

Facility: SusquehannaDate of Examination: 8/11-8/15 2003Exam Level (circle one): **RO**

Operating Test No.: _____

Control Room Systems (8 for RO; 7 for SRO-I; 2 or 3 for SRO-U)

System / JPM Title	Type Code*	Safety Function
a. 215005 A2.02 3.6/3.7 Bypass an APRM Channel Trip Input	D, S	7
b. 264000 A2.01 3.5/3.6 Start D/G for surveillance	N, A, S	6
c. 223001 A2.07 (4.2/4.3) Venting Suppression Chamber within off-site release limits – ES-173-001, Section 4.2, Vent Suppression Chamber using two inch vent bypass to SGTS.73.EO.001.101	D, S, E	5
d. 202002 A2.05 (3.8/4.0) RESET Recirc Pump Limiter #2 Runback in accordance with ON-164-002	S, A	4
e. 290003 A3.01 3.3/3.5 Complete Monthly Control Room Emergency Outside Air Supply System Operability Test (1)	N, S, A	9
f. 202001 A2.10 3.5/3.9 Respond To A Reactor Recirc Pump Dual Seal Failure IAW ON-164-003	D, S, E/A, L	1
g. 209001 A2.01 3.8/3.7 Perform Manual S/U of Core Spray IAW OP-151-001	D, A, S, E/A, E	2
h. 239001 A4.01 (4.2/4.0) Main Steam Line Isolation and Quick Recovery in Accordance with ON-181-001	D, S	3

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

i. 262001 K4.04 2.8/3.1 Perform Monthly Surveillance of 4KV Bus Undervoltage Relays	N, R, A	6
j. 295016 AA1.08 (4.0/4.0) Perform manual operation of the SRVs Valves from the Remote Shutdown Panel as required by ON-100-00900.ON.015.103	D, R, E/A, A	7
k. 217000 A2.01 3.8/3.7 Bypass of All RCIC Isolation Signals in Accordance With ES-150-001	D, E/A, C	4

* Type Codes: (D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol room, (S)imulator, (L)ow-Power, (R)CA, (E/A)Emergency/Abnormal, (E)SF

(1) Last Minute Replacement - See AR 492171

Facility: SusquehannaDate of Examination: 8/11-8/15 2003Exam Level (circle one): **SRO-I**

Operating Test No.: _____

Control Room Systems (8 for RO; 7 for SRO-I; 2 or 3 for SRO-U)

System / JPM Title	Type Code*	Safety Function
a. 215005 A2.02 3.6/3.7 Bypass an APRM Channel Trip Input	D, S	7
b. 264000 A2.01 3.5/3.6 Start D/G for surveillance	N, A, S	6
c. 223001 A2.07 (4.2/4.3) Venting Suppression Chamber within off-site release limits – ES-173-001, Section 4.2, Vent Suppression Chamber using two inch vent bypass to SGTS.73.EO.001.101	D, S, E	5
d. 202002 A2.05 (3.8/4.0) RESET Recirc Pump Limiter #2 Runback in accordance with ON-164-002	S, A	4
e. 290003 A3.01 3.3/3.5 Complete Monthly Control Room Emergency Outside Air Supply System Operability Test (1)	N, S, A	9
f. 202001 A2.10 3.5/3.9 Respond To A Reactor Recirc Pump Dual Seal Failure IAW ON-164-003	D, S, E/A, L	1
g. 209001 A2.01 3.8/3.7 Perform Manual S/U of Core Spray IAW OP-151-001	D, A, S, E/A, E	2

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

h. 262001 K4.04 2.8/3.1 Perform Monthly Surveillance of 4KV Bus Undervoltage Relays	N, R, A	6
i. 295016 AA1.08 (4.0/4.0) Perform manual operation of the SRVs Valves from the Remote Shutdown Panel as required by ON-100-00900.ON.015.103	D, R, E/A, A	7
j. 217000 A2.01 3.8/3.7 Bypass of All RCIC Isolation Signals in Accordance With ES-150-001	D, E/A, C	4

* Type Codes: (D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol room, (S)imulator, (L)ow-Power, (R)CA, (E/A)Emergency/Abnormal, (E)SF

