ENERGY NORTHWEST

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February 12, 2013
GO2-13-023

Stephen Garchow
U. S. Nuclear Regulatory Commission
Region IV
1600 East Lamar Boulevard
Arlington, TX 76011-4511

Subject: **COLUMBIA GENERATING STATION, DOCKET NO. 50-397**
INITIAL LICENSE EXAMINATION DOCUMENTATION

Dear Mr. Garchow:

Attached is the written examination performance analysis documentation as delineated in ES-501, C.1 for the SRO and RO examinations that were given at Columbia Generating Station on February 1, 2013, and a revised copy of Simulator Job Performance Measure (JPM) g administered on February 6, 2013.

Specifically, the following materials are enclosed as attachments:

1) Written exam performance analysis for questions missed by half or more of the applicants.

2) Written exam performance analysis for the applicant scoring within 2% of 80% overall.

3) Written exam performance analysis for the applicant scoring within 4% of 70% on the SRO-only portion of the exam and within 2% of 80% overall.

4) Documentation to support a change to the SRO-only written examination answer key for question SRO-86.

5) A revision to Simulator JPM g providing clarification to JPM steps 5, 6, 12, and 13.

The Examination Security Agreement, ES-201-3, will be faxed to you as soon as all post examination signatures are complete.

No new regulatory commitments are made in this letter.

If you require additional information, please contact K. P. Smart, Manager, Operations Training, at (509) 377-8327.

Respectfully,

W. G. Hettel
Vice President, Operations

Attachment: Exam Deficiency Analysis

cc: w/o attachments
NRC Region IV Administrator
NRC NRR Project Manager
NRC Senior Resident Inspector/988C
AJ Rapacz – BPA/1399

Attachment 1

2013 NRC Written Examination Performance Analysis

Category: Questions missed by half or more of the applicants.

Question	Performance Data	Question Issue?	Training Issue or knowledge deficiency?	Comments
RO-24	A: 2 **B: 5** C: 5 D: 1	No.	Yes. Not specifically trained.	No specific learning objective for KA 295013 AA2.02. TREQ 13-0034 generated to address the issue. Knowledge deficiency will be corrected in gap training.
RO-32	A: 1 B: 7 **C: 5** D: 0	No.	Yes. Knowledge deficiency.	Covered in initial training program. Knowledge deficiency will be corrected in gap training.
RO-45	**A: 6** B: 1 C: 5 D: 1	No.	Yes. Knowledge deficiency.	Covered in initial training program. Knowledge deficiency will be corrected in gap training.
SRO-78	A: 1 B: 4 **C: 3** D: 0	No.	Yes. Knowledge deficiency.	Covered in initial training program. Knowledge deficiency will be corrected in gap training.

SRO-80	A: 1 **B: 4** C: 0 D: 3	No.	Yes. General misunderstanding.	Covered in initial training program. Corrected misunderstanding during the exam review.
SRO-86	A: 3 **B: 2** C: 0 D: 3	Yes. Keyed answer (B) is incorrect.	Yes. Knowledge deficiency.	See Attachment 4 for an explanation of the question issue. Knowledge deficiency will be corrected in gap training.
SRO-89	A: 0 **B: 4** C: 4 D: 0	No.	Yes. Knowledge deficiency.	Covered in initial training program. Knowledge deficiency will be corrected in gap training.

Attachment 2

2013 NRC Written Examination Performance Analysis

Category: Applicant (Docket 55-42481) scoring within 2% of 80% overall.

Question	Performance Data	Question Issue?	Training Issue or knowledge deficiency?	Comments
RO-2	A: 2 B: 0 C: 0 **D: 11**	No.	Yes. Selected A. Knowledge deficiency.	Covered in initial training program. Knowledge deficiency will be corrected in gap training.
RO-5	A: 1 **B: 9** C: 3 D: 0	No.	Yes. Selected C. Knowledge deficiency.	Covered in initial training program. Knowledge deficiency will be corrected in gap training.
RO-6	A: 4 **B: 9** C: 0 D: 0	No.	Yes. Selected A. Knowledge deficiency.	Covered in initial training program. Knowledge deficiency will be corrected in gap training.
RO-23	A: 1 **B: 11** C: 0 D: 1	No.	Yes. Selected D. Knowledge deficiency.	Covered in initial training program. Knowledge deficiency will be corrected in gap training.

