

Facility: Oyster Creek Task No.: COO00030Task Title: Review a Shift Turnover ChecklistJob Performance Measure No.: NRC JPM ADMIN SRO1 (SRO)K/A Reference: Generic 2.1.3 (SRO 3.4)

Examinee: \_\_\_\_\_ Examiner: \_\_\_\_\_

Facility Evaluator: \_\_\_\_\_ Date: \_\_\_\_\_

Method of Testing:

Simulated Performance \_\_\_\_\_ Actual Performance XClassroom X Simulator \_\_\_\_\_ Plant \_\_\_\_\_*Read to the Examinee:*

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

## Initial Conditions:

1. The plant is at rated power with all Recirculation Pumps on.
2. You are the oncoming Unit Supervisor after being off for the last 12 hours.
3. Your last shift was completed at 2400 on April 18, 2008.
4. The current date/time is April 19, 2008 at 1200.

Task Standard: The Candidate has reviewed the turnover checklist and noted the discrepancies and any associated actions.

Required Materials: None.

## General References:

1. OP-OC-100-1002, Main Control Room Turnover Checklist (Operating Mode), revision 5.
2. Technical Specifications 3.7, Auxiliary Electrical Power.
3. Procedure OP-OC-108-104-1001, Guidance for Limiting and Administrative Conditions for Operations, revision 0.
4. Procedure 324, Thermal Dilution Pumps, revision 69.

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Initiating Cue: As the oncoming Unit Supervisor, review the completed Main Control Room Turnover Checklist (Operating Mode) and note any discrepancies and/or any required actions. Provide any responses on the handout.

Time Critical Task: No.

Validation Time: 22 minutes

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Performance Information

*Denote critical steps with a check mark ✓*

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Performance Step: 1

Procedure Step: Provides repeat back of initiating cue.

**JPM Start Time:** \_\_\_\_\_

**Standard:** Provides repeat back of initiating cue. *Evaluator acknowledges the repeat back. Provide the completed Turnover Sheet.*

Comment: \_\_\_\_\_  
\_\_\_\_\_

**SAT/UNSAT**

**Note:** The following steps may be performed in any order.

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✓

Performance Step: 2

Procedure Step: Reviews the Turnover Checklist.

**Standard:** Reviews the Turnover Checklist and notes the following:

- The TORUS/DW VENT & PURGE ISOL VLVS HI RAD BYP CHAN 2 switch position is not annotated. (The switch should be in NORMAL.)

Comment: \_\_\_\_\_  
\_\_\_\_\_

**SAT/UNSAT**

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Performance Information

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Performance Step: 3

Procedure Step: Reviews the Turnover Checklist.

**Standard:**

Reviews the Turnover Checklist and notes the following:

- Technical Specification 3.7.C.2 states that if one diesel generator becomes inoperable during power operation, repairs shall be initiated immediately and the other diesel shall be operated at least one hour every 24 hours at greater than 80% rated load until repairs are completed. Procedure OP-OC-108-104-1001, Guidance for Limiting and Administrative Conditions for Operations, states that EDG 2 shall be satisfactorily tested by 2000 on April 19, 2008. This is 24 hours from when EGD 1 was declared inoperable – not 24 hours from when EDG 1 was tagged out for repair. To comply with Technical Specifications, EDG 2 needs to be tested (636.4.013, EDG 2 Load Test) by 2000 on April 19, 2008.

Comment:

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SAT/UNSAT

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Performance Information

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✓

Performance Step: 4

Procedure Step: Reviews the Turnover Checklist.

**Standard:**

Reviews the Reactor Core State Parameters printout and notes the following:

- IAW Core Thermal Limits Verification of Procedure 202.1, Power Operation, the thermal limits shall be reviewed and compared against Column C of Attachment 202.1-5. This comparison shows that MAPLHGR (currently at 100.01) is above the limiting value of 100. The actions from Column C include the following:
  - Follow the requirements of TS 3.10 as applicable;
    - During POWER OPERATION the maximum AVERAGE PLANAR LINEAR HEAT GENERATION RATE (APLHGR) for each fuel type as a function of exposure shall not exceed the limits specified in the CORE OPERATING LIMITS REPORT (COLR)
    - If any time during POWER OPERATION it is determined by normal surveillance that the limiting value for APLHGR is being exceeded, action shall be initiated to restore operation to within the prescribed limits. If the APLHGR is not returned to within the prescribed limits within two hours, action shall be initiated to bring the reactor to the COLD SHUTDOWN CONDITION within 36 hours. During this period surveillance and corresponding action shall continue until reactor operation is within the prescribed limits at which time POWER OPERATION may be continued.
  - Notify Manager Reactor Engineering and Director Operations.

Comment: \_\_\_\_\_  
\_\_\_\_\_

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SAT/UNSAT

JPM Stop Time: \_\_\_\_\_

## Validation of Completion

JPM Number: NRC JPM ADMIN SRO1

Examinee's Name: \_\_\_\_\_

Examiner's Name: \_\_\_\_\_

Date Performed: \_\_\_\_\_

Facility Evaluator: \_\_\_\_\_

Number of Attempts: \_\_\_\_\_

Time to Complete: \_\_\_\_\_

Question:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Response:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Result: Satisfactory/Unsatisfactory

Examiner's Signature and Date: \_\_\_\_\_

Simulator Setup

1. None.
2. Include a cope of Core State Parameters Admin SRO1 along with the Student Handout and the Turnover sheet to the candidate at the start of this JPM.

STUDENT HANDOUTInitial Conditions:

1. The plant is at rated power with all Recirculation Pumps on.
2. You are the oncoming Unit Supervisor after being off for the last 12 hours.
3. Your last shift was completed at 2400 on April 18, 2008.
4. The current date/time is April 19, 2008 at 1200.

Task Cue:

As the oncoming Unit Supervisor, review the completed Main Control Room Turnover Checklist (Operating Mode) and note any discrepancies and/or any required actions. Provide any responses on the handout.



# **MAIN CONTROL ROOM TURNOVER CHECKLIST (OPERATING MODE)**

Date	4-19-08	Shift	0000 - 1200				
<b>Plant Status</b>							
<b>P O W E R</b>	Core	1927	MWth	<b>F L O W</b>	Recirc	15.0	XE4GPM
	Electric	654	Mwe		Feedwater	7.2	XE6 lbm/hr
	Plant Risk level	Yellow	Color		Steam	7.2	XE6 lbm/hr
	Condenser vac	28	"Hg		Intake temp.	51	degrees F
<b>Operating Status</b>							
ORAM Sentinel Risk Color		Yellow	Basis	EDG 1 Inoperable			
Steady state power (circle)		<input checked="" type="radio"/> Y	N	If N explain			
Xenon (Check one)		<input type="radio"/> Rising	<input type="radio"/> Falling	<input type="radio"/> Stable	<input checked="" type="radio"/> X		
Load limited by		None					
Surveillance(s) in progress		Reactor Hi/Lo Level Bistable Test and Calibration, 619.3.113. Stack RAGEMS Sample and Effluent Flow – Functional Test, 621.3.024.					
Activities in progress		Main Generator Exciter Brush Inspection. Fire Hose Station, Hose House and Fire Hydrant Inspection, 645.6.003, following a fire drill earlier in the shift. Nitrogen is being delivered.					
<b>Safety System Status</b>							
Identify system or components that are in a degraded mode of operation permitted by the Technical Specifications. For each system, compare the length of time it is degraded with the Technical Specification Action Statement. Specify the frequency of redundant system verification or testing and the date/time of the last test							
APRM 1 is in BYPASS due to failure of the APRM Surveillance Test – Front Panel Check (620.4.002). All other APRMs operable.							
EDG 1 tagged out of service at 2300 on 4/18/08. 7-day LCO. EDG 2 testing every 24 hours.							
<b>Compensatory Comments</b>							
List any compensatory actions in effect as a result of Procedure CC-AA-112 (Temp Mod), Procedure WC-AA-101 (On-Line Maintenance), out of service plant equipment or components, or as directed by the SM or OS.							
EDG 2 and associated systems are protected IAW Procedure 341 due to EDG 1 inoperable.							
Recording Offgas Radiation Monitor levels every hour due to AOG trip. No adverse trends noted.							
<b>Turnover Comments</b>							
EDG 1 declared inoperable at 2000 on 4/18/08, and tagged out for repair at 2300 on 4/18/08. Electrical Maintenance reports a ground in the control system and is continuing to investigate. There is currently no estimate on the return-to-service time. IAW Technical Specifications, EDG 2 must complete a satisfactory surveillance by 2300 on 4/19/08. (Annunciators T4b, T5b)							
AOG tripped 1600 4/18/08 and remains out of service. All required actions completed. (Annunciators 10F3b, 10XF3d, 10XF4d).							

<b>Off Going Shift</b>	Reactor Operators	<b>On Coming Shift *</b>	Reactor Operators *
	<i>Bryan Eagan</i>		<i>C. Spink</i>
	<i>Bryon Block</i>		<i>N. Miller</i>
	Unit Supervisor		Unit Supervisor *
	<i>Josh Sisak</i>		

\* Signature acknowledges all qualifications to stand watch are current and any changes in medical status have been reported IAW OP-AA-105-101.

**MAIN CONTROL ROOM TURNOVER CHECKLIST  
(CONTINUED)**

**Control Panel Switch Check**

**Panel 1F/2F**

EMRVs not in auto (list any)	All in AUTO
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**Panel 4F**

SRM/IRM/APRM bypass (list any)	APRM 1			
LPRM to APRM bypass (list any)				
RWM bypassed (Check)	<table border="1"> <tr> <td>X</td> <td>Yes</td> <td>No</td> </tr> </table>	X	Yes	No
X	Yes	No		

**Panel 8F/9F**

EDG1 Status		Available	X	Inoperable	Mode Switch in peaking	X	Yes
EDG2 Status	X	Available		Inoperable	Mode Switch in peaking	X	Yes
S1A Breaker up light lit	X	Yes	No	S1B Breaker up light lit	X	Yes	No

**Panel 11F**

V-24-29 isolation signal bypass switch in normal	X	Yes	No
V-24-30 isolation signal bypass switch in normal	X	Yes	No
TORUS/DW VENT & PURGE ISOL VLVS HI RAD BYP CHAN 1 in normal	X	Yes	No
TORUS/DW VENT & PURGE ISOL VLVS HI RAD BYP CHAN 2 in normal		Yes	No

**Panel 11R**

SBGTS select switch		system 1	X	system 2
EF 1-8 control switch in auto	X	Yes		No
EF 1-9 control switch in auto	X	Yes		No

**Panel 13R**

Pond Pump select switch	X	Yes	No
One pump in auto, one pump in manual			

**Panel 12XR**

CNTMT VENT AND PURGE ISOLATION BYPASS in normal	X	Yes	No
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**Panel 11XR**

Main Generator Digital Protective Relay System (DPRS A and B) operating with no abnormal indications	X	Yes	No
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**Panels 12XR, 13R, 14R (rear of panels)**

Confirm fans on rear of panels operating	X	Yes	No
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**Panels 1R,2R,3R,4R,5R**

Confirm Drawers are pushed in and secured	X	Yes	No
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**Panel 10XF**

AOG in service		Yes	X	No
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**General Turnover Checks**

Core Maneuvering Daily Instruction Sheet, Attachment 1001.22-3 is current and reflects plant operating conditions.	X	Yes
Control room panel walkdown performed near end of shift.	X	Yes
Reviewed reasons for annunciated alarms with all operators	X	Yes
Control room panel walkdown performed with oncoming shift.	X	Yes
Performed light test on alarm windows.	X	Yes

# Control Room Alarm Sheet

Page 1

Shift 0000 - 1200

Date 4/19/08

	A	B	C	D	E	F	G	H
1								
2								
3								
4								
5								
6								
7								
8								

1F/2F-"B"

	A	B	C	D	E	F	G	H
1								
2								
3								
4								
5								
6								
7								
8								

1F/2F-"C"

	A	B	C	D	E	F
1						
2						
3						
4						
5						
6						
7						
8						

3F-"D"

	A	B	C	D	E	F
1						
2						
3						
4						
5						
6						
7						
8						

3F-"E"

	A	B	C	D	E	F
1						
2						
3						
4						
5						
6						
7						
8						

3F-"F"

	A	B	C	D	E	F
1						
2						
3						
4						
5						
6						
7						
8						

3F-"G"

	A	B	C	D	E	F
1						
2						
3						
4						
5						
6						
7						
8						

5F/6F-"H"

	A	B	C	D	E	F
1						
2						
3						
4						
5						
6						
7						
8						

5F/6F-"J"

	A	B	C	D	E	F
1						
2						
3						
4						
5						
6						
7						
8						

5F/6F-"K"

	A	B	C	D	E	F
1						
2						
3						
4						
5						
6						
7						
8						

5F/6F-"L"

	A	B	C	D	E	F
1						
2						
3						
4						
5						
6						
7						
8						

7F-"M"

	A	B	C	D	E	F
1						
2						
3						
4						
5						
6						
7						
8						

7F-"N"

	A	B	C	D	E	F
1						
2						
3						
4						
5						
6						
7						
8						

7F-"P"

	A	B	C	D	E	F
1						
2						
3						
4						
5						
6						
7						
8						

7F-"Q"

	A	B	C	D	E	F
1						
2						
3						
4						
5						
6						
7						
8						

8F/9F-"R"

# Control Room Alarm Sheet

Page2

	A	B	C	D	E	F
1						
2						
3						
4						
5						
6						
7						
8						

8F/9F-  
"S"

	A	B	C	D	E	F
1						
2						
3						
4		X				
5		X				
6						
7						
8						

8F/9F-"T"

	A	B	C	D	E	F
1						
2						
3						
4						
5						
6						
7						
8						

8F/9F-"U"

	A	B	C	D	E	F
1						
2						
3						
4						
5						
6						
7						
8						

9XF

	A	B	C	D	E	F
1						
2						
3				X		
4				X		
5						
6						
7						
8						

10X  
F

	A	B	C	D	E	F	G	H	K	M
1										
2										
3		X								
4										

10F

	1	2	3	4	5	6
1						
2						
3						
4						

12XR-Dilution

	1	2	3	4	5	6
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						

12F

	1	2	3	4	5	6	7	8	9	10
1										
2										
3										

12XR Feed/Cond Pump Temp.

