takes it to the CLOSE position.		
5	8.13.2.3	Verify the associated EDG Output Breaker 126-SB indicates closed.	Observes the indicating lights for breaker 126.		
CUE	Green light is out, amber light is out, and red light is lit.				
6	CAUTION	Do not exceed engine and generator limitations listed in Attachment 9	Reviews Attachment 9. Checks local indications for Watts and VARS and verifies EDG operation is in the "acceptable operation" region of Attachment 9.		
	Examiner note: When EDG Output Breaker 126-SB closes the sequencer will load equipment onto the bus over the next 45 seconds. The readings below are the bus load AFTER all loads have sequenced on. (Located on the upper right portion of the Generator Control Panel are 5 meters. From left to right – AC Volts. MegaWatts, MegaVars, Frequency, AC Ammeter. The MegaWatts and MegaVar meters are checked for Attachment 9 capacity curve.)				
CUE.	Meter readings - 6800 AC Volts 4 MW 2 MVARS 60 Hz 370 Amps *(These readings are within limits of Attachment 9)* (IF asked about the two Generator meters on the middle of the panel) Generator Field Amps = 180 Amps Field DC Voltage = 60 volts				

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
7	8.13.2.4	Position EDG SYNCHRONIZING SWITCH #2 in OFF	Takes the EDG SYNCHRONIZING SWITCH #2 to the OFF position.		
CUE	Synchronizing Switch #2 is pointing to OFF				
8	CAUTION	To prevent EDG damage. service water should be supplied as soon as possible following emergency bus reenergization.	Reviews caution and continues with the pmcedure	NOTE: Candidate may contact ACP operator to verify that service water flow has been established. (If so read CUE after step 10)	
9	S.13.2.5	Monitor EDG temperatures	Locates 'Temperature Selector switch on the Engine Control Panel and monitors the temperatures.		
CUE	Diesel temperatures are normal for the engine load.				
10	8.13.2.6	Verify service water is supplied to EDG	Contacts ACP operator to verify service water flow has been established.		
CUE	ACP operator reports that Service Water flow has been established. TASK COMPLETE				

STOP TIME: _____

CANDIDATE CUE SHEET

(TO BE RETURNED TO EXAMINER UPON COMPLETION OF **TASK)**

INITIAL CONDITIONS:

Due to a fire, the Main Control Room has been evacuated and **AOP-004** is being implemented. During the transfer to the ACP, the normal power feed to 6.9KV bus 1B-SB was lost. EDG 1BSB has been locally started per OP-155 Section 8.14 but has not been loaded.

INITIATING CUE(S):

The SCO instructs you to locally energize 6.9KV bus 1B-SB from the Emergency Diesel Generator per OP-155 Section **8.13.**

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

JPM -B.2.b

EMERGENCY MAKEUP TO FUEL POOLS FROM EMERGENCY SERVICE WATER SYSTEM

CANDIDATE: _____

EXAMINER: _____

REGION II
INITIAL LICENSE EXAMINATIOI
JOB PERFORMANCE MEASURE

TASK: Operate the Spent Fuel Pool Cooling System Per OP-116

ALTERNATE PATH: NO

FACILITY JPM NUMBER: IP-137

KA: 033A2.03 IMPORTANCE: SRO 4.6 KO 4.5

KA STATEMENT: Ability to (a) predict the impacts of the following malfunctions or operations on the Spent Fuel Pool Cooling System; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Abnormal spent fuel pool water level or loss of water level

TASK STANDARD: Desired level being maintained in Fuel Pools

PREFERRED EVALUATION LOCATION: SIMULATOR ___ INPLANT X

PREFERRED EVALUATION METHOD: PERFORM ___ SIMULATE X

REFERENCES: OP-116 Section **8.7**

VALIDATION TIME: 15 MINUTES TIME CRITICAL: No

CANDIDATE: _____

START TIME: _____ FINISH TIME: _____

PERFORMANCE TIME: _____ MINUTES

PERFORMANCE RATING: SAT _____ UNSAT _____

COMMENTS: _____

_____

_____

EXAMINER: _____
Signature Date

TOOLS / EQUIPMENT / PROCEDURES NEEDED:

- Approximately 50 feet of 1-inch red tubber hose
- 1-inch threaded **couplings**
- Pipe wrench or pliers
- Backflow preventer
- Extension ladder or tall step ladder

- OP-116, Section **8.7**

READ TO OPERATOR

INSTRUCTIONS TO CANDIDATE:

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

INITIAL CONDITIONS:

The plant is in mode 6 with the core offloaded. **A** leak has developed in the **A and** B Fuel Pools. The only source of makeup water mailable to the fuel pool is from "B" Emergency Service Water Header.