RO-32	A: 1 B: 7 **C: 5** D: 0	No.	Yes. Selected B. Knowledge deficiency.	Covered in initial training program. Knowledge deficiency will be corrected in gap training.
RO-35	A: 3 **B: 10** C: 0 D: 0	No.	Yes. Selected A. Knowledge deficiency.	Covered in initial training program. Knowledge deficiency will be corrected in gap training.
RO-41	A: 0 B: 2 **C: 11** D: 0	No.	Yes. Selected B. Knowledge deficiency.	Covered in initial training program. Knowledge deficiency will be corrected in gap training.
RO-45	**A: 6** B: 1 C: 5 D: 1	No.	Yes. Selected C. Knowledge deficiency.	Covered in initial training program. Knowledge deficiency will be corrected in gap training.
RO-47	A: 1 **B: 12** C: 0 D: 0	No.	Yes. Selected A. Knowledge deficiency.	Covered in initial training program. Knowledge deficiency will be corrected in gap training.
RO-52	A: 4 B: 0 **C: 8** D: 1	No.	Yes. Selected A. Knowledge deficiency.	Covered in initial training program. Knowledge deficiency will be corrected in gap training.

RO-58	**A: 9** B: 1 C: 1 D: 2	No.	Yes. Selected D. Knowledge deficiency.	Covered in initial training program. Knowledge deficiency will be corrected in gap training.
RO-65	A: 3 **B: 10** C: 0 D: 0	No.	Yes. Selected A. Knowledge deficiency.	Covered in initial training program. Knowledge deficiency will be corrected in gap training.
RO-66	A: 0 B: 1 **C: 11** D: 1	No.	Yes. Selected B. Knowledge deficiency.	Covered in initial training program. Knowledge deficiency will be corrected in gap training.
RO-75	A: 0 B: 1 **C: 9** D: 3	No.	Yes. Selected D. Knowledge deficiency.	Covered in initial training program. Knowledge deficiency will be corrected in gap training.

Attachment 3

2013 NRC Written Examination Performance Analysis

Category: Applicant (Docket 55-42469) scoring within 4% of 70% on the SRO-only portion of the exam and within 2% of 80% overall.

Question	Performance Data	Question Issue?	Training Issue or knowledge deficiency?	Comments
RO-2	A: 2 B: 0 C: 0 **D: 11**	No.	Yes. Selected A. Knowledge deficiency.	Covered in initial training program. Knowledge deficiency will be corrected in gap training.
RO-9	**A: 9** B: 0 C: 2 D: 3	No.	Yes. Selected D. Knowledge deficiency.	Covered in initial training program. Knowledge deficiency will be corrected in gap training.
RO-17	**A: 9** B: 0 C: 2 D: 2	No.	Yes. Selected C. Knowledge deficiency.	Covered in initial training program. Knowledge deficiency will be corrected in gap training.
RO-32	A: 1 B: 7 **C: 5** D: 0	No.	Yes. Selected B. Knowledge deficiency.	Covered in initial training program. Knowledge deficiency will be corrected in gap training.

RO-37	**A: 9** B: 1 C: 0 D: 3	No.	Yes. Selected D. Knowledge deficiency.	Covered in initial training program. Knowledge deficiency will be corrected in gap training.
RO-39	A: 1 B: 0 C: 1 **D: 11**	No.	Yes. Selected C. Knowledge deficiency.	Covered in initial training program. Knowledge deficiency will be corrected in gap training.
RO-45	**A: 6** B: 1 C: 5 D: 1	No.	Yes. Selected C. Knowledge deficiency.	Covered in initial training program. Knowledge deficiency will be corrected in gap training.
RO-50	A: 1 B: 4 **C: 8** D: 0	No.	Yes. Selected B. Knowledge deficiency.	Covered in initial training program. Knowledge deficiency will be corrected in gap training.
RO-52	A: 4 B: 0 **C: 8** D: 1	No.	Yes. Selected D. Knowledge deficiency.	Covered in initial training program. Knowledge deficiency will be corrected in gap training.
RO-58	**A: 9** B: 1 C: 1 D: 2	No.	Yes. Selected B. Knowledge deficiency.	Covered in initial training program. Knowledge deficiency will be corrected in gap training.