RO \_\_\_\_\_

Remarks

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Reviewed By: \_\_\_\_\_

## This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There is no text or other markings on the paper.

Date:



REACTOR\_CORE\_STA ▾



reactor\_core\_s

PPC-LAN

PLANT MODE

ACTIVE

RUN

## Reactor Core State Parameters

RAMP

HT REM

4/19/08

DATE

CTMT

12:00:00

PPLX Data Link Status

UP

MWE  
591.95 MWAverage APRM  
92.57% POWERMain Steam  
6.35 MLB/HR  
545.85 DEGF1010.48  
PSIGFLLP  
89.97%

Last Model Calculation 19 Apr-08 10:54:10

Thermal  
Limit

% Limit

Location

	X	Y	Z
MCPR	19	18	--
MLHGR	17	18	39
MAPLHGR	19	18	39
FRPD/MFLPD	17	18	39

Feed Water  
6.40 MLB/HR  
278.42 DEGF

MCPR	94.02
MLHGR	91.37
MAPLHGR	100.01
FRPD/MFLPD	1.056

Recirc  
14.36 GPM E4  
55.07 MLB/HR  
522.25 DEGF1781.02  
MWTWater Level  
163.83 INCHES

Case Power	1781.84 MWT
Xenon	97.19 %XE
DXE	-0.01 % XE/HR
K-EFF	0.9972 -----

92.25  
PERCENT



Facility: Oyster Creek Task No.: \_\_\_\_\_Task Title: Plant Personnel Event NotificationJob Performance Measure No.: NRC JPM ADMIN SRO2 (SRO)K/A Reference: Generic 2.1.14 (SRO 3.3)

Examinee: \_\_\_\_\_ Examiner: \_\_\_\_\_

Facility Evaluator: \_\_\_\_\_ Date: \_\_\_\_\_

Method of Testing:

Simulated Performance \_\_\_\_\_ Actual Performance XClassroom X Simulator \_\_\_\_\_ Plant \_\_\_\_\_*Read to the Examinee:*

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

1. A plant startup is in progress.
2. The REACTOR MODE SELECTOR switch is in STARTUP.
3. All IRMs indicate midscale on Range 8.
4. All APRMs indicate 1%.
5. Annunciator 9XF7d, 24 VDC PP-A PWR LOST alarmed 20 minutes ago.
6. Electrical maintenance suspects a short circuit.
7. The current date/time is April 19, 2008 at 1000.
8. A recovery plan has not been established.

Task Standard: The Candidate completes the Shift Manager's Notification Worksheet IAW OP-AA-106-101, Significant Event Reporting, and determines notification is required due to an unexpected ½ scram and entry into a ≤ 72-hour shutdown LCO.

Required Materials: None.

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General References:

1. Technical Specifications. (have available)
2. Procedure OP-AA-106-101, Significant Event Reporting, revision 8. (handout)
3. Procedure RAP-9XF7d, 24 VDC PP-A LOST, revision 0. (handout)
4. Procedure OP-OC-108-104-1001, Guidance for Limiting and Administrative Conditions for Operations, revision 0.
5. EP-AA-1010, Exelon Nuclear Radiological Emergency Plan Annex for Oyster Creek Station, revision 0 (have available)
6. Exelon Reportability Manual

Initiating Cue: Complete Attachment 2, Shift Manager's Notification Worksheet, of OP-AA-106-101, Significant Event Reporting, for receipt of the 24 VDC PP-A PWR LOST annunciator. Determine who the Shift Manager notifies of this event and why. Determining the requirement for a written report and LER will be performed by another Operator.

Time Critical Task: No.

Validation Time: 22 minutes

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Performance Information

*Denote critical steps with a check mark ✓*

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Performance Step: 1

Procedure Step: Provides repeat back of initiating cue.

**JPM Start Time:** \_\_\_\_\_

**Standard:** Provides repeat back of initiating cue. *Evaluator acknowledges the repeat back.*

Comment:

SAT/UNSAT

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Performance Step: 2

Procedure Step: Record date/time of the event on Attachment 2.

**Standard:** Records date/time of the event on Attachment 2 as 4/19/08 1000.

**Note:** Completion of the Attachment may be performed in any order.

Comment:

SAT/UNSAT

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Performance Information

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Performance Step: 3

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Procedure Step: Records current power/mode on Attachment 2.

**Standard:** Records current power/mode on Attachment 2 as 1%, Startup, or midscale on Range 8 of the IRMs, Startup.

**Note:** Only Performance Step 3 or performance Step 4 is critical, with STARTUP mode listed.

Comment:

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**SAT/UNSAT**

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Performance Step: 4

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Procedure Step: Records prior power/mode on Attachment 2.

**Standard:** Records prior power/mode on Attachment 2 as 1%, Startup, or midscale on Range 8 of the IRMs, Startup.

Comment:

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**SAT/UNSAT**

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Performance Information

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Performance Step: 5

Procedure Step: Records description.

**Standard:** Records a short description of the event: receipt of annunciator 24 VDC PP-A LOST, or loss of 24 VDC PP-A, or similar wording. The description may contain the plant impact of ½ scram as well.

Comment:  

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**SAT/UNSAT**

Performance Step: 6

Procedure Step: Determines if the event requires an EP declaration.

**Standard:** Determines that the event does not require an EP declaration.

Comment:  

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**SAT/UNSAT**

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Performance Information

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## Performance Step: 7

Procedure Step: Determines if the event requires reporting to the NRC via ENS or to an outside agency per the Exelon Reportability Reference Manual.

**Standard:** Determines that the event does not require reporting to the NRC via ENS or to an outside agency per the Exelon Reportability Reference Manual.

Comment:

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**SAT/UNSAT**

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## Performance Step: 8

Procedure Step: Determines if an oil discharge into/upon waters or adjoining shoreline.

**Standard:** Determines there is no oil discharge into/upon waters or adjoining shoreline.

Comment:

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**SAT/UNSAT**

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Performance Information

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## Performance Step: 9

Procedure Step: Determines if a leak or discharge of petroleum product or hazardous substance from the warehouse drop tank; or a spill or discharge of hazardous materials in a quantity that constitutes a reportable discharge into or upon surface waters, groundwater, or onto the ground.

**Standard:** Determines there is no leak or discharge of petroleum product or hazardous substance from the warehouse drop tank; or a spill or discharge of hazardous materials in a quantity that constitutes a reportable discharge into or upon surface waters, groundwater, or onto the ground.

Comment:

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SAT/UNSAT

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## Performance Step: 10

Procedure Step: Determines if a release of designated hazardous substances in amounts equal to or in excess of EPA reportable quantity.

**Standard:** Determines no release of designated hazardous substances in amounts equal to or in excess of EPA reportable quantity.

Comment:

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SAT/UNSAT

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Performance Information

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Performance Step: 11

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Procedure Step: Determines if any of the following occurred:  
RCRA Program Exception Report submitted, or Environmental  
Noncompliance endangering health or environment.

**Standard:** Determines none of the following occurred: RCRA Program  
Exception Report submitted, or Environmental Noncompliance  
endangering health or environment.

Comment:

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**SAT/UNSAT**

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Performance Step: 12

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Procedure Step: Determines if the event is threatening health or  
environment or release equal to or in excess of EPA reportable  
quantity.

**Standard:** Determines the event is not threatening health or environment or  
release equal to or in excess of EPA reportable quantity.

Comment:

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**SAT/UNSAT**

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Performance Information

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## Performance Step: 13

Procedure Step: Determines if any of the following occurred: loss of 10 or more sirens, or spurious activation signal with 1 or more sirens still sounding.

**Standard:** Determines none of the following occurred: loss of 10 or more sirens, or spurious activation signal with 1 or more sirens still sounding.

Comment:

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**SAT/UNSAT**

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## Performance Step: 14

Procedure Step: Determines if any of the following occurred: reactivity management event; hazardous material incident; fitness for duty; injury resulting in offsite medical attention; major enforcement action; non-routine communication to/from the NRC; reactor water condition above EPRI Action Level II; any event outside the plant design basis; any event proceeds differently than expected: unexpected ½ scram, unexpected and significant plant transient, LCO action that will not be met within deadline, initiation of a prompt investigation, or, an unexplained risk change.

**Standard:** Determines that an unexpected ½ scram has occurred. Checks YES to perform notifications and notifies the SOS/OD, DSM, and NRC Resident Inspector. The candidate may also determine that an unexplained risk change has occurred.

Comment:

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**SAT/UNSAT**

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Performance Information

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## Performance Step: 15

Procedure Step: Determines if any of the following occurred: the event forced entry into a  $\leq$  72 hour shutdown LCO; the event forced a plant shutdown or unplanned power reduction; the event involved a significant breakdown of plant radiological or environmental controls.

**Standard:** Procedure Step: Determines that the event forced entry into a  $\leq$  72 hour shutdown LCO (loss of this Bus is a 30 hour shutdown IAW TS 3.7.B. Checks YES to perform notifications and notifies the SOS/OD, DSM, and NRC Resident Inspector.

Comment:  

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SAT/UNSAT

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Performance Information

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Performance Step: 16

Procedure Step: Determines if any of the TS 6.9.3 Unique Reportability Requirements occurred.

**Standard:** Determines that none of the TS 6.9.3 Unique Reportability Requirements occurred.Comment: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_**SAT/UNSAT** \_\_\_\_\_**JPM Stop Time:** \_\_\_\_\_

## Validation of Completion

JPM Number: NRC JPM ADMIN SRO2

Examinee's Name: \_\_\_\_\_

Examiner's Name: \_\_\_\_\_

Date Performed: \_\_\_\_\_

Facility Evaluator: \_\_\_\_\_

Number of Attempts: \_\_\_\_\_

Time to Complete: \_\_\_\_\_

Question:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Response:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Result: Satisfactory/Unsatisfactory

Examiner's Signature and Date: \_\_\_\_\_

Simulator Setup

1. None.
2. Have a clean copy of Procedure OP-AA-106-101, Significant Event Reporting, and RAP-9XF7d, 24 VDC PP-A LOST as handouts to the Candidate.

STUDENT HANDOUTInitial Conditions:

1. A plant startup is in progress.
2. The REACTOR MODE SELECTOR switch is in STARTUP.
3. All IRMs indicate midscale on Range 8.
4. All APRMs indicate 1%.
5. Annunciator 9XF7d, 24 VDC PP-A PWR LOST alarmed 20 minutes.
6. Electrical maintenance suspects a short circuit.
7. The current date/time is April 19, 2008 at 1000.
8. A recovery plan has not been established.

Task Cue:

- Complete Attachment 2, Shift Manager's Notification Worksheet, of OP-AA-106-101, Significant Event Reporting, for receipt of the 24 VDC PP-A PWR LOST annunciator.
- Determine who the Shift Manager notifies of this event and why.
- Determining the requirement for a written report and LER will be performed by another Operator.

Attachment 2  
Shift Manager's Notification Worksheet  
Page 1 of 5

DATE/TIME of Event <b>4/19/08 1000</b>	EVENT DESCRIPTION (use additional paper as necessary) <b>Loss of power to 24 VDC PP-A (may also include 1/2 scram)</b>		
CURRENT POWER/MODE <b>170 startup</b>			
PRIOR POWER/MODE <b>170 startup</b>			
RECOVERY PLAN IF REQUIRED (use additional paper as necessary) <b>Not yet established.</b>			
Does the event / condition require an EP Declaration?  <input type="checkbox"/> YES, <b>Perform</b> required communications after completing notifications required per site specific EP procedures  <b>No.</b>	Notify: SOS / OD NRC Operations Center Duty Station Manager (DSM) <ul style="list-style-type: none"> <li>▪ PM</li> <li>▪ SVP</li> <li>▪ NDO</li> <li>▪ Manager, Reg. Assurance Group</li> <li>▪ ANI and INPO (Alert or higher EAL)</li> </ul> NRC Senior Resident Inspector	<b>Date</b>	<b>Time</b>
		Date and Time all notifications have been completed by DSM	
Does the event / condition require reporting to the NRC via ENS or to an outside agency per Exelon Reportability Reference Manual?  <input type="checkbox"/> YES, Perform the following: →  <b>No.</b>	If time permits: Independent SRO peer check completed NRC Form 361.  SRO Signature  Notify: SOS / OD NRC Operations Center DSM <ul style="list-style-type: none"> <li>▪ PM</li> <li>▪ SVP</li> <li>▪ NDO</li> <li>▪ Manager, Reg. Assurance Group</li> <li>▪ Manager, Nuclear Oversight Group</li> <li>▪ Communication (as required)</li> <li>▪ Environmental (as required)</li> </ul> NRC Senior Resident Inspector	<b>Date</b>	<b>Time</b>
		Date and Time all notifications have been completed by DSM	

Attachment 2  
Shift Manager's Notification Worksheet  
Page 2 of 5

<p>Did the following events/condition occur? Oil discharge into/upon navigable waters or adjoining shoreline.</p> <p><input type="checkbox"/> YES, <b>Perform</b> notifications →</p> <div style="border: 1px solid black; padding: 2px; margin: 5px 0;"> <p><b>Oyster Creek Only</b></p> </div> <div style="border: 1px solid black; padding: 2px; margin: 5px 0;"> <p><u>NOTE:</u> Refer to Attachment 3 for additional notification and reporting instructions.</p> </div> <p><i>No.</i></p>	<p>Notify:</p> <p>SOS / OD National Response Center (EPA) EPA NRC Operations Center DSM</p> <ul style="list-style-type: none"> <li>▪ PM</li> <li>▪ SVP</li> <li>▪ NDO</li> <li>▪ Manager, Reg. Assurance Group</li> <li>▪ First Energy (JCP&amp;L) (Oyster Creek Only)</li> </ul> <p>NRC Senior Resident Inspector</p>	<p><b>Date</b></p>	<p><b>Time</b></p>
		<p>Date and Time all notifications have been completed by DSM</p>	
<div style="border: 1px solid black; padding: 2px; margin: 5px 0;"> <p><b>Oyster Creek Only</b></p> </div> <p><i>No.</i></p> <p>Did any of the following events/conditions occur?</p> <ul style="list-style-type: none"> <li>• A leak or discharge of petroleum product, or hazardous substance, from the warehouse drop tank.</li> <li>• Spill or discharge of hazardous materials in a quantity that constitutes a reportable discharge into or upon surface waters, groundwater, or onto the ground (incl. Petroleum products)</li> </ul> <p><input type="checkbox"/> YES, <b>Perform</b> notifications →</p> <div style="border: 1px solid black; padding: 2px; margin: 5px 0;"> <p><u>NOTE:</u> Refer to Attachment 3 for additional notification and reporting instructions.</p> </div>	<p>Notify:</p> <p>SOS / OD State DEP Ocean County Health Department NRC Operations Center DSM</p> <ul style="list-style-type: none"> <li>▪ PM</li> <li>▪ SVP</li> <li>▪ NDO</li> <li>▪ Manager, Reg. Assurance Group</li> <li>▪ First Energy (JCP&amp;L)</li> </ul> <p>NRC Senior Resident Inspector</p>	<p><b>Date</b></p>	<p><b>Time</b></p>
		<p>Date and Time all notifications have been completed by DSM</p>	
<p>Did the following events/condition occur?</p> <p>Release of designated hazardous substances in amounts equal to or in excess of a EPA reportable quantity.</p> <p><input type="checkbox"/> YES, <b>Perform</b> notifications →</p> <div style="border: 1px solid black; padding: 2px; margin: 5px 0;"> <p><b>Oyster Creek Only</b></p> </div> <div style="border: 1px solid black; padding: 2px; margin: 5px 0;"> <p><u>NOTE:</u> Refer to Attachment 3 for additional notification and reporting instructions.</p> </div> <p><i>No.</i></p>	<p>Notify:</p> <p>SOS / OD National Response Center (EPA) State DEP Lacey Twp. Police (Oyster Creek Only) NRC Operations Center DSM</p> <ul style="list-style-type: none"> <li>▪ PM</li> <li>▪ SVP</li> <li>▪ NDO</li> <li>▪ Manager, Reg. Assurance Group</li> <li>▪ First Energy (JCP&amp;L) (Oyster Creek Only)</li> </ul> <p>NRC Senior Resident Inspector</p>	<p><b>Date</b></p>	<p><b>Time</b></p>
		<p>Date and Time all notifications have been completed by DSM</p>	