(1) Last Minute Replacement - See AR 492171

Facility: SusquehannaDate of Examination: 8/11-8/15 2003Exam Level (circle one): **SRO-U**

Operating Test No.: _____

Control Room Systems (8 for RO; 7 for SRO-I; 2 or 3 for SRO-U)

System / JPM Title	Type Code*	Safety Function
c. 223001 A2.07 (4.2/4.3) Venting Suppression Chamber within off-site release limits – ES-173-001, Section 4.2, Vent Suppression Chamber using two inch vent bypass to SGTS.73.EO.001.101	D, S, E	5
e. 290003 A3.01 3.3/3.5 Complete Monthly Control Room Emergency Outside Air Supply System Operability Test (1)	N, S, A	9
g. 209001 A2.01 3.8/3.7 Perform Manual S/U of Core Spray IAW OP-151-001	D, A, S, E/A, E	2

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

i. 262001 K4.04 2.8/3.1 Perform Monthly Surveillance of 4KV Bus Undervoltage Relays	N, R, A	6
j. 295016 AA1.08 (4.0/4.0) Perform manual operation of the SRVs Valves from the Remote Shutdown Panel as required by ON-100-00900.ON.015.103	D, R, E/A, A	7

* Type Codes: (D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol room, (S)imulator, (L)ow-Power, (R)CA, (E/A)Emergency/Abnormal, (E)SF

(1) Last Minute Replacement - See AR 492171

PENNSYLVANIA POWER & LIGHT COMPANY

JOB PERFORMANCE MEASURE

APPROVAL AND ADMINISTRATIVE DATA SHEET

S/RO	78.AR.004.103	0	06/17/03	215005 A2.02	3.6/3.7
Appl. To	JPM Number	Rev. No.	Date	NUREG 1123 Sys. No.	K/A

Task Title: Bypass an APRM Channel B/D/F Trip Input to RPS

Completed By:

Reviews:

Russ Halm 06/17/03

Writer

Date

Instructor/Writer

Date

Approval:

Requesting Supv./C.A.
Head

Date

Nuclear Trng. Supv.

Date

15

Date of Performance:

Allowed Time (Min.)

Time Taken (Min.)

JPM Performed By:

Student Name:

Last

First

M.I.

Employee #/S.S. #

Performance
Evaluation:

() Satisfactory

() Unsatisfactory

Evaluator Name:

Signature

Typed or Printed

Comments:

**REQUIRED TASK INFORMATION
JOB PERFORMANCE MEASURE
S/RO 78.AR.004.103**

I. SAFETY CONSIDERATIONS

- A. All Operations personnel are responsible for maintaining their radiation exposure As Low As Reasonably Achievable in accordance with OP-AD-002, Standards for Shift Operations.
- B. All applicable safety precautions shall be taken in accordance with established PPL safety policies and the Safety Rule Book, for example:
 - 1. Whenever any electrical panel is opened for inspection during JPM performance.
 - 2. Whenever entering any plant area where specific safety equipment; such as hearing or eye protection, safety shoes, hardhats, etc; is required and/or posted as being necessary.
- C. If in the judgement of the evaluator any safety issue occurs during the performance of a JPM, the JPM will be terminated until the issue is resolved.

II. REFERENCES

- A. AR-103-001, RPS Division 1 IC651 (Rev. 22)
- B. AR-104-001, RPS Division 2 IC651 (Rev. 17)
- C. OP-158-001 RPS System (Rev. 26)

III. REACTIVITY MANIPULATIONS

This JPM satisfies the requirements of Operational Activity(s):

None

IV. TASK CONDITIONS

- A. The plant is operating at 100% power.
- B. You are the PCOM.

V. INITIATING CUE

Respond to alarm conditions.

VI. TASK STANDARD

D APRM input to RPS bypassed and half scram signal reset.

VII. TASK SAFETY SIGNIFICANCE

Bypassing D APRM would allow resetting of RPS half scram. Failure to complete the task would result in the inability to remove the half scram signal.