RO-61	A: 2 **B: 9** C: 1 D: 1	No.	Yes. Selected C. Knowledge deficiency.	Covered in initial training program. Knowledge deficiency will be corrected in gap training.
RO-62	A: 1 B: 3 C: 2 **D: 7**	No.	Yes. Selected B. Knowledge deficiency.	Covered in initial training program. Knowledge deficiency will be corrected in gap training.
SRO-78	A: 1 B: 4 **C: 3** D: 0	No.	Yes. Selected B. Knowledge deficiency.	Covered in initial training program. Knowledge deficiency will be corrected in gap training.
SRO-82	A: 0 B: 1 **C: 7** D: 0	No.	Yes. Selected B. Knowledge deficiency.	Covered in initial training program. Knowledge deficiency will be corrected in gap training.
SRO-83	A: 0 B: 1 C: 1 **D: 6**	No.	Yes. Selected C. Knowledge deficiency.	Covered in initial training program. Knowledge deficiency will be corrected in gap training.
SRO-86	A: 3 **B: 2** C: 0 D: 3	Yes. Keyed answer (B) is incorrect.	No. Selected A, which is the correct answer.	See Attachment 4 for an explanation of the question issue.

SRO-88	A: 1 B: 1 **C: 6** D: 0	No.	Yes. Selected A. Knowledge deficiency.	Covered in initial training program. Knowledge deficiency will be corrected in gap training.
SRO-89	A: 0 **B: 4** C: 4 D: 0	No.	Yes. Selected C. Knowledge deficiency.	Covered in initial training program. Knowledge deficiency will be corrected in gap training.
SRO-96	**A: 6** B: 2 C: 0 D: 0	No.	Yes. Selected B. Knowledge deficiency.	Covered in initial training program. Knowledge deficiency will be corrected in gap training.
SRO-97	A: 0 B: 0 C: 1 **D: 7**	No.	Yes. Selected C. Knowledge deficiency.	Covered in initial training program. Knowledge deficiency will be corrected in gap training.

Attachment 4

2013 NRC Exam Proposed Answer Key Change

Question SRO-86

Columbia is operating at 100% power with a calibration of SGT-SUM-1B2 (SGT Fan 1B2 Summer Circuit) in progress. Secondary Containment differential pressure is being maintained by Reactor Building HVAC with ROA-FN-1B and REA-FN-1B in service. Multiple unexpected alarms are received in the Control Room, and the following conditions are reported:

- ROA-FN-1B and REA-FN-1B are OFF
- ROA-V-1 and ROA-V-2 (RB Supply Valves) are OPEN
- REA-V-1 and REA-V-2 (RB Exhaust Valves) are OPEN
- The "SEC PRESS ΔP HIGH" annunciator on P602 is in alarm
- Multiple Board R alarms have been received

The CRS should direct the performance of _____ to recover from the trip.

A. SOP-SGT-START-DIV/1-QC

B. SOP-HVAC/RB-RESTART-QC

C. SOP-SGT-START Section 5.2

D. ABN-HVAC, HVAC TROUBLE

The keyed answer is B. The correct answer is A.

A: The stem states that a calibration of SGT-SUM-1B2 is in progress when the running Reactor Building ventilation fans trip, but does not provide enough information to definitively determine if the calibration caused the trip. Also, the stem does not provide any information to determine if the cause of the trip has been corrected. Without this information, the plant response to an attempt to restart Reactor Building ventilation is unknown, and the fans should be considered unavailable.

The Conservative Decision Making Standard per OI-09, Operations Standards and Expectations, Section 4.2.2 is:

"Each individual should not proceed with a task unless he/she understands the task and is aware of the expected results. The individual should make a conservative decision when faced with a condition that is either unexpected or unsafe. If any condition arises that is either unexpected or unsafe, the component/plant should be placed in a safe condition, and the appropriate Supervisor or Manager should be contacted for a resolution."

Per this standard, Reactor Building ventilation should remain off until an investigation into the status of the system is completed.

The stem of the question also states that the SEC PRESS ΔP HIGH annunciator is in alarm. This annunciator alarms at GE 0.0" of water, which is the EOP entry point for PPM 5.3.1, Secondary Containment. The purpose of SOP-SGT-START-DIV/1-QC is "To provide instructions for starting Standby Gas Treatment System with a Secondary Containment EOP Entry and there is a sustained loss of normal Reactor Building HVAC." With the Reactor Building ventilation fans unavailable, a sustained loss of Reactor Building ventilation is in progress.

With Secondary Containment pressure GE 0.0" of water, LCO 3.6.4.1, Secondary Containment, is not met. Secondary Containment must be restored to operable within four (4) hours.

With Reactor Building ventilation unavailable, Secondary Containment inoperable, and the Secondary Containment EOP entered due to pressure, the CRS should direct the performance of SOP-SGT-START-DIV/1-QC. This is the correct answer.