Attachment 2  
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<p>Did any of the following events / conditions occur?</p> <ul style="list-style-type: none"> <li>RCRA Program Exception Report Submitted</li> <li>Environmental Noncompliance endangering health or Environment</li> </ul> <p><input type="checkbox"/> YES, <b>Perform</b> notifications →</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p><b>Oyster Creek Only</b> <span style="float: right; font-size: 1.5em;"><i>No.</i></span></p> <p><u>NOTE</u></p> <p>Refer to Attachment 3 for additional notification and reporting instructions.</p> </div>	<p>Notify:</p> <p>SOS / OD</p> <p>State DEP</p> <p>NRC Operations Center</p> <p>DSM</p> <ul style="list-style-type: none"> <li>PM</li> <li>SVP</li> <li>NDO</li> <li>Manager, Reg. Assurance Group</li> </ul> <p>NRC Senior Resident Inspector</p>	<p><b>Date</b></p>	<p><b>Time</b></p>
		<p>Date and Time all notifications have been completed by DSM</p>	
<p>Did any of the following events / conditions occur?</p> <p>Incident threatening health or environment or release equal to or in excess of EPA reportable quantity</p> <p><input type="checkbox"/> YES, <b>Perform</b> notifications →</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p><b>Oyster Creek Only</b> <span style="float: right; font-size: 1.5em;"><i>No.</i></span></p> <p><u>NOTE</u></p> <p>Refer to Attachment 3 for additional notification and reporting instructions.</p> </div>	<p>Notify:</p> <p>SOS / OD</p> <p>National Response Center</p> <p>State DEP</p> <p>NRC Operations Center</p> <p>DSM</p> <ul style="list-style-type: none"> <li>PM</li> <li>SVP</li> <li>NDO</li> <li>Manager, Reg Assurance Group</li> </ul> <p>NRC Senior Resident Inspector</p>	<p><b>Date</b></p>	<p><b>Time</b></p>
		<p>Date and Time all notifications have been completed by DSM</p>	
<p><b>Oyster Creek Only</b> <span style="float: right; font-size: 1.5em;"><i>No.</i></span></p> <p>Did the following events/condition occur?</p> <ul style="list-style-type: none"> <li>Loss of 10 or more sirens</li> <li>Spurious activation signal with 1 or more sirens still sounding</li> </ul> <p><input type="checkbox"/> YES, <b>Perform</b> notifications →</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p><u>NOTE</u></p> <p>Refer to Attachment 3 for additional notification and reporting instructions.</p> </div>	<p>Notify:</p> <p>SOS / OD</p> <p>Ocean County Police Dispatcher</p> <p>NRC Operations Center</p> <p>DSM</p> <ul style="list-style-type: none"> <li>PM</li> <li>SVP</li> <li>NDO</li> <li>Manager, Reg. Assurance Group</li> </ul> <p>NRC Senior Resident Inspector</p>	<p><b>Date</b></p>	<p><b>Time</b></p>
		<p>Date and Time all notifications have been completed by DSM</p>	

Attachment 2  
Shift Manager's Notification Worksheet  
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<p>Did any of the following events/conditions occur?</p> <ol style="list-style-type: none"> <li>1. Reactivity management event per OP-AA-300-1540.</li> <li>2. Hazardous material incident</li> <li>3. Sentinel / Oram Risk level is / or is planned to be ORANGE or RED</li> <li>4. Fitness-for-duty event</li> <li>5. Injury resulting in offsite medical attention</li> <li>6. Major enforcement action, fine, or other sanction; serious operating event that could result in such action; including events which have been or maybe brought to NRC upper management attention</li> <li>7. Non-routine communications to / from NRC</li> <li>8. Reactor Water Chemistry above or at EPRI Action Level II</li> <li>9. Any event or operation condition outside plant design basis</li> <li>10. Any event that proceeds differently than expected             <ol style="list-style-type: none"> <li>a. Unexpected ½-scam</li> <li>b. Unexpected, significant plant transient</li> <li>c. LCO action that will not be met within deadline</li> <li>d. Initiation of a prompt investigation</li> <li>e. Unplanned Risk Change</li> </ol> </li> </ol> <p><input checked="" type="checkbox"/> YES, Perform notifications →</p>	<p>Notify: SOS / OD ✓</p> <p>DSM ✓</p> <ul style="list-style-type: none"> <li>▪ PM</li> <li>▪ SVP</li> <li>▪ NDO</li> <li>▪ Manager, Nuclear Oversight Group</li> <li>▪ Communication (as required)</li> <li>▪ Environmental (as required)</li> </ul> <p>NRC Senior Resident Inspector ✓</p>	<table border="1"> <thead> <tr> <th>Date</th> <th>Time</th> </tr> </thead> <tbody> <tr> <td colspan="2">Date and Time all notifications have been completed by DSM</td> </tr> <tr> <td></td> <td></td> </tr> <tr> <td></td> <td></td> </tr> </tbody> </table>	Date	Time	Date and Time all notifications have been completed by DSM					
Date	Time									
Date and Time all notifications have been completed by DSM										
<ol style="list-style-type: none"> <li>1. Did the event/condition force entry into a ≤ 72hour shutdown LCO?</li> <li>2. Did the event/condition force a plant shutdown or unplanned power reduction?             <ul style="list-style-type: none"> <li>ie. Power reductions required due to high discharge temperature or required to perform an activity such as main condenser backwashing.</li> </ul> </li> <li>3. Did the event/condition involve a significant breakdown of plant radiological or environmental controls?</li> </ol> <p><input checked="" type="checkbox"/> YES, Perform notifications →</p>	<p>Notify: SOS / OD ✓</p> <p>DSM ✓</p> <ul style="list-style-type: none"> <li>▪ Work Week Manager</li> <li>▪ Director, Work Mgmt. (via WWM)</li> <li>▪ Eng. Duty Manager</li> <li>▪ PM</li> <li>▪ SVP</li> <li>▪ NDO</li> <li>▪ Manager, Nuclear Oversight Group</li> </ul> <p>NRC Senior Resident Inspector ✓</p>	<table border="1"> <thead> <tr> <th>Date</th> <th>Time</th> </tr> </thead> <tbody> <tr> <td colspan="2">Date and Time all notifications have been completed by DSM</td> </tr> <tr> <td></td> <td></td> </tr> <tr> <td></td> <td></td> </tr> </tbody> </table>	Date	Time	Date and Time all notifications have been completed by DSM					
Date	Time									
Date and Time all notifications have been completed by DSM										

Attachment 2  
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<div style="border: 1px solid black; display: inline-block; padding: 2px; margin-bottom: 5px;">Oyster Creek Only</div> <div style="font-size: 1.5em; margin-left: 10px;">No.</div> <p>Did any of the following TS 6.9.3 Unique Reportability Requirement events occur?</p> <ol style="list-style-type: none"> <li>1. Leak test on a sealed source that yielded <math>\geq 0.005</math> <math>\mu\text{Ci}</math> of removable contamination</li> <li>2. A reportable event pursuant to the ODCM</li> <li>3. EMRV or Safety Valve challenge or failure (non LER reportable).             <ol style="list-style-type: none"> <li>a. A "challenge" is an automatic actuation outside purposeful surveillance or testing.</li> <li>b. A special report is to be sent to the NRC within 60 days.</li> </ol> </li> <li>4. Any of the following SLC (Liquid Poison) Technical Specification conditions:             <ol style="list-style-type: none"> <li>a. 3.2.C.3 (b)</li> <li>b. 3.2.C.3 (e) (i)</li> <li>c. 4.2.E.5</li> </ol> </li> <li>5. Inoperable high-range radioactive noble gas effluent monitor (TS 3.13.H)</li> </ol> <p><input type="checkbox"/> YES, Perform notifications →</p>		<p>Notify:</p> <p>SOS / OD</p>  <p>DSM</p> <ul style="list-style-type: none"> <li>▪ Work Week Manager</li> <li>▪ Director, Work Mgmt. (via WWM)</li> <li>▪ Eng. Duty Manager (via WWM)</li> <li>▪ PM</li> <li>▪ SVP</li> <li>▪ NDO</li> <li>▪ Manager, Nuclear Oversight Group</li> </ul>  <p>NRC Senior Resident Inspector</p>	
		Date	Time
		Date and Time all notifications have been completed by DSM	
<b>REQUIRED WRITTEN REPORT</b>		<b>LICENSEE EVENT REPORT</b>	
CHECK ONE	REPORT DUE WITHIN	CHECK ONE	REPORT DUE WITHIN
<input type="checkbox"/> REQUIRED <input type="checkbox"/> NOT REQUIRED	<input type="checkbox"/> 30 DAYS <input type="checkbox"/> 60 DAYS <input type="checkbox"/> OTHER _____	<input type="checkbox"/> REQUIRED <input type="checkbox"/> NOT REQUIRED	<input type="checkbox"/> 30 DAYS <input type="checkbox"/> 60 DAYS <input type="checkbox"/> OTHER _____

Facility: Oyster Creek Task No.: 2260201402Task Title: Review Acceptance Criteria for a Completed Surveillance TestJob Performance Measure No.: NRC JPM ADMIN SRO3K/A Reference: Generic 2.2.12 (SRO 3.4)

Examinee: \_\_\_\_\_ Examiner: \_\_\_\_\_

Facility Evaluator: \_\_\_\_\_ Date: \_\_\_\_\_

Method of Testing:

Simulated Performance \_\_\_\_\_ Actual Performance XClassroom X Simulator \_\_\_\_\_ Plant \_\_\_\_\_*Read to the Examinee:*

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

1. The plant is at rated power.
2. Surveillance test, 607.4.004, Containment Spray and Emergency Service Water System 1 Pump Operability and Comprehensive/Preservice/Post-Maintenance Inservice Test, has just been completed.
3. The test was a normally scheduled test.

Task Standard: The Candidate reviews the surveillance test Acceptance Criteria, recognizes the component discrepancies, and states the required action for each component discrepancy.

Required Materials: None.

## General References:

1. Procedure 607.4.004, Containment Spray and Emergency Service Water System 1 Pump Operability and Comprehensive/Preservice/Post-Maintenance Inservice Test, revision 62.
2. AD-AA-101, Processing of Procedures and T&RMs, revision 18.

---

Initiating Cue: Perform the Acceptance Criteria section of the completed surveillance test, 607.4.004. Write your observations on the attached sheets. State any test discrepancies and any required actions for any noted discrepancy. Some Steps have already been evaluated as Satisfactory and are complete.

- State if the step is SAT or UNSAT
- If UNSAT, state the reason and the required actions

Time Critical Task: No.

Validation Time: 20 minutes.

*Denote critical steps with a check mark ✓*

---

Performance Step: 1

Procedure Step: Provides repeat back of initiating cue.

**JPM Start Time:** \_\_\_\_\_

**Standard:** Provides repeat back of initiating cue. *Evaluator acknowledges the repeat back. Provide the Candidate with the section of the completed procedure and the attached sheets.*

**Comment:**

**SAT/UNSAT**

**ACCEPTANCE CRITERIA**

<b><u>Step</u></b>	<b><u>SAT/UNSAT</u></b>	<b><u>Required Action if UNSAT/Reason</u></b>
7.1.1	SAT	None
7.1.2	SAT	None
7.1.3	SAT	None
	<b>NOTE/CUE:</b>	IF the Candidates do not state TS requirements, tell them to list the most limiting TS requirement.
7.1.4	<b>UNSAT CRITICAL</b>	Incorrect use of temporary procedure change for TS surveillance acceptance criteria of ESW flow > 3000 gpm. Declare ESW Pump 52A inoperable and apply TS 3.4.C.4 due to low flow (15 day LCO from this inoperable component alone).
7.1.5	SAT	None
7.1.6	SAT	None
7.2.1	SAT	None

**ACCEPTANCE CRITERIA**

<b><u>Step</u></b>	<b><u>SAT/UNSAT</u></b>	<b><u>Required Action if UNSAT/Reason</u></b>
7.2.2	SAT	
7.2.3	<b>UNSAT CRITICAL</b>	Containment Spray Pump 51B vibration 4A is above the action range. Declare Containment Spray Pump 51B inoperable and apply TS 3.4.C.4 (15 day LCO from this inoperable component alone). But, since more than 1 pump is inoperable in the same loop, the loop must be considered inoperable. IAW TS 3.4.C.3, a 7 day LCO now applies.
7.2.4	<b>UNSAT CRITICAL</b>	Valve V-21-17 strokes outside the accept range but less than the limiting value. Retest immediately or declare inoperable and apply TS.
7.3	SAT	None
7.4	SAT	None



## Validation of Completion

JPM Number: NRC JPM ADMIN SRO3

Examinee's Name: \_\_\_\_\_

Examiner's Name: \_\_\_\_\_

Date Performed: \_\_\_\_\_

Facility Evaluator: \_\_\_\_\_

Number of Attempts: \_\_\_\_\_

Time to Complete: \_\_\_\_\_

Question:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Response:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Result: Satisfactory/Unsatisfactory

Examiner's Signature and Date: \_\_\_\_\_

---

Simulator Setup

1. None.
2. Provide pages 45 through E4-4 ONLY of 607.4.004. (Include a good page E2-1 since this page has been modified in the handout)
3. Make the following steps on the test:
  - a. Step 7.1.4: Lineout 3100 and insert 3000. Include TPC data.
  - b. On the IST Pump Summary Sheet table, insert ESW 52A flow at 3050 gpm. Have all other flows acceptable.
  - c. On the vibration table for point 4A for Containment Spray Pump 51B, insert a value greater than the ACTION limit. Mark all other vibrations below the ALERT values. (0.26 in/sec)
  - d. In the valve stroke summary table, make the OPENING time for V-21-18 greater than the ACCEPT RANGE, but less than the LIMITING VALUE. Mark all others in the ACCEPT RANGE (37.4 seconds)
  - e. In the IST Valve Summary Sheet, lineout 3100 gpm and insert 3000 gpm for ESW Pump 52A flow. Initial and date.

STUDENT HANDOUTInitial Conditions:

1. The plant is at rated power.
2. Surveillance test, 607.4.004, Containment Spray and Emergency Service Water System 1 Pump Operability and Comprehensive/Preservice/Post-Maintenance Inservice Test, has just been completed.
3. The test was a normally scheduled test.

Task Cue:

Perform the Acceptance Criteria section of the completed surveillance test, 607.4.004. Write your observations on the attached sheets. State any test discrepancies and any required actions for any noted discrepancy. Some Steps have already been evaluated as Satisfactory and are complete.