INITIATING CUE(S):

The SCO has directed you to fill the A and E Fuel Pools from Emergency Service Water Header "B" using OP-116, Section 8.7

START TIME:

*** DENOTES CRITICAL STEP**

JPM STEP	PRQC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
CUE	**PROVIDE CANDIDATE WITH COPY OF OP-116,** Section **8.7**				
1	N/A	Obtain procedure	Obtain current copy **of** OP-116, Section **S.7**		
CUE	**Initial** Conditions: **Fuel Pool gates # 3 and # 4 are removed. Fuel pool** cooling **is shutdown per** Section **7.1**				
2	NOTE	The gang box located in the **236** RAR, at the entrance to the *2* 16-pipe tunnel area should contain all the necessary hoses **arid** couplings.	Operator reads note and proceeds to gang box **236** RAB.	I~ o has "Caution Radioactive Materials Tag" on front handle. This tag identifies that the box is *capable* **of** storing radioactive materials. There are no "radioactive materials" identified (3R in the box.	
3	Caution	*A* backflow preventer should be used to prevent possible contamination to the ESW System.	Operator reads caution and continues with procedure.		

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
*4	8.7.1.4	Approximately 50 feet of I-inch rubber hose and 1-inch threaded couplings have been obtained to be used as a jumper between two vent lines.	Locates approximately 50 feet of I-inch rubber hose and couplings.	Hose is labeled for installation to valves and backflow preventer is instalied on one end.	
CUE	**For the purposes of this JPM location of the needed items is sufficient, do not remove hoses and couplings from storage location. Jumper connection will be simulated.**				
5	NOTE	Since the ESW System uses raw water with high chloride content, it should only be used in an extreme emergency.	Operator reads note and continues with procedure.		
6	8.7.2.1	Verify shut ICT-23, RWST to SFP pump suction.	Locates 1CT-23 and verifies shut.		
CUE	**Valve 1CT-23 is shut.**				
7	NOTE	If Train B of ESW is out of service, the connection at 1SW-269 (located on Diesel Generator 1A ESW return line in **236 KAB)** may be used instead of the connection at valve 1SW-1239.	Operator reads note and determines that Train B is in service and will NOT need to use 1SW-269.		
*8	8.7.2.2	Connect jumper between designated SFPCCS emerg makeup conn vent vlv, 1SF-76 (located down-stream of 1CT-23) and valve 1SW-1239 (located on Diesel Generator 1B ESW return line in 236 RAB).	Locates 1SI:-76 and 1SW-1239 then connects hose between connections.	A tall stepladder or extension ladder will be required to reach the connections. A pipe wrench will be needed to remove the pipe caps.	

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
*9	8.7.2.3	Open 1SF-10, RWST to A Supply Isolation	Locates and opens 1SF-10.		
CUE	1SF-10 is **OPEN.**				
10	NOTE	E Train (A Train) **ESW** will he inoperable whenever 1SW-1239 (1SW-269) is opened	Operator reads note and determines that B Train will be inoperable when 1SW-1239 is opened.	Candidate will either communicate to the control room or record the time the valve is open.	
CUE	**(IF REPORTING TO CONTROL ROOM TIME OF INOPERABILITY)** **Control room acknowledges B Train inoperable.**				
11	8.7.2.4	While closely monitoring fuel pool levels, open the following valves:	Reads step (may request another operator to monitor level)		
CUE	Another operator **is** monitoring fuel **pool** levels.				
*11 (cont)	8.7.2.4.a	a. 1SW-1239, DG 1B SW Return Hdr SFCW Emerg M/U Conn, or 1SW-269, DG 1A SW Return Hdr SFCW Emerg M/U Backup Conn and	Locates and OPENS 1SW-1239		
CUE	1SW-1239 is **OPEN**				

JPM STEP	STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
*12	8.7.2.4.b	1SF-76, SFPCCS Emerg Makeup Conn Vent Vlv	Locates and OPENS 1SF-76		
CUE	1SF-76 is OPEN				
13	N/A		Informs Control Room that makeup to Fuel Pools A & B has begun		
CUE	Control Room acknowledges that Fuel Pools A and B are being filled. TASK COMPLETE				

STOP TIME: _____

CANDIDATE CUE SHEET

(TO BE RETURNED TO EXAMINER UPON COMPLETION OF **TASK)**

INITIAL CONDITIONS:

The **plant** is in mode ***6*** with the core offloaded. A leak has developed in the **A** and B Fuel Pools. The only source of makeup water available to the fuel pool is from "B" Emergency Service Water Header.

INITIATING CUE(S):

The SCO has directed you to fill the **A** and B Fuel Pools from Emergency Service Water Header "B" using OP-116, Section **8.7**