PERFORMANCE CHECKLIST

Page 3 of 5

Appl. To/JPM No.: S/RO 78.AR.004.103

Student Name: _____

Step	Action	Standard	Eval	Comments
	<p><u>EVALUATOR NOTE:</u></p> <ul style="list-style-type: none"> • This JPM must be performed in the simulator. • Establish task conditions as directed on attached setup instructions. • When candidate is ready to begin JPM, place the simulator in RUN. <p><u>EVALUATOR NOTE:</u></p> <p>The upscale failure of D APRM will cause the following annunciators to alarm: AR-103-A06, AR-103-B06, AR-104-A01, AR-104-A04, and AR-104-H03</p> <p>It is acceptable for the candidate to refer to any or all of these AR procedures. The necessary guidance to respond to the failure is contained in AR-103-A06. The JPM is written to follow this guidance.</p> <p><u>BOOTH OPERATOR:</u></p> <p>30 seconds after the candidate is ready to begin the JPM, Depress P-2.</p>			
1	Candidate locates procedure and refers to appropriate section.	Obtains procedure AR-103-001 and refers to Window A06.		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Page 4 of 5

Appl. To/JPM No.: S/RO 78.AR.004.103

Student Name: _____

Step	Action	Standard	Eval	Comments
2	Determines Probable cause.	<p>Determines D APRM is failed upscale high</p> <p>Verifies:</p> <ul style="list-style-type: none"> • CRT No. 6 D APRM reading 125%. • Status light D APRM UPSC TR OR INOP D UPSCALE ALARM – LIT. • AR-104-A01 RPS CHANNEL B1/B2 AUTO SCRAM – LIT. • AR-104-H03 ROD OUT BLOCK – LIT. 		
3	Ensures automatic actions occurred.	<p>Verifies:</p> <ul style="list-style-type: none"> • Trip to Reactor Protection System channel B. • Rod block to Reactor Manual Control System. 		
4	Determines reactor power reduction is not necessary.	Determines flow bias setpoint has not been exceeded on any of the unaffected channels.		
5	<p>Determines D APRM is affected.</p> <p><u>EVALUATOR CUE</u> Candidate may inform Unit Supervisor about the instrument failure before bypassing. Grant permission to Bypass 'D' APRM</p>	<p>Determine APRM channel causing the trip</p> <p>Verifies:</p> <ul style="list-style-type: none"> • D APRM reading 125%. • All other APRMs reading 100%. 		
*6	Bypass D APRM.	Places the Division 2 APRM BYPASS joystick to the D position.		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Page 5 of 5

Appl. To/JPM No.: S/RO 78.AR.004.103

Student Name: _____

Step	Action	Standard	Eval	Comments
	<p><u>EVALUATOR NOTE:</u> It does not matter which position is selected first in the next step.</p>			
*7	Reset RPS trip system.	Places the RX SCRAM RESET switch to the GRP 1/4 position then to the GRP 2/3 position and returns to the NORM position.		
8	Observe alarms clear.	Verifies the following alarm is clear <ul style="list-style-type: none"> RPS CHANNEL B1/B2 AUTO SCRAM, AR-104-A01. 		
	<p><u>EVALUATOR NOTE:</u> This completes the JPM.</p>			

*Critical Step

#Critical Sequence

TASK CONDITIONS

- A. The plant is operating at 100% power.
- B. You are the PCOM.

INITIATING CUE

Respond to alarm conditions.

TASK CONDITIONS

- A. The plant is operating at 100% power.
- B. You are the PCOM.

INITIATING CUE

Respond to alarm conditions.

PENNSYLVANIA POWER & LIGHT COMPANY

JOB PERFORMANCE MEASURE

APPROVAL AND ADMINISTRATIVE DATA SHEET

S/RO	24.SO.002.151	0	06/18/03	264000 A2.01	3.5/3.6
Appl. To	JPM Number	Rev. No.	Date	NUREG 1123 Sys. No.	K/A

Task Title: Perform the Monthly Diesel Generator Operability Test for 'D' D/G in Accordance With SO-024-001

Completed By:

Reviews:

R. Halm

06/18/03

Writer

Date

Instructor/Writer

Date

Approval:

Requesting Supv./C.A.
Head

Date

Nuclear Trng. Supv.

Date

30/40 Min

Date of Performance:

Allowed Time (Min.)

Time Taken (Min.)

JPM Performed By:

Student Name:

Last

First

M.I.