- State if the step is SAT or UNSAT
- If UNSAT, state the reason and the required actions

---

STUDENT HANDOUT  
ACCEPTANCE CRITERIA

<u>Step</u>	<u>SAT/UNSAT</u>	<u>Required Action if UNSAT/Reason</u>
7.1.1	SAT	None
7.1.2	SAT	None
7.1.3	SAT	None
7.1.4		
7.1.5		
7.1.6		
7.2.1		

STUDENT HANDOUT  
ACCEPTANCE CRITERIA

<u>Step</u>	<u>SAT/UNSAT</u>	<u>Required Action if UNSAT/Reason</u>
-------------	------------------	--

7.2.2		
-------	--	--

7.2.3		
-------	--	--

7.2.4		
-------	--	--

7.3	SAT	None
-----	-----	------

7.4	SAT	None
-----	-----	------

Title  
**Containment Spray and Emergency Service Water System I  
Pump Operability and Comprehensive / Preservice / Post-  
Maintenance Inservice Test**

Revision No.  
62

CV

Initial/Verify

- 6.56 **ALIGN** heat exchanger instrument valves in accordance with Attachment 607.4.004-6. BB /
- 6.57 **CONFIRM OPEN** ESW Flow Gauge DPI-532-5 Isolation Valves V-3-569 and V-3-570. BB /
- 6.58 **RESTORE** drywell pressure IAW Procedure 312. BB /
- 6.59 **NOTIFY** Chemistry Technician to check and adjust the injection rate of chlorine IAW Procedure 326. BB /
- 6.60 **TRANSFER** all pertinent data to Attachment 607.4.004-4. BB /
- 6.61 **REVIEW** the results of this test against Section 7.0 Acceptance Criteria. BB /
- 6.62 **RECORD** comments/discrepancies on the Surveillance Review Form. BB /

## 7.0 ACCEPTANCE CRITERIA

7.1 The components tested by this procedure meet Tech. Spec. operability requirements if the following criteria are met. If any are **not** met, consider the affected component inoperable and follow the requirements of Tech. Spec. Section 3.4.C and Procedure LS-AA-120:

- 7.1.1 Containment Spray System Discharge Pressure is >60 psig.
- 7.1.2 The Containment Spray and Emergency Service Water Pumps start and stop when given appropriate signals.
- 7.1.3 Each Containment Spray Heat Exchanger total differential pressure is  $\leq 40$  psid.
- 1.4 Emergency service water flow rate as indicated on Plant Process Computer Point ESW\_12 is  $\geq 3100$  gpm.
- 7.1.5 Containment Spray water flow rate is  $\geq 4000$  gpm.

TPC 4231  
Exp. 4/24/08  
J. Sisak  
Today

Title  
**Containment Spray and Emergency Service Water System I  
Pump Operability and Comprehensive / Preservice / Post-  
Maintenance Inservice Test**

Revision No.  
62

- 7.1.6 All motor operated valves operate as specified and all valve stroke times **do not** exceed the Limiting Value listed on Attachment 607.4.004-4.

NOTE

When a component is Preservice (baseline) tested per the IST Program, new alert and action level values are established for that component. The alert/action levels associated with the old component (Attachment 607.4.004-4) should **not** be used to determine operability of the new component.

- 7.2 The components tested by this procedure meet In-Service Test (IST) requirements for operability if the following criteria are met. If any are **not** met, consider the component inoperable and follow the requirements of Tech Spec Section 3.4.C and Procedure LS-AA-120.
- 7.2.1 Containment Spray Pump flows are between the high and low action ranges as listed on the IST Pump Summary Sheet and IST Valve Summary Sheet (Attachment 607.4.004-4).
- 7.2.2 ESW pump flow values are between the high and low action ranges as listed on the IST Pump Summary Sheet and IST Valve Summary Sheet (Attachment 607.4.004-4).
- 7.2.3 ESW and Containment Spray Pump vibration readings are below the action range as listed on the Vibration Data Sheet (Attachment 607.4.004-4).
- 7.2.4 All valves on Attachment 607.4.004-4 meet the acceptance criteria.
- 7.2.4.1 IF a valve fails to stroke to the required position
- OR if its stroke time exceeds the limiting value of full stroke time specified in Attachment 607.4.004-2,
- THEN it shall be immediately declared inoperable and the requirements of Technical Specification 3.4C and Procedure LS-AA-120 shall be followed.

## Title

**Containment Spray and Emergency Service Water System I  
Pump Operability and Comprehensive / Preservice / Post-  
Maintenance Inservice Test**Revision No.  
62

- 7.2.4.2 IF a valve fails to stroke to the required position within its acceptable range as specified in Attachment 607.4.004-2,
- BUT does **not** exceed the limiting value of full stroke time specified in Attachment 607.4.004-2,
- THEN it shall be immediately retested or declared inoperable, at the direction of the US.
1. IF the valve is declared inoperable,  
THEN the requirements of Technical Specification 3.4C and Procedure LS-AA-120 shall be followed.
  2. IF the valve is retested  
AND it fails to stroke OR exceeds the limiting value of full stroke time,  
THEN it shall be immediately declared inoperable  
AND the requirements of Technical Specification 3.4C and Procedure LS-AA-120 shall be followed.
  3. IF the valve is retested  
AND again fails to stroke within its acceptable range  
BUT does **not** exceed the limiting value of full stroke time,  
THEN the data shall be analyzed within 96 hours to verify that the new stroke time represents acceptable operation,  
AND the requirements of Procedure LS-AA-120 shall be followed.



## Title

**Containment Spray and Emergency Service Water System I  
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Maintenance Inservice Test**Revision No.  
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**NOTE:** If such verification is not performed within the 96 hour limit, the valve shall be declared inoperable and the requirements of Technical Specification 3.4C and Procedure LS-AA-120 shall be met.

4. IF the valve is retested

AND strokes within its acceptable range,

THEN the cause of the initial deviation shall be analyzed and the results documented

AND the requirements of Procedure LS-AA-120 shall be followed.

7.2.4.3 IF excessive flow is observed from V-3-698,

AND operating ESW Pump flow is  $\geq 3100$  gpm

THEN the ESW system is operable and the keepfill line is not required to be isolated.

7.3 If the following criterion is not met, check the calibration of the affected Containment Spray Heat Exchanger Pressure gauges. If calibration checks are satisfactory, schedule the affected heat exchanger(s) for tube side cleaning as soon as practical.

7.3.1 The Containment Spray Heat Exchanger total  $\Delta P \leq 20$  psid.

7.4 If any alert threshold is exceeded, or if the following criteria are not met, or if any other deviation from proper operation is noted, initiate a CAP in accordance with Procedure LS-AA-120 (unless a CAP was issued previously):

7.4.1 Corner Room cooling fans start on appropriate signals.

7.4.2 All Heat Exchanger tube to shell  $\Delta P$ 's are  $\geq 5$  psid.

7.4.3 There is no leakage from Heat Exchanger Thermal Relief valves V-3-82, V-3-83, V-21-21 and V-21-22.

Title

**Containment Spray and Emergency Service Water System I  
Pump Operability and Comprehensive / Preservice / Post-  
Maintenance Inservice Test**

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8.0 ATTACHMENT

- 8.1 607.4.004-1, ESW Pump Vibration Locations
- 8.2 607.4.004-2, Cont. Spray Pump Vibration Locations
- 8.3 607.4.004-3, Test Equipment
- 8.4 607.4.004-4, IST Pump Summary Sheet and IST Valve Summary Sheets
- 8.5 607.4.004-5, Cont. Spray and ESW Initial Instrumentation Valving.
- 8.6 607.4.004-6, Cont. Spray and ESW Final Instrumentation Valving.
- 8.7 607.4.004-7, Heat Exchanger Differential Pressure Verification.
- 8.8 607.4.004-8, IST Valves
- 8.9 607.4.004-9, Preservice/Baseline/Comprehensive Test Instruments

Title

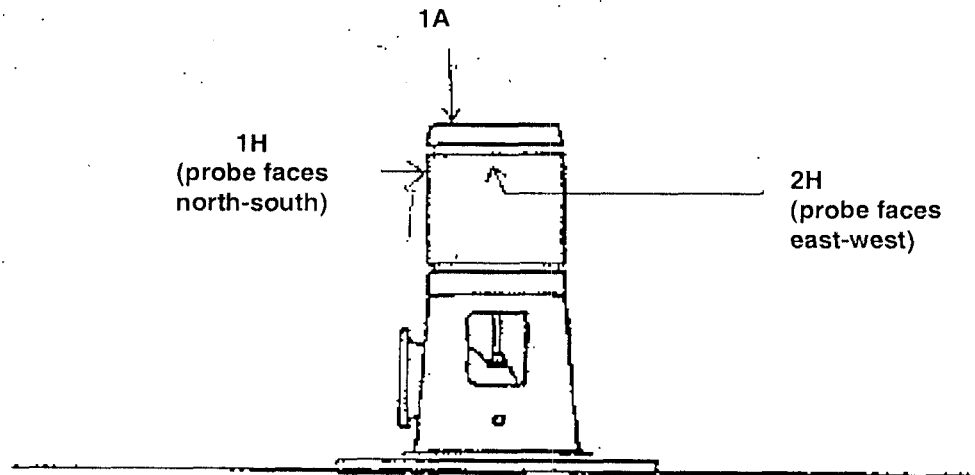
**Containment Spray and Emergency Service Water System I  
Pump Operability and Comprehensive / Preservice / Post-  
Maintenance Inservice Test**

Revision No.  
62

ATTACHMENT 607.4.004-1

ESW PUMP VIBRATION LOCATIONS

Note: Accelerometer probe locations are the same for all (4) ESW Pumps.

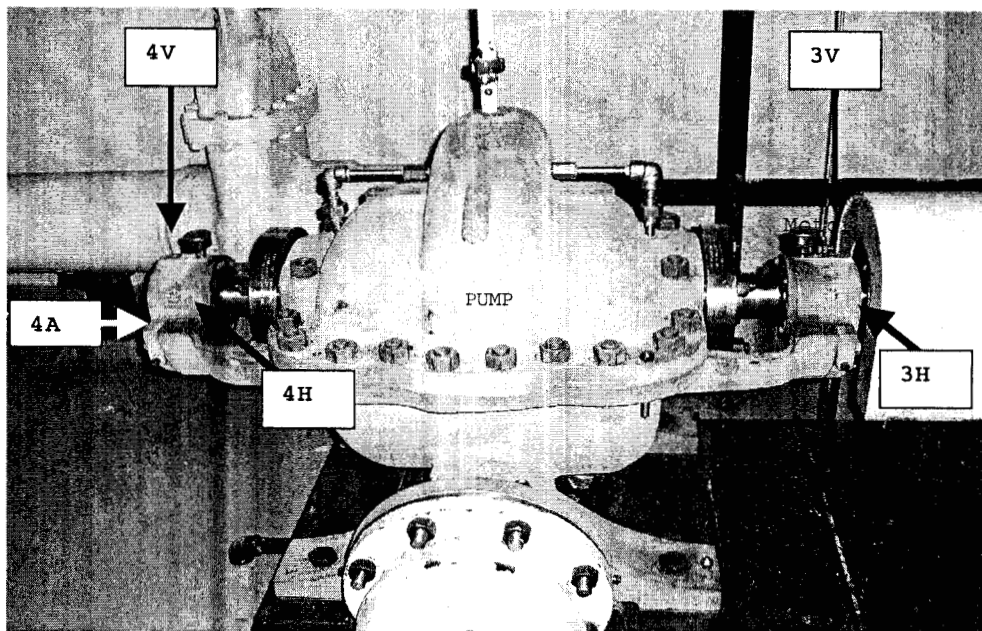
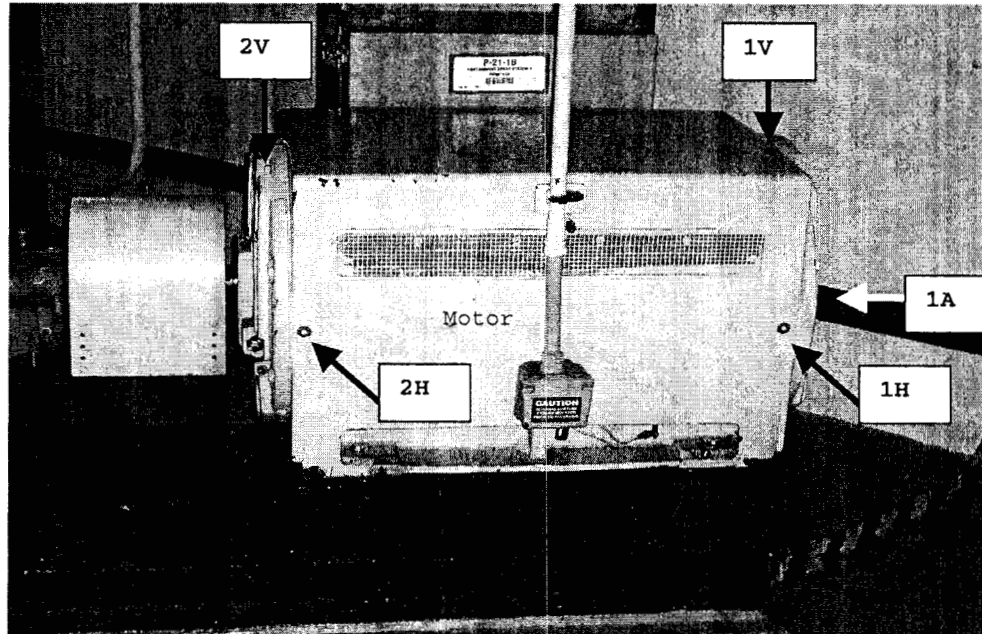


Title  
**Containment Spray and Emergency Service Water System I  
Pump Operability and Comprehensive / Preservice / Post-  
Maintenance Inservice Test**

Revision No.  
**62**

ATTACHMENT 607.4.004-2

CONT. SPRAY PUMP AND MOTOR VIBRATION LOCATIONS



NOTE: HORIZONTAL POINTS MAY BE TAKEN FROM EITHER SIDE OF  
THE BEARING HOUSING

Title  
**Containment Spray and Emergency Service Water System I  
Pump Operability and Comprehensive / Preservice / Post-  
Maintenance Inservice Test**

Revision No.  
62

ATTACHMENT 607.4.004-3

TEST EQUIPMENT

Preferred Controlled / Calibrated Test Equipment		
Equipment Type	Control Number	Calibration Due Date
CSI Model 2120 Vibration Instrument	1A-2120	6/2008
Wilcoxon AE793 Transducer	2A-AE793	6/2008
CSI Model A0760GP Transducer	3A-A0760GP	6/2008
CSI Model A0220HF Transducer	4A-A0220HF	6/2008
Wilcoxon Model 793 Transducer	5A-793R	6/2008
Wilcoxon Model 793R Transducer	6A-793R	6/2008
Stopwatches	101SW	12.2008
Additional Equipment (record below)		
Engineering Alternates - Complete as Necessary		
Evaluation by: _____		Date: _____

Title  
**Containment Spray and Emergency Service Water System I  
Pump Operability and Comprehensive / Preservice / Post-  
Maintenance Inservice Test**

Revision No.  
62

ATTACHMENT 607.4.004-4  
IST PUMP SUMMARY SHEET

Date of Test \_\_\_\_\_

CONTAINMENT SPRAY FLOW

Pump (Step)	Comprehensive Lower Limit		Measured Flow (GPM)	Comprehensive Upper Limit	
	Action	Alert		Alert	Action
51A (6.14.2 or 6.14.6.2 (4))	3800	3948	4100	N/A	4326
51B (6.35.2 or 6.35.6.2 (4))	3800	3948	4100	N/A	4326