B: According to the purpose section of SOP-HVAC/RB-RESTART-QC, the procedure "Provides instructions for restarting Reactor Building ventilation to reestablish Secondary Containment operability following a brief loss when the cause has been corrected." The cause of the fan trips is not definitively known, and the stem does not provide any information as to whether the cause has been corrected. Restarting Reactor Building ventilation would be contrary to the OI-09 standard. This distractor is incorrect.

C: SOP-SGT-START Section 5.2 is used for the routine starting of Standby Gas Treatment. With Secondary Containment inoperable and the plant operating in the EOP's, Standby Gas Treatment should be started using SOP-SGT-START-DIV/1-QC. This distractor is incorrect.

D: While an entry into ABN-HVAC, HVAC TROUBLE, exists due to the trip of Reactor Building Ventilation, this is not the procedure the CRS will direct to recover from the fan trips. The start of Standby Gas Treatment per SOP-SGT-START-DIV/1-QC will be directed. This distractor is incorrect.

ENERGY NORTHWEST

INSTRUCTIONAL COVER SHEET

PROGRAM TITLE	LICENSED OPERATOR TRAINING
COURSE TITLE	JOB PERFORMANCE MEASURE
LESSON TITLE	ALIGN SERVICE WATER TO THE FUEL POOL HEAT EXCHANGERS (Sim
LESSON LENGTH	.5 HRS

INSTRUCTIONAL MATERIALS INCLUDED

LESSON PLAN PQD CODE		Rev. No.	
SIMULATOR GUIDE PQD CODE		Rev. No.	
JPM PQD CODE	LO001756	Rev. No.	0
EXAM PQD CODE		Rev. No.	

DIVISION TITLE	Nuclear Training		
DEPARTMENT	Operations Training		
PREPARED BY	Ron Hayden	DATE	12/12/12
REVISED BY		DATE	

TECHNICAL REVIEW BY		DATE	
INSTRUCTIONAL REVIEW BY		DATE	
APPROVED BY		DATE	
	Operations Training Manager		

Verify materials current IAW SWP-TQS-01 prior to use

MINOR REVISION RECORD

Minor Rev Number	Description of Revision	Affected Pages	Entered By	Effective Date	Manager Approval

JPM SETUP

Simulator ICs; Malfunctions; Triggers; Overrides:

None

Special Setup Instructions:

N/A

JPM Instructions:

Verify Current Procedure against JPM. If any steps have changed, the JPM should be revised.

Tools/Equipment: None

Safety Items: None

Task Number: RO-0304

Validation Time: 8 Minutes

Alternate Path: No

Time Critical: No

PPM Reference: SOP-FPC-OPS Section 5.6 Rev. 5

Location: Control Room

NUREG 1123 Ref: 233000 A2.08 (2.9 / 3.1)

Performance Method: Simulate

Task Standard: Service Water has been aligned to FPC-HX-1A and to FPC-HX-1B.

JPM CHECKLIST

INITIAL CONDITIONS:	Columbia was operating in Mode 1 when a complete loss of RCC occurred. A reactor scram was inserted and efforts are underway to restore RCC cooling. SW-P-1A and SW-P-1B are running. Fuel Pool temperatures are rising. Free release of RCC heat exchanger water to the Service Water spray ponds has been approved. OSP-SW-M101 and OSP-SW-M102 have been referenced for component flow requirements. OPS2 has been briefed and is on station.
INITIATING CUE:	The Control Room Supervisor has directed you to align Service Water to both Fuel Pool Cooling Heat Exchangers per SOP-FPC-OPS Section 5.6. Inform the CRS when Service Water has been aligned to both Fuel Pool Cooling heat exchangers. The performance of this JPM will be simulated. Control manipulations will not be performed.