Employee #/S.S. #

Performance () Satisfactory () Unsatisfactory
Evaluation:

Evaluator Name:

Signature

Typed or Printed

Comments:

REQUIRED TASK INFORMATION
JOB PERFORMANCE MEASURE
S/RO 24.SO.002.151

I. SAFETY CONSIDERATIONS

- A. All Operations personnel are responsible for maintaining their radiation exposure As Low As Reasonably Achievable in accordance with OP-AD-002, Standards for Shift Operations.
- B. All applicable safety precautions shall be taken in accordance with established PPL safety policies and the Safety Rule Book, for example:
 - 1. Whenever any electrical panel is opened for inspection during JPM performance.
 - 2. Whenever entering any plant area where specific safety equipment; such as hearing or eye protection, safety shoes, hardhats, etc; is required and/or posted as being necessary.
- C. If in the judgement of the evaluator any safety issue occurs during the performance of a JPM, the JPM will be terminated until the issue is resolved.

II. REFERENCES

- A. SO-024-001, Diesel Generators (Rev. 37)
- B. OP-024-005, Diesel Generator Start Log (SPS OI-024-002) (Rev. 4)
- C. OP-030-002, Control Structure HVAC (Rev. 20)
- D. AR-016-001, D/G D, ESW, RWMU, AND MISC LOAD CENTER 0C653 (Rev. 35)
- E. LA-0521-004, DIESEL GENERATOR D 0C521 (Rev. 14)

III. REACTIVITY MANIPULATIONS

This JPM satisfies the requirements of Operational Activity(s):

None

IV. TASK CONDITIONS

The Plant is in Condition 1.

- A. Perform the Monthly Diesel Generator Operability Test for 'D' D/G in Accordance With SO-024-001.
- B. The ESW System is in service.
- C. The prerequisites for the surveillance have been completed, an operator is stationed at the diesel generator and prelube operation is complete per step 6.1.5.
- D. Recording data on the strip chart recorder per step 6.1.6 is NOT required.
- E. Recording START times per steps 6.1.8, 6.1.9 and 6.1.10 are NOT required.
- F. Communications with the local operator have been established (the evaluator will provide all local information)

V. INITIATING CUE

Perform the Monthly Diesel Generator Operability Test for 'D' D/G in Accordance With SO-024-001 beginning at step 6.1.7 (page 11).

VI. TASK STANDARD

Synchronize the Diesel Generator to the grid and shutdown D/G based on Generator terminal voltage decay.

VII. TASK SAFETY SIGNIFICANCE

Demonstration of Diesel Generator operability.

Failure to synchronize the Diesel Generator to the grid would prevent the Technical Specification required Demonstration of Diesel Generator operability.

Inability to identify the need to trip the Diesel Generator and then have it shutdown would result in equipment damage to a Safety related piece of equipment.

PERFORMANCE CHECKLIST

Page 3 of 12

Appl. To/JPM No.: S/RO 24.SO.002.151

Student Name: _____

Step	Action	Standard	Eval	Comments
	<p><u>EVALUATOR NOTE:</u></p> <ul style="list-style-type: none"> This JPM must be performed in the simulator. Establish task conditions as directed on attached setup instructions. Provide turnover to candidate as follows: <ul style="list-style-type: none"> Layout procedure on monitoring console marked with prerequisites complete and tabs showing start of JPM at step 6.1.7. Show candidate that prerequisites have been signed. Instruct candidate that the evaluator will act as the field operator Tell candidate to review procedure and let the evaluator know when you are to begin the JPM. The FAULTED step in this JPM is preceded by a fault statement in BOLD TYPE WITH ALL CAPITAL LETTERS. When candidate is ready to begin JPM, place the simulator in RUN. 			
1	Candidate is given the procedure as part of turnover and is referred to appropriate section.	Given procedure SO-024-001, Diesel Generator 6.1.7.		