ESW FLOW

Pump (Step)	Comprehensive Lower Limit		PPC Measured Flow (GPM)	Comprehensive Upper Limit	
	Action	Alert		Alert	Action
52A (6.24.1.2)	2994	3058	3050	N/A	3316
52B (6.44.1.2)	3034	3099	3200	N/A	3360

Title  
**Containment Spray and Emergency Service Water System I  
Pump Operability and Comprehensive / Preservice / Post-  
Maintenance Inservice Test**

Revision No.  
**62**

ATTACHMENT 607.4.004-4  
(continued)  
QUARTERLY VIBRATION DATA TABLE

		Overall Reading, in/sec		
		Measured	Alert	Action
51A (6.19.1)	3H	0.22	.26	.624
	3V	0.21	.24	.576
	4H	0.18	.205	.492
	4V	0.17	.205	.492
	4A	0.09	.128	.306
51B (6.19.1)	3H	0.18	.223	.534
	3V	0.15	.183	.438
	4H	0.14	.183	.438
	4V	0.14	.19	.456
	4A	0.26	.1	.24
52A (6.20.1)	1H	0.19	.224	.538
	1A	0.15	.184	.440
	2H	0.20	.220	.529
52B (6.40.1)	1H	0.24	.308	.70
	1A	0.11	.158	.378
	2H	0.21	.295	.70

Title  
**Containment Spray and Emergency Service Water System I  
Pump Operability and Comprehensive / Preservice / Post-  
Maintenance Inservice Test**

Revision No.  
62

ATTACHMENT 607.4.004-4  
(continued)  
IST VALVE SUMMARY SHEET

PARAMETER (STEP)	Acceptance Criteria	COMPONENT / POSITION TESTED / TESTED
Pump 51 A Flow (6.14.2) <u>4100</u> GPM	$\geq 4000$ GPM	V-21-8 Closed V-21-10 Open
Water Flowing from V-3-698 (6.16.7) (Initial One) <u>X</u> little or no excessive	Little or No	V-3-133 Closed
Pump 51B Shaft Rotation (6.11.8) ___yes___ <u>X</u> no	No Shaft Rotation	V-21-8 Closed
Pump 52A Flow PPC Point ESW_12 (6.26) <u>3050</u> GPM	<i>TPC 4231</i> <i>Exp. 4/24/08</i> <i>J. Sisak</i> $\geq 3100$ GPM <i>Today</i> <u>3000</u> GPM	V-3-67 Closed V-3-68 Open
Pump 52B Shaft Rotation (6.13.4) ___yes___ <u>X</u> no	No Shaft Rotation	V-3-67 Closed
Pump 51B Flow (6.35.2) <u>4100</u> GPM	$\geq 4000$ GPM	V-21-10 Closed V-21-8 Open
Pump 51A Shaft Rotation (6.32.8) ___yes___ <u>X</u> no	No Shaft Rotation	V-21-10 Closed
Pump 52B Flow PPC Point ESW_12 (6.46) <u>3200</u> GPM	$\geq 3100$ GPM	V-3-68 Closed V-3-67 Open
Pump 52A Shaft Rotation (6.34.4) ___yes___ <u>X</u> no	No Shaft Rotation	V-3-68 Closed



Title  
**Containment Spray and Emergency Service Water System I  
Pump Operability and Comprehensive / Preservice / Post-  
Maintenance Inservice Test**

Revision No.  
62

ATTACHMENT 607.4.004-4  
(continued)

IST VALVE STROKE TIME SUMMARY

STEP	VALVE	DIRECTION	ACTUAL TIME (sec)	ACCEPT RANGE (sec)	LIMITING VALUE (sec) <sup>(1)</sup>
6.4.4.1	V-21-17	CLOSE	30.1	MIN: 26.4 seconds MAX: 35.6 seconds	38.7 seconds
6.4.5.1	V-21-18	OPEN	37.8	MIN: 33.1 seconds MAX: 44.7 seconds	48.6 seconds
6.4.6.1	V-21-18	CLOSE	40.0	MIN: 32.2 seconds MAX: 43.5 seconds	47.3 seconds
6.4.9.1	V-21-11	OPEN	65.2	MIN: 57.6 seconds MAX: 77.9 seconds	84.7 seconds
6.5.1	V-21-11	CLOSE	69.7	MIN: 57.0 seconds MAX: 77.0 seconds	83.7 seconds
6.5.1	V-21-17	OPEN	37.4	MIN: 26.9 seconds MAX: 36.3 seconds	39.5 seconds

<sup>(1)</sup> Values are maximum, unless otherwise specified.

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Persons Performing Test: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Date

Facility: Oyster Creek Task No.: \_\_\_\_\_Task Title: Authorize Emergency ExposuresJob Performance Measure No.: NRC JPM ADMIN SRO4 (SRO)K/A Reference: Generic 2.3.4 (SRO 3.1)

Examinee: \_\_\_\_\_ Examiner: \_\_\_\_\_

Facility Evaluator: \_\_\_\_\_ Date: \_\_\_\_\_

Method of Testing:

Simulated Performance \_\_\_\_\_ Actual Performance XClassroom X Simulator \_\_\_\_\_ Plant \_\_\_\_\_*Read to the Examinee:*

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

## Initial Conditions:

1. The plant was at rated power when a severe earthquake occurred.
2. Chemistry has confirmed fuel failures.
3. Many plant systems have either failed to automatically isolate or are currently leaking from breaks or incomplete system isolations.
4. An emergency has been declared by the Shift Manager but no emergency operating facilities have been activated.
5. The RP Manager has forwarded 3 Authorization for Emergency Exposure forms to you for your approval. Personal information on the volunteers to perform the 3 different jobs is also provided.

Task Standard: Determines that only the Authorization for Emergency Exposure form for Chris Cat should be authorized, and that the others should not be authorized.

Required Materials: Completed Authorization for Emergency Exposure Forms.

## General References:

1. EP-AA-113, Personnel Protective Actions, revision 8
2. EP-AA-113-F-02, Authorization For Emergency Exposure, revision B

Initiating Cue: Review for authorization the 3 Authorization For Emergency Exposure forms provided to you from the RP Manager. If not approved, state why.

Time Critical Task: No.

Validation Time: 9 minutes

---

Performance Information

*Denote critical steps with a check mark ✓*

---

Performance Step: 1

Procedure Step: Provides repeat back of initiating cue.

**JPM Start Time:** \_\_\_\_\_

**Standard:** Provides repeat back of initiating cue. *Evaluator acknowledges the repeat back. Provide the Candidates the completed Authorization for Emergency Exposure forms.*

Comment:

**SAT/UNSAT**

**Note:** The determinations may be made in any order.

---

✓ Performance Step: 2

Procedure Step: 3.2, 3.3

Determines that authorization should not be provided to Alan Able (JOB A) since it will only result in a dose of 4 Rem (1/2 hour x 8 Rem/hr).

**Standard:**

Comment:

**SAT/UNSAT**

## Performance Information

✓

Performance Step: 3

Procedure Step: 4.3.3

Determines that authorization should not be provided to Bob Blake (JOB B) since he already has had an emergency exposure of >25 Rem before.

**Standard:** Determines that authorization should not be provided to Bob Blake (JOB B) since he already has had an emergency exposure of >25 Rem before.

Comment:

SAT/UNSAT

✓

Performance Step: 4

Procedure Step: Determines that authorization should be authorized for Chris Cat. He has had no prior emergency exposure > 25 Rem, and his expected exposure is > 5 Rem ( $4/6 \times 20 = 13.3$  Rem)

**Standard:** Determines that authorization should be authorized for Chris Cat. He has had no prior emergency exposure > 25 Rem, and his expected exposure is > 5 Rem ( $4/6 \times 20 = 13.3$  Rem)

Comment:

SAT/UNSAT

JPM Stop Time: \_\_\_\_\_

## Validation of Completion

JPM Number: NRC JPM ADMIN SRO4

Examinee's Name: \_\_\_\_\_

Examiner's Name: \_\_\_\_\_

Date Performed: \_\_\_\_\_

Facility Evaluator: \_\_\_\_\_

Number of Attempts: \_\_\_\_\_

Time to Complete: \_\_\_\_\_

Question:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Response:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Result: Satisfactory/Unsatisfactory

Examiner's Signature and Date: \_\_\_\_\_

Simulator Setup

1. None.

STUDENT HANDOUTInitial Conditions:

1. The plant was at rated power when a severe earthquake occurred.
2. Chemistry has confirmed fuel failures.
3. Many plant systems have either failed to automatically isolate or are currently leaking from breaks or incomplete system isolations.
4. An emergency has been declared by the Shift Manager but no emergency operating facilities have been activated.
5. The RP Manager has forwarded 3 Authorization for Emergency Exposure forms to you for your approval. Personal information on the volunteers to perform the 3 different jobs is also provided.

Task Cue:

Authorize or NOT authorize the 3 Authorization For Emergency Exposure forms provided to you from the RP Manager. If not approved, state why.



**Personal information on the volunteers to perform the 3 different jobs.**

<b>JOB A</b>	<b>PURPOSE:</b> To enter the Trunion Room to manually close the MSIVs to secure the steam leak into the Turbine Building. <b>DOSE RATE:</b> 8 R/hour. <b>JOB DURATION:</b> 30 minutes				
Volunteer:	Alan Able	Age:	44	Prior Lifetime	No
Employee ID:	00111			Emergency Exposure?	
Current Dose:	1775 mrem				

<b>JOB B</b>	<b>PURPOSE:</b> To rescue an unconscious worker in the Drywell. <b>DOSE RATE:</b> 32 R/hour. <b>JOB DURATION:</b> 50 minutes				
Volunteer:	Bob Blake	Age:	47	Prior Lifetime	Yes
Employee ID:	00222			Emergency Exposure?	27 Rem
Current Dose:	1050 mrem				

<b>JOB C</b>	<b>PURPOSE:</b> To close the RWCU isolation valve to stop flooding in the Reactor Building. <b>DOSE RATE:</b> 20 R/hour. <b>JOB DURATION:</b> 40 minutes				
Volunteer:	Chris Cat	Age:	40	Prior Lifetime	No
Employee ID:	00333			Emergency Exposure?	
Current Dose:	1350 mrem				

**AUTHORIZATION FOR EMERGENCY EXPOSURE**

Name: Alan Able Date / Time: Today Now

Employee ID Number: 00111 Current Annual Exposure: 1775 mrem

Reason for Request:

JOB A: To enter the Trunion Room to manually close the MSIVs to secure the steam leak  
into the Turbine Building.

**REQUESTING AUTHORIZATION TO EXCEED:**

☒ 5 REM TEDE (Authorized to receive greater than 5 Rem TEDE but less than 10 Rem TEDE)

☐ 10 REM TEDE (Authorized to receive greater than 10 Rem TEDE but less than 25 Rem TEDE)

☐ 25 REM TEDE (Authorized to receive greater than 25 Rem)

Alan Able

Today/Now

\* Emergency Worker Signature

Date / Time

\* Emergency Worker Exposure Limits and Associated Risks (EP-AA-113 Attachment 1) have been reviewed and the potential health affects are understood.

John Renda

Today/Now

Rad. Protection Management (Review)

Date / Time

Station Emergency Director (Authorization)

Date / Time

Authorize? Yes / No If NO, why not: \_\_\_\_\_

Your Name: \_\_\_\_\_

**AUTHORIZATION FOR EMERGENCY EXPOSURE**

Name: Bob Blake Date / Time: Today Now

Employee ID Number: 00222 Current Annual Exposure: 1050 mrem

Reason for Request:

JOB B: To rescue an unconscious worker in the Drywell.

**REQUESTING AUTHORIZATION TO EXCEED:**

☐ 5 REM TEDE (Authorized to receive greater than 5 Rem TEDE but less than 10 Rem TEDE)

☐ 10 REM TEDE (Authorized to receive greater than 10 Rem TEDE but less than 25 Rem TEDE)

☒ 25 REM TEDE (Authorized to receive greater than 25 Rem)

Bob Blake

Today/Now

\* Emergency Worker Signature

Date / Time

\* Emergency Worker Exposure Limits and Associated Risks (EP-AA-113 Attachment 1) have been reviewed and the potential health affects are understood.

John Renda

Today/Now

Rad. Protection Management (Review)

Date / Time

Station Emergency Director (Authorization)

Date / Time

Authorize? Yes / No If NO, why not:

Your Name: \_\_\_\_\_

**AUTHORIZATION FOR EMERGENCY EXPOSURE**

Name: Chris Cat Date / Time: Today Now

Employee ID Number: 00333 Current Annual Exposure: 1350 mrem

Reason for Request:

JOB C: To close the RWCU isolation valve to stop flooding in the Reactor Building.

**REQUESTING AUTHORIZATION TO EXCEED:**

☐ 5 REM TEDE (Authorized to receive greater than 5 Rem TEDE but less than 10 Rem TEDE)

☒ 10 REM TEDE (Authorized to receive greater than 10 Rem TEDE but less than 25 Rem TEDE)

☐ 25 REM TEDE (Authorized to receive greater than 25 Rem)

Chris Cat Today/Now

\* Emergency Worker Signature Date / Time

\* Emergency Worker Exposure Limits and Associated Risks (EP-AA-113 Attachment 1) have been reviewed and the potential health affects are understood.

John Renda Today/Now

Rad. Protection Management (Review) Date / Time

Station Emergency Director (Authorization) Date / Time

Authorize? Yes / No If NO, why not: \_\_\_\_\_

Your Name: \_\_\_\_\_

Facility: Oyster Creek Task No.: 2000502401Task Title: Determine Emergency Classification and Protective Action RecommendationsJob Performance Measure No.: NRC JPM ADMIN SRO5 (SRO)K/A Reference: Generic 2.4.29 (SRO 4.0)

Examinee: \_\_\_\_\_ Examiner: \_\_\_\_\_

Facility Evaluator: \_\_\_\_\_ Date: \_\_\_\_\_

Method of Testing:

Simulated Performance \_\_\_\_\_ Actual Performance XClassroom X Simulator \_\_\_\_\_ Plant \_\_\_\_\_*Read to the Examinee:*

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

## Initial Conditions:

The plant was at rated power when an automatic scram occurred 45 minutes ago. The following conditions currently exist:

- All but 8 control rods indicate full-in
- APRMs indicate downscale
- Reactor Engineering has determined that the reactor will remain shutdown under all conditions without boron
- RPV water level is -60" with Core Spray injecting
- Drywell pressure is 28 psig
- Drywell temperature is 270 °F
- Main Stack RAGEMS indicates 4.1 µCi/cc HRN
- Drywell hydrogen indicates 3.1%
- CHRRMS #1 indicates 1320 R/hr
- CHRRMS #2 is downscale due to a loss of power
- Dose assessment shows the highest dose at or beyond the site boundary is 115 mRem

Task Standard: The emergency has been classified and the PARs have been determined.

Required Materials: None.

General References:

1. EP-AA-1010, Radiological Emergency Plan Annex for Oyster Creek Station, revision 0.
2. EP-AA-111, Emergency Classification and Protective Action Recommendations, revision 13.
3. EP-AA-111-F-10, Oyster Creek Plant Based PAR Flowchart, revision A.

Initiating Cue: Classify the emergency event (include the EAL designation). State the reason for this classification.

Time Critical Task: Yes.

Validation Time: 12 minutes Part 1  
10 minutes Part 2

## Performance Information

*Denote critical steps with a check mark ✓*

Performance Step: 1

Procedure Step: Provides repeat back of initiating cue.