*** Items are Critical Steps**

Time	Step	Element	Standard	Cue	Sat/Unsat
NOTE: Standby Service Water to FPC-HX-1A(B) is normally used if RCC flow is lost and restoration is not anticipated prior to 125° F in the Fuel Pool, as indicated on FPC-TI-7/8 at H13-P626 (FPC-1), or for evolutions that require the Fuel Pool to be cooled below the capabilities of the RCC system. Examples: Loading spent fuel into an ISFSI MPC or to raise stay time for divers. NOTE: If Standby Service Water is aligned to the FPC heat exchanger, it is acceptable to operate below the minimum flow specified in OSP-SW-M101(M102) as long as the minimum operability value specified in PPM 8.4.81 is maintained. NOTE: If RCC is lined up to SSW for GE 48 hours, then it is recommended RCC-RV-34A(B) (FPC-HX-1A(B) Shell Side Relief Valve) be scheduled for replacement and test as soon as possible after swapping back to RCC. This is due to the potential for loose debris in SSW causing RCC-RV-34A(B) to lift and leak.				
	1	Step 5.6.1 Verify free release of RCC Heat Exchanger water to the Service Water Spray Ponds.	Recognizes that discharge of RCC heat exchanger water into the Service Water spray ponds has been approved.		S / U
	2	Step 5.6.2 If desired, then lineup Standby Service Water Cooling to FPC-HX-1A as follows:	Performs this step.		S / U

*** Items are Critical Steps**

Time	Step	Element	Standard	Cue	Sat/Unsat
	3	Step 5.6.2a Refer to OSP-SW-M101 for Standby Service Water Loop A for component flow requirements.	Given as complete in the Initial Conditions – does not perform.	If OSP-SW-M101 is referenced, refer candidate to Initial Conditions.	S / U
	4	Step 5.6.2b Verify SW-P-1A is running.	Given in Initial Conditions as running.	If candidate approaches front panel refer candidate to Initial Conditions.	S / U
Note: The candidate must perform at least one of the following two steps					
	5	Step 5.6.2c If RCC cooling to FPC-HX-1B is not required, then close the following: • RCC-V-129 (Fuel Pool HX-A/B RCC Cooling Inlet) • RCC-V-130 (Fuel Pool HX-A/B RCC Cooling Outlet) • RCC-V-131 (Fuel Pool HX-A/B RCC Cooling Outlet)	Simulates turning the control switch for the following valves to close and verifies Green light on and Red light off for: • RCC-V-129 • RCC-V-130 • RCC-V-131	As each control switch is turned: The switch is in the closed position. The Green light is on and the Red light is off.	S / U * (Note: Either this step or the next step is critical. At least one of these steps must be performed)

*** Items are Critical Steps**

Time	Step	Element	Standard	Cue	Sat/Unsat
	6	Step 5.6.2d If RCC cooling to FPC-HX-1B is required, or SW is to be aligned to both FPC-HX-1A and FPC-HX-1B, then close the following: • RCC-V-9A (FPC-HX-1A RCC Cooling Inlet) (FPC HX Room) • RCC-V-10A (FPC-HX-1A RCC Cooling Outlet) (FPC HX Room)	Verbalizes to direct OPS2 to perform Step 5.6.2d of SOP-FPC-OPS to close RCC-V-9A and RCC-V-10A.	If candidate approaches front panel to use the radio, direct candidate to simulate communications. Roleplay and then as OPS2 report step 5.6.2d is complete as RCC-V-9A and RCC-V-10A are closed.	S / U * (Note: If RCC-V-129, V-130 and V-131were previously closed, this is not a critical step – refer to above step).
NOTE: SW-V-187A and SW-V-188A keylock switch spring returns to NORMAL from OPEN, and maintains in CLOSE.					
A DISCUSSION WHERE THE KEYS ARE LOCATED IS SUFFICIENT (KEYS ARE LOCATED IN CABINETS NEXT TO TE SHIFT MANAGERS OFFICE DOOR). WHEN CANDIDATE CORRECTLY STATES KEY LOCATION CUE THAT THE KEYS HAVE BEEN OBTAINED.					
	7	Step 5.6.2e Open SW-V-187A (FPC-HX-1A Backup Cooling SW-A Inlet) (H13-P626).	Simulates placing key 219 in the control switch and turning the control switch for SW-V-187A clockwise to open. Verifies Red light on and Green light off.	The control switch was placed in Open and spring returned to Norm. The Red light is on and the Green light is off.	S / U *