*Critical Step

#Critical Sequence

Form STCP-QA-125A
Rev. 4, (05/00)

2003 NRC Exam Rev. 2

PERFORMANCE CHECKLIST

Page 4 of 12

Appl. To/JPM No.: S/RO 24.SO.002.151

Student Name: _____

Step	Action	Standard	Eval	Comments
2	Reviews prerequisites. <u>EVALUATOR NOTE:</u> <ul style="list-style-type: none"> • All alarms on AR015, Columns 10, 13, 16, Rows A through G will be extinguished. • All alarms on AR016, Column 3, Rows A through G will be extinguished. • Diesels A, B, C and D will be in Standby with each diesel's associated instruments and indications reading as follows: DG D Watts XI-00032D - Downscale Amps - Downscale Freq - 60 to 61 Hz Volts - Downscale Ready to Run Light illuminated Voltage Regulator Auto light illuminated • Synchroscope XS-00037 will be OFF. • Diesel Gen Bus Diff Voltmeter XI-00036 will be reading zero. • The Diesel Generator output breakers for each generator will be open. 	Reviews prerequisites		
3	Review the precautions and procedure up to step 6.1.7	Follows precautions as applicable.		
*4	Start the DG.	Depresses DG "D" start HS-00051D pushbutton. Observes DG frequency and voltage		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Page 5 of 12

Appl. To/JPM No.: S/RO 24.SO.002.151

Student Name: _____

Step	Action	Standard	Eval	Comments
5	<p>Record D/G Air Start Receiver pressures</p> <p><u>EVALUATOR CUE:</u></p> <p>As local operator at the D/G report:</p> <p>Left Bank Pressure: 190 psig</p> <p>Right Bank Pressure: 195 psig</p> <p>Air Start Receivers are properly aligned</p> <p>The Air Start Receivers are within 10 psig of each other</p> <p>Both #1 and #2 Air Compressors started.</p>	<p>Request local operator check:</p> <p>Air pressure</p> <p>System properly aligned</p> <p>Both #1 & #2 compressors started</p>		
6	<p>Log the DG start time.</p> <p><u>EVALUATOR NOTE:</u></p> <p>D/G will run for a few minutes and a Low Priority alarm will be received. The alarm is from the Standpipe High Level alarm at the local panel. The alarm is due to jacket water heating up and is an expected alarm during startup.</p>	<p>Notes the DG start time</p> <p>AND</p> <p>Completes the Diesel Generator Start Log.</p>		

*Critical Step

#Critical Sequence

Form STCP-QA-125A
Rev. 4, (05/00)

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PERFORMANCE CHECKLIST

Page 6 of 12

Appl. To/JPM No.: S/RO 24.SO.002.151

Student Name: _____

Step	Action	Standard	Eval	Comments
7	DG A PANEL 0C521D LO PRIORITY TROUBLE received (AR-016-C03)	Request local Operator to perform <u>LA-0521-004 Diesel Generator D 0C521D</u> (Attached)		
8	Review Alarm Response Procedure	Review <u>AR-016-C03</u> which contains the following steps: (Attached) COMPLY with TS 3.8.1 and 3.8.3. OBSERVE Generator Voltage; If 2600V(± 200V): DO NOT adjust Voltage Regulator, AND PROMPTLY SHUTDOWN Diesel Generator.		
	<u>EVALUATOR CUE:</u> Report that local alarm is <u>E01</u> Standpipe High Level Alarm, normal Expected alarm received during startup.	Repeat back Expected high level alarm due to Standpipe high level.		
9	Perform post start checks of the running Diesel generator.	Request local Operator to perform post start checks of Diesel Generator D 0C521D		
	<u>EVALUATOR CUE:</u> Report as the field operator that post start checks of the Diesel Generator are satisfactory, temperatures are normal and starting air pressure is 250 psig on local gages.			

*Critical Step

#Critical Sequence

Form STCP-QA-125A
Rev. 4, (05/00)