JPM Start Time: \_\_\_\_\_

**Standard:** Provides repeat back of initiating cue. *Evaluator acknowledges the repeat back. Handout first page of STUDENT HANDOUT.*

Comment: \_\_\_\_\_

SAT/UNSAT

✓

Performance Step: 2

Procedure Step: Classifies the emergency as a General Emergency (FG1).

**Standard:** Classifies the emergency as a General Emergency (FG1). This classification is made within 15 minutes from the JPM Start Time.  
Reasons: Loss of Fuel Clad barrier (RPV water level < -20"); Loss of Reactor Coolant barrier (RPV water level < 0"); and Potential Loss of Primary Containment barrier (CHRRMS > 1210 R/hr less than 2 hours after shutdown).

**Note:** Record time that the first page of the STUDENT HANOUT is received from each Candidate.

Comment: \_\_\_\_\_

SAT/UNSAT

STUDENT HANDOUTInitial Conditions:

The plant was at rated power when an automatic scram occurred 45 minutes ago. The following conditions currently exist:

- All but 8 control rods indicate full-in
- APRMs indicate downscale
- Reactor Engineering has determined that the reactor will remain shutdown under all conditions without boron
- RPV water level is -60" with Core Spray injecting
- Drywell pressure is 28 psig
- Drywell temperature is 270 °F
- Main Stack RAGEMS indicates 4.1 µCi/cc HRN
- Drywell hydrogen indicates 3.1%
- CHRRMS #1 indicates 1320 R/hr
- CHRRMS #2 is downscale due to a loss of power
- Dose assessment shows the highest dose at or beyond the site boundary is 115 mRem

Additional Initial Conditions:

- Environmental conditions show that the wind is from 50° at 20 mph
- There are no travel impediments
- There are no Sea Breezes

Task Cue: THIS IS A TIME CRITICAL JPM

Determine the Protective Action Recommendations (PARs).

Protective Action Recommendations:

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Name: \_\_\_\_\_

Time: \_\_\_\_\_

(NRC Only)



Facility: Oyster Creek Task No.: 2000301401Task Title: Complete the Technical Specifications Log SheetJob Performance Measure No.: NRC JPM ADMIN RO1 (RO)K/A Reference: Generic 2.1.18 (RO 2.9)

Examinee: \_\_\_\_\_ Examiner: \_\_\_\_\_

Facility Evaluator: \_\_\_\_\_ Date: \_\_\_\_\_

Method of Testing:

Simulated Performance \_\_\_\_\_ Actual Performance XClassroom \_\_\_\_\_ Simulator X Plant \_\_\_\_\_*Read to the Examinee:*

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

1. The plant is rated power.
2. You are the on-shift Reactor Operator on the 4-12 shift.
3. The current date/time is April 20, 2008 at 1700.

Task Standard: Page E1-1 of the Technical Specifications Log Sheet is correctly completed and the discrepancies are noted. No remarks are made of in-specification readings.

Required Materials: A completed page E1-1 (for the 11-7 and 7-3 shifts) of Procedure 681.4.004, Technical Specification Log Sheet.

General References:

1. Procedure 681.4.004, Technical Specifications Log Sheet, revision 12.

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Initiating Cue: Complete page E1-1 only of the Technical Specification Log Sheet, Procedure 681.4.004, Technical Specification Log Sheet. Notify the Unit Supervisor when complete and of any discrepancies or actions that may be required.

Time Critical Task: No.

Validation Time: 10 Minutes.

*Denote critical steps with a check mark ✓*

**Note 1:** The values may be recorded in any order.

**Note 2:** The discrepancies noted while completing the log may be reported at the time of discovery or some other time during the JPM.

**Note 3:** Hand the Candidate the partially completed procedure.

---

Performance Step: 1

Procedure Step: Provides repeat back of initiating cue.

Standard: Provides repeat back of initiating cue. *Evaluator acknowledges the repeat back.*

JPM Start Time: \_\_\_\_\_

Comment: \_\_\_\_\_

**SAT/UNSAT**

---

Performance Step: 2

Procedure Step: Records position of AOG valve V-7-31.

Standard: Records position of valve AOG V-7-31 as closed on Panel 10XF

Comment: \_\_\_\_\_

**SAT/UNSAT**

---

**Performance Step: 3**

Procedure Step: Records Torus water level from the following instruments:

- LT-37
- LT-38
- Narrow Range on Panel 9XR

Standard: Records Torus water level from the following instruments as on the KEY:

- LT-37 (Indicator on Panel 1F/2F)
- LT-38 (Indicator on Panel 1F/2F)
- Narrow Range Recorder on Panel 9XR

Comment:

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**SAT/UNSAT**

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**Performance Step: 4**

Procedure Step: Records Torus water temperature from the following indicators:

- DIV I
- DIV II

Standard: Records Torus water temperature from the following indicators as on the KEY: (Indicator on Panel 1F/2F)

- DIV I
- DIV II

Comment:

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**SAT/UNSAT**

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**Performance Step: 5**

Procedure Step: Records Isolation Condenser area temperatures from the following instruments:

- IB06A
- IB06B
- IB06C
- IB06D

Standard: Records Isolation Condenser area temperatures from the following instruments as on the KEY: (Panel 10R)

- IB06A
- IB06B
- IB06C
- IB06D

Comment:

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**SAT/UNSAT**

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**Performance Step: 6**

Procedure Step: Records Isolation Condenser levels from the following instruments:

- IG06A
- IG06B

Standard: Records Isolation Condenser levels from the following instruments as on the KEY: (Indicator on Panel 1F/2F)

- IG06A
- IG06B

Comment:

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**SAT/UNSAT**

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✓

## Performance Step: 7

Procedure Step: Record Nitrogen Makeup and calculate nitrogen use for the shift and for the day.

Standard: Records Nitrogen Makeup and calculates nitrogen use for the shift, as on the KEY.

Calculates and records nitrogen use for the day by subtracting the previous day 3-11 integrator reading from the current 3-11 integrator reading, as on the KEY.

Recognizes/reports that the daily nitrogen use is > 250 units.

Comment:

SAT/UNSAT

## Performance Step: 8

Procedure Step: Record RB 119' radiation levels from:

- Radiation monitor B-9
- Radiation monitor C-9

Standard: Records RB 119' radiation levels from:

- Radiation monitor B-9
- Radiation monitor C-9 as on the key.

Comment:

SAT/UNSAT

---

**Performance Step: 9****Procedure Step: Record RB Vent Radiation Monitor levels:**

- Radiation monitor Channel 1
- Radiation monitor Channel 2

**Standard:** Procedure Step: Records RB Vent Radiation Monitor levels:

- Radiation monitor Channel 1
- Radiation monitor Channel 2, as on the KEY.

**Comment:**  

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**SAT/UNSAT**

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**Performance Step: 10****Procedure Step: Record the Shutdown Cooling Room lowest temperature.****Standard:** Records the Shutdown Cooling Room lowest temperature, as on the KEY. (Panel 10R)**Comment:**  

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**SAT/UNSAT**

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Performance Step: 11Procedure Step: Calculate Fuel Pool Slab  $\Delta T$ 

Standard: Calculates Fuel Pool Slab  $\Delta T$  by subtracting the Shutdown Cooling Room temperature from the Fuel Pool temperature, as on the key.

Comment:

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**SAT/UNSAT**

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✓

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Performance Step: 12

Procedure Step: Record the previous day lowest Torus water level, today's highest Torus water level, and the differential.

Standard: Records the previous day lowest Torus water level, today's highest Torus water level, and the differential, as on the KEY. Reports the differential level is greater than allowed (actual is  $\leq$  0.2" allowed).

Cue: The previous day's lowest Torus water level from Panel 9XR is 150.0".

Comment:

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**SAT/UNSAT**

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**JPM Stop Time:** \_\_\_\_\_



## Validation of Completion

JPM Number: NRC JPM ADMIN RO1

Examinee's Name: \_\_\_\_\_

Examiner's Name: \_\_\_\_\_

Date Performed: \_\_\_\_\_

Facility Evaluator: \_\_\_\_\_

Number of Attempts: \_\_\_\_\_

Time to Complete: \_\_\_\_\_

Question:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Response:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Result: Satisfactory/Unsatisfactory

Examiner's Signature and Date: \_\_\_\_\_

Simulator Setup

1. Reset to full power IC-65
2. Insert the following:
  - a. SWI-RMS050A to 1.1 (RB 119 B9 rad)
  - b. SWI-RMS063A to 1.1 (RN 119 rad C9)
  - c. SWI-RMS066A to 1.0 (RB vent rad mon)
  - d. SWI-RMS067A to 1.0 (RB vent rad mon)
3. Have ready a 681.4.004 Attachment 1, completed for the 11-7 and 7-3 shifts (see Completed 681.4.004)

STUDENT HANDOUTInitial Conditions:

1. The plant is rated power.
2. You are the on-shift Reactor Operator on the 4-12 shift.
3. The current date/time is April 20, 2008 at 1700.

Task Cue:

Complete page E1-1 only of the Technical Specification Log Sheet, Procedure 681.4.004, Technical Specification Log Sheet. Notify the Unit Supervisor when complete and of any discrepancies or actions that may be required.

Title

Technical Specification Log Sheet

Revision No.

12

TECHNICAL SPECIFICATION LOG SHEET

ATTACHMENT 1

DATE	Today
------	-------

SHIFT	AOG	TORUS						SUB STATION
	V-7-31	LEVEL (9XR)			Normal ≥144" ≤153" For Limit See Attachment 312.9-7	TEMP		Tour***  (I)  BB
	Closed	LT-37	LT-38	NARROW		Div I	Div II	
11-7	Closed	152	152	150.2		82	82	
7-3	Closed	152	152	150.3		82	82	
3-11	Closed	152	152	150.4		82	82	

SHIFT	Isolation Condenser						Limit ≥7.3'
	Area Temps (10R)				Level (1F 2F)		
	IB06A	IB06B	IB06C	IB06D	IG06A	IG06B	
11-7	75	74	73	74	7.7	7.5	
7-3	75	74	73	74	7.7	7.5	
3-11	75	74	73	74	7.7	7.5	
Temp <65°F – Action 6							

Nitrogen Make-up **			
Shift	Integrator	Units Differ.	Limit <250 Units
Prev. 3-11	0816299		
11-7	0816389	90	
7-3	0816489	100	
3-11	0816569	80	
Daily: (3-11) - (prev. 3-11)			270 VIOLATED

SHIFT	R.B. El. 119'			RB Vent Rad (Meters)		SD Hx RM Temp Low	Fuel Pool Slab ΔT	Previous Day's Lowest Torus Level	current Day's Highest Torus Level	Differential Level in the Torus
	B-9	C-9		CH1	CH2		Limit < 50°++			
11-7	1.0	1.0	Var 50 mR/Hr Max 100 mR/Hr	1.0	1.0	Var 9 mR/Hr Max 17 MR/Hr	69	27		
7-3	1.0	1.0		1.0	1.0		69	27		
3-11	1.0	1.0		1.0	1.0		69	27		
								9XR	9XR	Limit ≤ .2"
								150.0	150.4	0.4 VIOLATED

SHIFT	Elev. 119'		EDG		Comments:
	Fuel Pool		Fuel Oil Tank		
	Temp		Lvl.		
7-3	96	Limit ≤125° F	14950	Limit ≥14K Gal.	NOTE: Red readings indicate values to place on the Log Sheet provided to the Candidate
					Blue readings are those expected readings taken by the Candidate in IC-65.
					Exceeded Limits: Nitrogen Makeup > 250 units Exceeded Limits: Differential Level in the Torus >0.2"

TIME	Identified Leakage (DWEDT)*				Unidentified Leakage (1-8 Sump & Torus)*							Total DW Leak	
	Integ	Δ Min.	GPM	Limit	Integ	Δ Min.	1-8	Identified Leakage Adjust.*	Torus Unexp Lkge	Total	Limits	Time	GPM
0 Hr	135671	XXXXX	XXXX	≤20.0	211324	XX	GPM	GPM	GPM	GPM	5.0 GPM	0 Hr	XXXX
4 Hr	136781	240	4.25	gpm or	211604	240	1.17	0	0.01	1.18	Or	4 Hr	5.43
8 Hr	137769	240	4.12	3.0 gpm	211892	240	1.20	0	0.01	1.21	>2.0 GPM	8 Hr	5.33
12 Hr	138769	240	4.17	with both	212157	240	1.10	0	0.01	1.11	Increase	12 Hr	5.28
16 Hr	139779	240	4.21	DWEDT	212442	240	1.19	0	0.01	1.20	In any	16 Hr	5.41
20 Hr				pumps							24 Hr.	20 Hr	
24 Hr				inop.							Period	24 Hr	

Refer to actions of Tech Spec 3.3.D

Limit <25 gpm

Previous Day's lowest 4 hour unidentified leakage from the 1-8 sump 1.18 gpm

- \* Calculated in accordance with Procedure 312.9 which also contains notification requirements.
- \*\* Calculated in accordance with Procedure 312.11
- \*\*\* Conducted in accordance with 681.4.005. NA when generator is off line.
- \*\*\*\* Maximum 3°F difference between various Torus temperature indications.
- + If both DWEDT pumps are inoperable, use 3.0 gpm for identified leakage and subtract from the 1-8 value (Procedure 312.9). If DWEDT pump(s) are operable, enter zero (0).

Facility: Oyster Creek Task No.: 2000101404Task Title: Perform a Manual Core Heat Balance CalculationJob Performance Measure No.: NRC JPM ADMIN RO2 (RO)K/A Reference: Generic 2.1.20 (RO 4.3)

Examinee: \_\_\_\_\_ Examiner: \_\_\_\_\_

Facility Evaluator: \_\_\_\_\_ Date: \_\_\_\_\_

Method of Testing:

Simulated Performance \_\_\_\_\_ Actual Performance XClassroom X Simulator \_\_\_\_\_ Plant \_\_\_\_\_*Read to the Examinee:*

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

1. The reactor has been steady at full power for several hours.
2. The PPC is currently unavailable.
3. All prerequisites to perform this procedure have been met.
4. Calculating RWCU system differential temperature is not required.
5. The following indications are provided:
  - a. APRMs indicate 100% power
  - b. RPV water level instrument NR GEMAC indicates 161"
  - c. Local total Feedwater  $\Delta P$  from the venturi transmitter (FT-422-1) indicates 492.5 inches of water
  - d. Core  $\Delta P$  indicates 16.5 psid
  - e. Reactor pressure (NR recorder Panel 5F/6F) indicates 1020 psig
  - f. Feedwater temperature (recorder Panel 5F/5F) indicates 311 °F
  - g. Total steam flow (recorder Panel 5F/6F) indicates 7.1 Mlb/hr
  - h. Total recirculation flow (recorder Panel 3F) indicates  $15 \times 10^4$  gpm
  - i. RWCU flow (recorder Panel 3F) indicates 400 gpm

---

Task Standard: A manual core heat balance has been completed IAW Procedure 1001.6, Core Heat Balance and Feedwater Flow Calculation – Power Range.

Required Materials: Calculator.