*** Items are Critical Steps**

Time	Step	Element	Standard	Cue	Sat/Unsat
	8	Step 5.6.2f Open SW-V-188A (FPC-HX-1A Backup Cooling SW-A Outlet) (H13-P626).	Simulates placing key 221 in the control switch and turning the control switch for SW-V-188A clockwise to open. Verifies Red light on and Green light off.	The control switch was placed in Open and spring returned to Norm. The Red light is on and the Green light is off.	S / U *
	9	Step 5.6.3 If desired, then lineup Standby Service Water Cooling to FPC-HX-1B as follows:	Performs this step.		S / U
	10	Step 5.6.3a Refer to OSP-SW-M102 for Standby Service Water Loop B for component flow requirements.	Given as complete in the Initial Conditions – does not perform.	If OSP-SW-M102 is referenced, refer candidate to Initial Conditions.	S / U
	11	Step 5.6.3b Verify SW-P-1B is running.	Given in Initial Conditions as running.	If candidate approaches front panel refer candidate to Initial Conditions.	S / U
	12	Step 5.6.3c If RCC cooling to FPC-HX-1A is not required, then close the following: • RCC-V-129 (Fuel Pool HX-A/B RCC Cooling Inlet) • RCC-V-130 (Fuel Pool HX-A/B RCC Cooling Outlet) • RCC-V-131 (Fuel Pool HX-A/B RCC Cooling Outlet)	Recognizes that these valves were closed in a previous step – does not perform. (If this step was not previously performed it may be performed at this point).	If candidate performs this step - the Green light is on and the Red light is off for RCC-V-129, RCC-V-130 and RCC-V-131.	S / U (Refer to note in JPM step 5)

*** Items are Critical Steps**

Time	Step	Element	Standard	Cue	Sat/Unsat
	13	Step 5.6.3d If RCC cooling to FPC-HX-1A is required, or SW is to be aligned to both FPC-HX-1A and FPC-HX-1B, then close the following: • RCC-V-9B (FPC-HX-1B RCC Cooling Inlet) (FPC HX Room) • RCC-V-10B (FPC-HX-1B RCC Cooling Outlet) (FPC HX Room)	Verbalizes to direct OPS2 to perform Step 5.6.3d of SOP-FPC-OPS to close RCC-V-9B and RCC-V-10B.	If candidate approaches front panel to use the radio, direct candidate to simulate communications. Roleplay and then as OPS2 report step 5.6.3d is complete as RCC-V-9B and RCC-V-10B are closed.	S / U (Note: If RCC-V-129, V-130 and V-131 were not previously closed this is a critical step).
NOTE: SW-V-187B and SW-V-188B keylock switch spring returns to NORMAL from OPEN, and maintains in CLOSE.					
	14	Step 5.6.3e Open SW-V-187B (FPC-HX-1B Backup Cooling SW-B Inlet) (H13-P626).	Simulates placing key 220 in the control switch and turning the control switch for SW-V-187B clockwise to open. Verifies Red light on and Green light off.	The control switch was placed in Open and spring returned to Norm. The Red light is on and the Green light is off.	S / U *
	15	Step 5.6.3f Open SW-V-188B (FPC-HX-1A Backup Cooling SW-B Outlet) (H13-P626).	Simulates placing key 222 in the control switch and turning the control switch for SW-V-188B clockwise to open. Verifies Red light on and Green light off.	The control switch was placed in Open and spring returned to Norm. The Red light is on and the Green light is off.	S / U *
Termination Criteria: Student informs CRS that Service Water has been aligned to both Fuel Pool Cooling Heat Exchangers.					
Transfer the following to the "Results of JPM" page: Any Unsat step - indicate if step was a Critical Step; JPM completion time.					

RESULTS OF JPM
ALIGN SERVICE WATER TO THE
FUEL POOL COOLING HEAT EXCHANGERS

Examinee (Print): _____

Evaluator (Print): _____

Task Standard: Service Water has been aligned to FPC-HX-1A and to FPC-HX-1B.

Overall Evaluation	JPM Completion Time
SAT / UNSAT (Circle One)	**Minutes**

COMMENTS:

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Evaluator's Signature: _____ **Date:** _____

STUDENT JPM INFORMATION CARD

Initial Conditions:

Columbia was operating in Mode 1 when a complete loss of RCC occurred.

A reactor scram was inserted and efforts are underway to restore RCC cooling.

SW-P-1A and SW-P-1B are running.

Fuel Pool temperatures are rising.

Free release of RCC heat exchanger water to the Service Water spray ponds has been approved.

OSP-SW-M101 and OSP-SW-M102 have been referenced for component flow requirements.

OPS2 has been briefed and is on station.

Initiating Cue:

The Control Room Supervisor has directed you to align Service Water to both Fuel Pool Cooling Heat Exchangers per SOP-FPC-OPS Section 5.6.

Inform the CRS when Service Water has been aligned to both Fuel Pool Cooling heat exchangers.

The performance of this JPM will be simulated.

Control manipulations will not be performed.