2000 NRS Exam Rev. 2

PERFORMANCE CHECKLIST

Page 7 of 12

Appl. To/JPM No.: S/RO 24.SO.002.151

Student Name: _____

Step	Action	Standard	Eval	Comments
10	Monitor and record parameters	When steady state conditions reached, takes current values of frequency and voltage and records on attachment A		
11	Ensure all Synchroscope switches OFF	Verifies all synchroscope switches OFF		
*12	SYNCHRONIZE Diesel Generator D to 4.16KV Bus 1D. Step 6.1.17 a.- l	PLACE DG D to Bus 1D Sync Sel HS-00042A keyswitch switch to ON.		
13	Check for excessive sparking of the generator brushes. <u>EVALUATOR CUE:</u> Report as the field operator that no sparking of the generator brushes has been observed.	Requests local operator to check for excessive sparking of the generator brushes		
*14	Adjust DG D Voltage	ADJUST DG D Voltage Adjust HS-00053 D so Diff AC Volts XI-00036 indicates slightly right of 0 and not exceeding 35 volts AC.		
*15	Adjust DG D Speed	ADJUST DG D Speed Governor HS-00054 D so Synchroscope XI-00037 rotating in FAST (clockwise) direction at ~ 1 (one) revolution per 60 seconds.		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Page 8 of 12

Appl. To/JPM No.: S/RO 24.SO.002.151

Student Name: _____

Step	Action	Standard	Eval	Comments
*16	CLOSE DG D output breaker	CLOSE DG D to Bus 1D Bkr 1A20404 when synchroscope at or slightly before "12 o'clock" position.		
	<u>Faulted Step – 'D' D/G @1000 KW, Generator output breaker trips and Generator Terminal voltage decays.</u>			
*17	Raise load on DG D	PROMPTLY go to RAISE and SLOWLY increase load to 1000 KW over a 30-45 second period using DG D Speed Governor HS-00054 D switch.		
	<u>BOOTH NOTE:</u> Monitor DG output breaker. If DG D PANEL 0C521D LO PRIORITY TROUBLE (C03) does not alarm when DG output breaker OPENS, then Depress PB#8 which will trigger a local alarm that will cause DG D PANEL 0C521D LO PRIORITY TROUBLE (C03) to alarm			

*Critical Step

#Critical Sequence

Form STCP-QA-125A
Rev. 4, (05/00)

2000 0001 0001 0001

PERFORMANCE CHECKLIST

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Appl. To/JPM No.: S/RO 24.SO.002.151

Student Name: _____

Step	Action	Standard	Eval	Comments
18	<p><u>EVALUATOR NOTE:</u></p> <p>The D D/G output breaker will trip open with no alarm.</p> <p>Then the DG D PANEL 0C521D LO PRIORITY TROUBLE (C03) will annunciate, and DG voltage should be slowly dropping to ~2600 volts.</p> <p>Respond to:</p> <p>DG D PANEL 0C521D LO PRIORITY TROUBLE (C03) Alarm response: <u>AR-016-C03</u></p> <p><u>EVALUATOR CUE:</u></p> <p>As local Operator report the following alarm received at panel 0C521D:</p> <p>GENERATOR FIELD GROUND (alarm) (F06)</p>	<p>Request local Operator to investigate LA-0521-004 Diesel Generator D 0C521D (Attached)</p>		

*Critical Step

#Critical Sequence

Form STCP-QA-125A
Rev. 4, (05/00)

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PERFORMANCE CHECKLIST

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Appl. To/JPM No.: S/RO 24.SO.002.151

Student Name: _____

Step	Action	Standard	Eval	Comments
*19	Review AR-016-C03	Review AR-016-C03 which contains the following steps: COMPLY with TS 3.8.1 and 3.8.3. OBSERVE Generator Voltage; If 2600V(± 200V): DO NOT adjust Voltage Regulator, AND PROMPTLY SHUTDOWN Diesel Generator.		
	<u>EVALUATOR CUE:</u> If candidate request local operator to check DG D voltage locally, report DG D voltage as ~ 2600 volts			
20	Monitor Voltage D/G meter: OXI00035D for change in voltage	Checks: voltage decreasing, as voltage approaches 2600V		
*21	Trip DG D	Request local operator to trip DG D		
	<u>BOOTH OPERATOR</u> Depress PB#7 CAE+! DGDStop (Trips D/G locally)			

*Critical Step

#Critical Sequence

Form STCP-QA-125A
Rev. 4, (05/00)