General References:

1. Procedure 1001.6, Core Heat Balance and Feedwater Flow Calculation – Power Range, revision 27.

Initiating Cue: Calculate core thermal power (CTP) IAW Procedure 1001.6, Core Heat Balance and Feedwater Flow Calculation – Power Range.

Time Critical Task: No.

Validation Time: 19 minutes

---

Performance Information

*Denote critical steps with a check mark ✓*

---

Performance Step: 1

---

Procedure Step: Provides repeat back of initiating cue.

**JPM Start Time:** \_\_\_\_\_

**Standard:** Provides repeat back of initiating cue. *Evaluator acknowledges the repeat back.*

Comment:

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**SAT/UNSAT**

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---

Performance Step: 2

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Procedure Step: Reviews Precautions and Limitations.

**Standard:** Reviews Precautions and Limitations.

Comment:

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**SAT/UNSAT**

---

**Note:** The expected values are provided in the KEY.

## Performance Information

✓

## Performance Step: 3

## Procedure Step: 5.1.1.1

Records local total Feedwater  $\Delta P$  in inches of water from the venture transmitter (FT-422-1) in the Feedwater Pump Room.

**Standard:** Directs EO to read local total Feedwater  $\Delta P$  in inches of water from the venture transmitter (FT-422-1) in the Feedwater Pump Room, and records on the Feedwater Flow Calculation Worksheet, Line A.

**Cue:** As the EO, report reading on the venture transmitter (FT-422-1) in the Feedwater Pump Room as 492.5 inches.

Comment:

SAT/UNSAT

✓

## Performance Step: 4

## Procedure Step: 5.1.1.2

Record Feedwater temperature (ID 101) from Panel 5F/6F recorder to the nearest whole degree.

**Standard:** Reads Feedwater temperature (ID 101) from Panel 5F/6F recorder to the nearest whole degree and records on the Feedwater Flow Calculation Worksheet, Line B.

Comment:

SAT/UNSAT



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Performance Information

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✓

## Performance Step: 5

## Procedure Step: 5.1.1.3

Obtain the specific volume (v) at the Feedwater at 1100 psia and the temperature recorded in Step 5.1.1.2 from Attachment 1001.6-3 or ASME approved steam tables.

**Standard:** Obtain the specific volume (v) at the Feedwater at 1100 psia and the temperature recorded in Step 5.1.1.2 from Attachment 1001.6-3 or ASME approved steam tables, and records on the Feedwater Flow Calculation Worksheet, Line C.

Comment:

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SAT/UNSAT

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✓

## Performance Step: 6

## Procedure Step: 5.1.1.4

Calculates total Feedwater flow using the following equation:

$$F = 0.0429387 \text{ SQRT } (\Delta P/v)$$

**Standard:** Calculates total Feedwater flow using the following equation:  
 $F = 0.0429387 \text{ SQRT } (\Delta P/v)$  and records on the Feedwater Flow Calculation Worksheet, Line D.

Comment:

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SAT/UNSAT

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Performance Information

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✓

Performance Step: 7

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## Procedure Step: 5.2.1

Record reactor pressure to the nearest whole pound (Narrow range recorder – Panel 5F/6F)

**Standard:** Reads reactor pressure to the nearest whole pound (Narrow range recorder – Panel 5F/6F) and records on the Heat Balance Data, Calculation, and Analysis Worksheet, Line A.

Comment:

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**SAT/UNSAT**

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✓

Performance Step: 8

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## Procedure Step: 5.2.2

Record Feedwater temperature to the nearest whole degree (Recorder Panel 5F/6F)

**Standard:** Reads Feedwater temperature to the nearest whole degree (Recorder Panel 5F/6F) or transfers the Feedwater temperature obtained earlier, and records on the Heat Balance Data, Calculation, and Analysis Worksheet, Line B.

Comment:

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**SAT/UNSAT**

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Performance Information

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✓

## Performance Step: 9

## Procedure Step: 5.2.3

Record recirculation flow to the nearest thousand gpm (Recorder Panel 3F).

**Standard:** Reads recirculation flow to the nearest thousand gpm (Recorder Panel 3F), and records on the Heat Balance Data, Calculation, and Analysis Worksheet, Line C.

Comment:

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**SAT/UNSAT**

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✓

## Performance Step: 10

## Procedure Step: 5.2.4

Calculate the reactor absolute pressure by adding the value of step 5.2.1 + 14.7 pounds pressure.

**Standard:** Calculate the reactor absolute pressure by adding the value of step 5.2.1 + 14.7 pounds pressure, and records on the Heat Balance Data, Calculation, and Analysis Worksheet, Line D.

Comment:

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**SAT/UNSAT**

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Performance Information

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✓

Performance Step: 11

Procedure Step: 5.2.5

Record Main Steam enthalpy from Attachment 1001.6-5 or an ASME approved steam table, at saturated conditions using calculated absolute pressure.

**Standard:** Reads Main Steam enthalpy from Attachment 1001.6-5 or an ASME approved steam table, at saturated conditions using calculated absolute pressure in step 5.2.4 and records on the Heat Balance Data, Calculation, and Analysis Worksheet, Line E.

Comment:

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SAT/UNSAT

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✓

Performance Step: 12

Procedure Step: 5.2.6

Record the Feedwater enthalpy from Attachment 1001.6-6 or ASME approved steam table for compressed water at 1100 psia using Feedwater temperature.

**Standard:** Reads the Feedwater enthalpy from Attachment 1001.6-6 or ASME approved steam table for compressed water at 1100 psia using Feedwater temperature in step 5.2.2, and records on the Heat Balance Data, Calculation, and Analysis Worksheet, Line F.

Comment:

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SAT/UNSAT

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Performance Information

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✓

Performance Step: 13

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## Procedure Step: 5.2.7

Calculate the difference of the Main Steam and Feedwater enthalpies.

**Standard:** Calculates the difference of the Main Steam and Feedwater enthalpies by subtracting Feedwater enthalpy in step 5.2.6 from Main Steam enthalpy in step 5.2.5, and records on the Heat Balance Data, Calculation, and Analysis Worksheet, Line G.

Comment:

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**SAT/UNSAT**

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✓

Performance Step: 14

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## Procedure Step: 5.2.8

Record total Feedwater flow FLO (tot) for differential pressure 3 loop and/or local venture (single element) methods from the Feedwater Flow Calculation Worksheet.

**Standard:** Copies total Feedwater flow FLO (tot) for differential pressure 3 loop and/or local venture (single element) methods from the Feedwater Flow Calculation Worksheet, Line D, onto the Heat Balance Data, Calculation, and Analysis Worksheet, Line H.

Comment:

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**SAT/UNSAT**

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Performance Information

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✓

Performance Step: 15

Procedure Step: 5.2.9

Calculate the product of the Feedwater flow and the enthalpy difference to obtain MBTU/hr.

**Standard:** Calculates the product of the Feedwater flow in step 5.2.8 and the enthalpy difference in step 5.2.7 to obtain MBTU/hr, and records on the Heat Balance Data, Calculation, and Analysis Worksheet, Line I.

Comment:

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SAT/UNSAT

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✓

Performance Step: 16

Procedure Step: 5.2.10

Convert MBTU/hr to Megawatts (MBTU/hr x 0.293).

**Standard:** Converts MBTU/hr to Megawatts by multiplying MBTU/hr in step 5.2.9 by 0.293, records on the Heat Balance Data, Calculation, and Analysis Worksheet, Line J.

Comment:

---

SAT/UNSAT

---

## Performance Information

✓

## Performance Step: 17

## Procedure Step: 5.2.11

Record RWCU flow to the nearest gpm (recorder Panel 3F) on Line K of Attachment 1001.6-2.

**Standard:** Reads RWCU flow to the nearest gpm (recorder Panel 3F) and records on the Heat Balance Data, Calculation, and Analysis Worksheet, Line K.

Comment:

SAT/UNSAT

✓

## Performance Step: 18

## Procedure Step: 5.2.12

Calculate the CRD, recirc. pump power, RWCU and ambient losses adjustment (Fixed Losses), per the following equation. Enter the appropriate value for Fixed Losses on Line L of Attachment 1001.6-2.

$$\text{Fixed Losses} = [(K) \times 0.0136] + 9.0$$

**Standard:** Calculates the CRD, recirc. pump power, RWCU and ambient losses adjustment (Fixed Losses), per the following equation, and records on the Heat Balance Data, Calculation, and Analysis Worksheet, Line L.

$$\text{Fixed Losses} = [(\text{Line K}) \times 0.0136] + 9.0$$

Comment:

SAT/UNSAT

---

Performance Information

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✓

## Performance Step: 19

## Procedure Step: 5.2.13

Add the Fixed Losses from Line L to the Megawatts from Line J and record the Calculated CTP on Line N.

**Standard:** Adds the Fixed Losses from step 5.2.12 to the Megawatts from step 5.2.10 and record the Calculated CTP on Line N on the Heat Balance Data, Calculation, and Analysis Worksheet.

Comment:

---

SAT/UNSAT

---

## Performance Step: 20

## Procedure Step: 5.2.14

Record PPC Core Thermal Power (CTP) in Line M.

**Standard:** This step is NA since the PPC is unavailable.

Comment:

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SAT/UNSAT

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Performance Information

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Performance Step: 21

Procedure Step: 5.2.15

Subtract the Calculated CTP from the PPC Core Thermal Power [Line M – Line N]. If this value is positive, the comparison is considered conservative. If negative, the comparison is non-conservative. Place an X in the appropriate box.

**Standard:** This step is NA since the PPC is unavailable.

Comment:

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**SAT/UNSAT**

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**JPM Stop Time:** \_\_\_\_\_

## Validation of Completion

JPM Number: NRC JPM ADMIN RO2

Examinee's Name: \_\_\_\_\_

Examiner's Name: \_\_\_\_\_

Date Performed: \_\_\_\_\_

Facility Evaluator: \_\_\_\_\_

Number of Attempts: \_\_\_\_\_

Time to Complete: \_\_\_\_\_

Question:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Response:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Result: Satisfactory/Unsatisfactory

Examiner's Signature and Date: \_\_\_\_\_

Simulator Setup

1. None.

STUDENT HANDOUTInitial Conditions:

1. The reactor has been steady at full power for several hours.
2. The PPC is currently unavailable.
3. All prerequisites to perform this procedure have been met.
4. Calculating RWCU system differential temperature is not required.
5. The following indications are provided:
  - a. APRMs indicate 100% power
  - b. RPV water level instrument NR GEMAC indicates 161"
  - c. Local total Feedwater  $\Delta P$  from the venturi transmitter (FT-422-1) indicates 492.5 inches of water
  - d. Core  $\Delta P$  indicates 16.5 psid
  - e. Reactor pressure (NR recorder Panel 5F/6F) indicates 1020 psig
  - f. Feedwater temperature (recorder Panel 5F/5F) indicates 311 °F
  - g. Total steam flow (recorder Panel 5F/6F) indicates 7.1 Mlb/hr
  - h. Total recirculation flow (recorder Panel 3F) indicates  $15 \times 10^4$  gpm
  - i. RWCU flow (recorder Panel 3F) indicates 400 gpm

Task Cue:

Calculate core thermal power (CTP) IAW Procedure 1001.6, Core Heat Balance and Feedwater Flow Calculation – Power Range.

ATTACHMENT 1001.6-1

**FEEDWATER FLOW CALCULATION WORKSHEET**

*Data Collection and Calculations ( print / sign)*

<b>Preparer:</b>	<b>Date:</b>	<b>Time:</b>	<b>Prerequisites met:</b>	<b>Initials</b>
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**Method 1: Total Flow Venturi Calculation**

<b>A</b>	<b>5.1.1.1</b>	DP From Total Flow Venturi Transmitter (FT-422-1)	Local Transmitter DP Reading	<b>492.5</b>	in H <sub>2</sub> O
<b>B</b>	<b>5.1.1.2</b>	Feedwater Temperature (ID 101)	Panel 5F/6F Recorder	<b>311</b>	deg F
<b>C</b>	<b>5.1.1.3</b>	Specific Volume at 1100 psia and (B)	Attachment 1001.6-3 or ASME Steam Tables	<b>0.01748</b>	ft <sup>3</sup> /lbm
<b>D</b>	<b>5.1.1.4</b>	<b>TOTAL FEEDWATER FLOW</b>	$F_T = 0.0429387 \times \text{SQRT}[(A) / (C)]$	<b>7.207</b>	Mlbm/hr

**NOTE: Items in RED are the expected responses from the Candidates. Small variations from rounding may occur.**

**Method 2: 3 Loop Flow Calculation**

Method 2: 3 Loop Flow Calculation			A Loop		B Loop		C Loop		
E	5.1.2.1	Feedwater Pump Room Nozzle DP Gauges (RV45)	D =	A =	B =	E =	C =	F =	in H <sub>2</sub> O
F	5.1.2.2	Average Nozzle DP							in H <sub>2</sub> O
G	5.1.2.3	Loop Temperature: Recorder 13R-005	Pos 15 =		Pos 16 =		Pos 17 =		deg F
H	5.1.2.4	Loop Specific Volume at 1400 psia: Attachment 1001.6-4 or ASME Steam Tables							ft <sup>3</sup> /lbm
I	5.1.2.5	Nozzle Discharge Coefficient x Conversion Factor	0.02252		0.02291		0.02269		
J	5.1.2.5	Loop Flow: = (I) x SQRT[(F) / (H)]	F <sub>A</sub> =		F <sub>B</sub> =		F <sub>C</sub> =		Mlbm/hr
K	5.1.2.6	TOTAL FEEDWATER FLOW	F <sub>T</sub> = F <sub>A</sub> + F <sub>B</sub> + F <sub>C</sub>						Mlbm/hr

**Comments:**

**HEAT BALANCE DATA, CALCULATION, AND ANALYSIS WORKSHEET**

<b>A</b>	<b>5.2.1</b>	Reactor Pressure (ID-45)	Panel 5F/6F Narrow Range Recorder	<b>1020</b>	psig
<b>B</b>	<b>5.2.2</b>	Feedwater Temperature (ID 101)	Panel 5F/6F Recorder	<b>311</b>	deg F
<b>C</b>	<b>5.2.3</b>	Recirculation Flow	Panel 3F Recorder	<b>15</b>	10 <sup>4</sup> gpm
<b>D</b>	<b>5.2.4</b>	Reactor Absolute Pressure	(A) + 14.7	<b>1034.7</b>	psia
<b>E</b>	<b>5.2.5</b>	Main Steam Enthalpy (h <sub>MS</sub> )	Attachment 1001.6-5 or ASME Steam Tables	<b>1191.61</b>	BTU/lbm
<b>F</b>	<b>5.2.6</b>	Feedwater Enthalpy (h <sub>FW</sub> )	Attachment 1001.6-6 or ASME Steam Tables	<b>282.91</b>	BTU/lbm
<b>G</b>	<b>5.2.7</b>	Enthalpy Difference (h <sub>MS</sub> - h <sub>FW</sub> )	(E) - (F)	<b>908.7</b>	BTU/lbm
<b>H</b>	<b>5.2.8</b>	Total Feedwater Flow	Attachment 1001.6-1, (D) or (K)	<b>7.207</b>	Mlbm/hr
<b>I</b>	<b>5.2.9</b>	Feedwater Flow x Enthalpy Difference	(H) x (G)	<b>6549.00</b>	MBTU/hr
<b>J</b>	<b>5.2.10</b>	Conversion to MW <sub>TH</sub>	0.293 x (I)	<b>1918.857</b>	MW <sub>TH</sub>
<b>K</b>	<b>5.2.11</b>	RWCU Flow	Panel 3F Recorder	<b>400</b>	gpm
<b>L</b>	<b>5.2.12</b>	Fixed Losses	[(K) x 0.0136] + 9.0	<b>14.44</b>	MW <sub>TH</sub>
<b>M</b>	<b>5.2.14</b>	PPC Core Thermal Power (CTP)	PPC CTP 15 Minute Average		MW <sub>TH</sub>
<b>N</b>	<b>5.2.13</b>	Calculated Core Thermal Power	(J) + (L)	<b>1933.297</b>	MW <sub>TH</sub>
<b>O</b>	<b>5.2.15</b>	Core Thermal Power Comparison	(M) - (N)	<div>Positive Value → Conservative</div> <div>Negative Value → Non-Conservative</div>	MW <sub>TH</sub>

Comments:

Approval ( print / sign )

US/SM:	Date:	Time:
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Facility: Oyster Creek Task No.: 2150101023Task Title: Perform APRM Drawer CountJob Performance Measure No.: NRC JPM ADMIN RO3 (RO)K/A Reference: Generic 2.2.12 (RO 3.0)

Examinee: \_\_\_\_\_ Examiner: \_\_\_\_\_

Facility Evaluator: \_\_\_\_\_ Date: \_\_\_\_\_

Method of Testing:

Simulated Performance \_\_\_\_\_ Actual Performance XClassroom \_\_\_\_\_ Simulator X Plant \_\_\_\_\_*Read to the Examinee:*

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

1. The plant is at rated power.

Task Standard: Section 2 of Attachment 202.1-1, APRM Status Check, for APRM 8 is complete and LPRM 44-25D does not indicate bypassed.

Required Materials: A completed attachment 403-2, with no APRMs bypassed, and LPRMs 36-17B, 28-09D and 44-25D shown as bypassed.

General References:

1. Procedure 202.1, Power Operation, revision 109.
2. Procedure 403, LPRM-APRM System Operations, revision 13.

Initiating Cue: Perform Section 2 of Attachment 202.1-1, APRM Status Check, for APRM 8. Notify the Unit Supervisor of your results.

Time Critical Task: No.

Validation Time: 13 minutes

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Performance Information

*Denote critical steps with a check mark ✓*

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Performance Step: 1

Procedure Step: Provides repeat back of initiating cue.

**JPM Start Time:** \_\_\_\_\_

**Standard:** Provides repeat back of initiating cue. *Evaluator acknowledges the repeat back. Provide the Candidate Section 2 of Attachment 202.1-1 and Attachment 403-2.*

Comment:

**SAT/UNSAT**

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Performance Step: 2

Procedure Step: 1 of Attachment 202.1-1.

Place an X in the box next to the LPRMs that are Bypassed.

**Standard:** Places an X in the box next to LPRMs 36-17B, 28-09D, and 44-25D in the APRM 8 column.

Comment:

**SAT/UNSAT**

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Performance Information

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Performance Step: 3

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Procedure Step: 2 of Attachment 202.1-1.

Place the number of un-bypassed inputs in the last row.

**Standard:** Places the number of un-bypassed inputs (5) in the last row for APRM 8, marked UN-BYPASSED.Comment:  

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**SAT/UNSAT**

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Performance Step: 4

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Procedure Step: 5.3.3.8.1 of Procedure 403.

Obtains permission from the US for LPRM input to APRM drawer count.

**Standard:** Obtains permission from the US for LPRM input to APRM drawer count.**CUE:** The candidate may or may not ask permission since he was directed to perform the task. If the candidate does ask, state that they have permission to perform the APRM drawer count.Comment:  

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**SAT/UNSAT**

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Performance Information

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✓

## Performance Step: 5

Procedure Step: 5.3.3.8.2 of Procedure 403.

Bypass the APRM channel if allowed by Attachment 403-2.

**Standard:** Verifies that Attachment 403-2 allows bypass of APRM 8. Places the APRM BYPASS joystick to the CH 8 position (critical step). Verifies APRM 8 HI-HI, HIGH, and DN SCL OR INOP lights ON.

Comment: \_\_\_\_\_  
\_\_\_\_\_

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SAT/UNSAT

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✓

## Performance Step: 6

Procedure Step: 5.3.3.8.3 of Procedure 403.

Rotate drawer INPUT switch clockwise to COUNT.

**Standard:** Rotates APRM 8 drawer INPUT switch clockwise to COUNT.

**Note/Cue:** Based upon the initial drawer indication, the count indication should display 50 when placed in count, but will show 60 (ie, only 2 LPRMs are bypassed). The candidate may mention this result now and may stop the test. Acknowledge the report and direct the candidate to continue the test.

Comment: \_\_\_\_\_  
\_\_\_\_\_

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SAT/UNSAT

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Performance Information

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✓

## Performance Step: 7

Procedure Step: 5.3.3.8.3.a of Procedure 403.

Continue to rotate input switch clockwise to read LPRM values input to the APRM drawer.

**Standard:** Continues to rotate APRM 8 drawer input switch clockwise to position 8, position 7, etc., up to position 1 to read LPRM values input to the APRM drawer.

**Note/Cue:** Positions 1 and 6 will indicate 0 due to being bypassed from the APRM. Position 7 should show 0, but will indicate a reading similar to the other LPRMs not bypassed. All other positions will show the LPRM reading input (not 0). The candidate may mention this result now and may stop the test. Acknowledge the report and direct the candidate to continue the test.

Comment:  

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**SAT/UNSAT**

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✓

## Performance Step: 8

Procedure Step: 5.3.3.8.3.b of Procedure 403.

Rotate input switch clockwise until AVERAGE is selected.

**Standard:** Rotates APRM 8 drawer input switch clockwise until AVERAGE is selected.

Comment:  

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**SAT/UNSAT**

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Performance Information

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✓

## Performance Step: 9

Procedure Step: 5.3.3.8.3.c of Procedure 403.

Un-bypass the APRM channel if the APRM channel was bypassed.

**Standard:** Un-bypass APRM 8 by placing the ARPM BYPASS joystick to the mid-position (critical step). Verifies APRM 8 HI-HI, HIGH, and DN SCL OR INOP lights OFF.

Comment:

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SAT/UNSAT

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Performance Step: 10

Procedure Step: 5.3.3.8.4 of Procedure 403.

Repeat 5.3.3.8(2) through 5.3.3.8(3c) for other APRMS as required.

**Cue:** No other APRMS testing is required.

**Standard:** Determines no other APRMs will be tested..

Comment:

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SAT/UNSAT

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Performance Information

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Performance Step: 11

Procedure Step: 5.3.3.8.5 of Procedure 403.

Verify all drawers INPUT switches in AVERAGE.

**Standard:** Verifies all drawers INPUT switches in AVERAGE.Comment: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_**SAT/UNSAT**

✓

Performance Step: 12

Procedure Step: 4 of Attachment 202.1-1.

Verify number of inputs correct.

**Standard:** Verifies number of inputs correct. The candidate should state, if not done already, that the number of inputs (6) does not match the expected number of inputs (5).**Cue:** Acknowledge the report.Comment: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_**SAT/UNSAT**

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Performance Information

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✓

Performance Step: 13

Procedure Step: 5 of Attachment 202.1-1.

Verify bypassed LPRM inputs are correct.

**Standard:** Verifies bypassed LPRM inputs are correct. The candidate should state, if not done already, that LPRM 44-25D is does not show bypassed.

**Cue:** Acknowledge the report.

**Comment:**

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**SAT/UNSAT****JPM Stop Time:** \_\_\_\_\_

## Validation of Completion

JPM Number: NRC JPM ADMON RO3

Examinee's Name: \_\_\_\_\_

Examiner's Name: \_\_\_\_\_

Date Performed: \_\_\_\_\_

Facility Evaluator: \_\_\_\_\_

Number of Attempts: \_\_\_\_\_

Time to Complete: \_\_\_\_\_

Question:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Response:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Result: Satisfactory/Unsatisfactory

Examiner's Signature and Date: \_\_\_\_\_

Simulator Setup

1. Reset to full power IC-65.
2. Bypass LPRM 36-17B from APRM 8 (red knob and silver toggle).
3. Bypass LPRM 28-09D from APRM 8 (red knob and silver toggle).
4. Insert the following:
  - a. SWI-NIS153T to ON; This will light the BYPASS white light for LPRM 44-25D on APRM 8 drawer (DON'T NEED red)
  - b. SWI-NIS153CR to OFF; This will stick the bypass switch for LPRM 44-25D to the un-bypassed position. (Not required)
  - c. IND-NIS020B to ON; This will place LPRM 44-25D amber light to ON on Panel 4F.
5. Have a blank copy of just attachment 202.1-1 Section 1 and 2 (pages E1-1 and E1-2), with APRMs 1-7 N/A'd.
6. Have a copy of 403 Section 5.3, completed and NA as appropriate up to the COUNT section: section 5.3.3.8.
7. Have a completed attachment 403-2 with the LPRMs marked.
8. Close APRM drawers.



STUDENT HANDOUTInitial Conditions:

1. The plant is at rated power.

Task Cue:

Perform Section 2 of Attachment 202.1-1, APRM Status Check, for APRM 8.  
Notify the Unit Supervisor of your results.

Facility: Oyster Creek Task No.: 2000501433Task Title: Determine RPV Water Level Instrument AvailabilityJob Performance Measure No.: NRC JPM ADMIN RO4 (RO)K/A Reference: Generic 2.4.21 (RO 3.7)

Examinee: \_\_\_\_\_ Examiner: \_\_\_\_\_

Facility Evaluator: \_\_\_\_\_ Date: \_\_\_\_\_

Method of Testing:

Simulated Performance \_\_\_\_\_ Actual Performance XClassroom X Simulator \_\_\_\_\_ Plant \_\_\_\_\_*Read to the Examinee:*

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

1. The Plant was at rated power when a LOCA occurred in the Primary Containment.
2. The Primary Containment Control EOP has been entered.
3. RPV pressure is 200 psig and stable.
4. The table below contains data recorded from Recorder TR-IA55 on Panel 8R, for the instrument reference leg vertical run temperatures, along with the current water level indications:

<u>Level Instrument</u>	<u>RPV Water Level Reading</u>	<u>Temp. Instrument No.</u>	<u>Recorder Point</u>	<u>Temperature °F</u>
NR GEMAC A	89"	TE-103-450	40	340
NR GEMAC B	91"	TE-103-451	41	335
WR GEMAC	130"	TE-103-452	42	360
YARWAY A	84"	TE-103-453	43	405
YARWAY B	83"	TE-103-454	44	375

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Task Standard: IAW the reference provided, the Candidate has determined that only NR GEMAC B is available for RPV water level indication.

Required Materials: None.

General References:

1. EMG-SP28, Level Instrumentation Availability, revision 0.

Initiating Cue: IAW EMG-SP28, Level Instrumentation Availability, and the information provided, state whether each RPV water level instrument is available for RPV water level indication or is not available.

Time Critical Task: No.

Validation Time: 7 minutes

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Performance Information

*Denote critical steps with a check mark ✓*

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Performance Step: 1

Procedure Step: Provides repeat back of initiating cue.

**JPM Start Time:** \_\_\_\_\_

**Standard:** Provides repeat back of initiating cue. *Evaluator acknowledges the repeat back.*

Comment: \_\_\_\_\_  
\_\_\_\_\_

**SAT/UNSAT** \_\_\_\_\_

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✓

Performance Step: 2

Procedure Step: 3.4

Verify that the instrument reference leg temperatures are in the SAFE REGION of the RPV Saturation Temperature Curve.

**Standard:** Compares the provided reference leg temperatures for all level instruments at the given RPV pressure against the RPV Saturation Temperature curve. Determines that YARWAY A is not in the SAFE REGION and thus is not available for RPV water level instrumentation.

Comment: \_\_\_\_\_  
\_\_\_\_\_

**SAT/UNSAT** \_\_\_\_\_

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Performance Information

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✓

## Performance Step: 3

## Procedure Step: 3.5

For each instrument below, the instrument reads in the Safe Region of its respective curve.

**Standard:** Compares the NR GEMAC A and NR GEMAC B indicated water levels at the given reference leg temperatures on the GEMAC NARROW RANGE curve. Determines that NR GEMAC A is not in the Safe Region and thus is not available for RPV water level instrumentation.

Determines that NR GEMAC B is in the Safe Region and thus is available for RPV water level instrumentation.

Comment:

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SAT/UNSAT

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✓

## Performance Step: 4

## Procedure Step: 3.5

For each instrument below, the instrument reads in the Safe Region of its respective curve.

**Standard:** Compares the YARWAY B indicated water level at the given reference leg temperatures on the YARWAY curve. Determines that YARWAY B is not in the Safe Region and thus is not available for RPV water level instrumentation.

Comment:

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SAT/UNSAT

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Performance Information

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✓

Performance Step: 5

Procedure Step: 3.5

For each instrument below, the instrument reads in the Safe Region of its respective curve.

**Standard:** Compares the WR GEMAC indicated water level at the given reference leg temperatures on the GEMAC Wide Range curve. Determines that WR GEMAC is not in the Safe Region and thus is not available for RPV water level instrumentation.

Comment:

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SAT/UNSAT

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JPM Stop Time: \_\_\_\_\_

## Validation of Completion

JPM Number: NRC JPM ADMIN RO4

Examinee's Name: \_\_\_\_\_

Examiner's Name: \_\_\_\_\_

Date Performed: \_\_\_\_\_

Facility Evaluator: \_\_\_\_\_

Number of Attempts: \_\_\_\_\_

Time to Complete: \_\_\_\_\_

Question:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Response:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Result: Satisfactory/Unsatisfactory

Examiner's Signature and Date: \_\_\_\_\_

Simulator Setup

1. None.
2. Have a blank copy of Support Procedure 28, EMG-SP28, Level Instrumentation Availability ready.



STUDENT HANDOUTInitial Conditions:

1. The Plant was at rated power when a LOCA occurred in the Primary Containment.
2. The Primary Containment Control EOP has been entered.
3. RPV pressure is 200 psig and stable.
4. The table below contains data recorded from Recorder TR-IA55 on Panel 8R, for the instrument reference leg vertical run temperatures, along with the current water level indications:

<u>Level Instrument</u>	<u>RPV Water Level Reading</u>	<u>Temp. Instrument No.</u>	<u>Recorder Point</u>	<u>Temperature °F</u>
NR GEMAC A	89"	TE-103-450	40	340
NR GEMAC B	91"	TE-103-451	41	335
WR GEMAC	130"	TE-103-452	42	360
YARWAY A	84"	TE-103-453	43	405
YARWAY B	83"	TE-103-454	44	375

Task Cue:

IAW EMG-SP28, Level Instrumentation Availability, and the information provided, state whether each RPV water level instrument is available for RPV water level indication or is not available.

<u>Level Instrument</u>	<u>Available? Yes/No</u>
NR GEMAC A	
NR GEMAC B	
WR GEMAC	
YARWAY A	
YARWAY B	

Name: \_\_\_\_\_