2005 NRC Exam Rev. 2

PERFORMANCE CHECKLIST

Student Name: _____

Appl. To/JPM No.: S/RO 24.SO.002.151

Step	Action	Standard	Eval	Comments
23	<u>EVALUATOR CUE:</u> Role play local operator and report D/G tripped AFTER trip alarm received in the control room.	Repeat back D/G tripped. Verify D/G tripped alarms Verify Voltage indication zero Verify D/G speed decreasing by observing Hz meter.		
	Verifies DG secured	Contacts local operator to ensure DG is shutdown.		
	<u>EVALUATOR CUE:</u> This completes the JPM.			
24	<u>EVALUATOR CUE:</u> <u>FOR SRO CANDIDATES ONLY</u> Give the SRO candidate the second cue sheet that addresses the Tech Spec LCO for the inoperable DG			
	Obtains a copy of the Tech Specs	References the Tech Specs		

PERFORMANCE CHECKLIST

Page 12 of 12

Appl. To/JPM No.: S/RO 24.SO.002.151

Student Name: _____

Step	Action	Standard	Eval	Comments
*25	<p>Determines required actions</p> <p><u>EVALUATOR CUE:</u> This completes the JPM.</p>	<p>Determines the following actions will be required:</p> <p>Within 1 hour and 1/8 hours thereafter</p> <p>Perform SR 3.8.1.1 for Operable offsite circuits</p> <p>Within 24 hours</p> <p>Determine the Operable DGs are not inoperable due to a common cause failure</p> <p>OR</p> <p>Perform SR 3.8.1.7 for operable DGs</p> <p>Within 72 hours and 6 days of discovery of failure to meet the LCO:</p> <p>Restore the DG to operable status</p>		

*Critical Step

#Critical Sequence

Form STCP-QA-125A
Rev. 4, (05/00)

2000 7/15/00 11:00 AM

SRO ONLY

TASK CONDITIONS

The Plant is in Condition 1.

- A. The "D" Diesel Generator has just failed its' Monthly Diesel Generator Operability Test SO-024-001.
- B. The "E" Diesel Generator is unavailable as a replacement for the "D" Diesel Generator.

INITIATING CUE

What Technical Specifications action(s), including time limits, is/are required as a result of this failure.

SRO ONLY

TASK CONDITIONS

The Plant is in Condition 1.

- A. The "D" Diesel Generator has just failed its' Monthly Diesel Generator Operability Test SO-024-001.
- B. The "E" Diesel Generator is unavailable as a replacement for the "D" Diesel Generator.

INITIATING CUE

What Technical Specifications action(s), including time limits, is/are required as a result of this failure.

TASK CONDITIONS

The Plant is in Condition 1.

- A. Perform the Monthly Diesel Generator Operability Test for 'D' D/G in Accordance With SO-024-001.
- B. The ESW System is in service.
- C. The prerequisites for the surveillance have been completed, an operator is stationed at the diesel generator and prelube operation is complete per step 6.1.5.
- D. Recording data on the strip chart recorder per step 6.1.6 is NOT required.
- E. Recording START times per steps 6.1.8, 6.1.9 and 6.1.10 are NOT required.
- F. Communications with the local operator have been established (the evaluator will provide all local information)

INITIATING CUE

Perform the Monthly Diesel Generator Operability Test for 'D' D/G in Accordance With SO-024-001 beginning at step 6.1.7 (page 11).

TASK CONDITIONS

The Plant is in Condition 1.

- A. Perform the Monthly Diesel Generator Operability Test for 'D' D/G in Accordance With SO-024-001.
- B. The ESW System is in service.
- C. The prerequisites for the surveillance have been completed, an operator is stationed at the diesel generator and prelube operation is complete per step 6.1.5.
- D. Recording data on the strip chart recorder per step 6.1.6 is NOT required.
- E. Recording START times per steps 6.1.8, 6.1.9 and 6.1.10 are NOT required.
- F. Communications with the local operator have been established (the evaluator will provide all local information)

INITIATING CUE

Perform the Monthly Diesel Generator Operability Test for 'D' D/G in Accordance With SO-024-001 beginning at step 6.1.7 (page 11).

PENNSYLVANIA POWER & LIGHT COMPANY
JOB PERFORMANCE MEASURE
APPROVAL AND ADMINISTRATIVE DATA SHEET

S/RO	73.EO.001.101	2	06/17/03	223001 A2.07	4.2/4.2
Appl. To	JPM Number	Rev. No.	Date	NUREG 1123 Sys. No.	K/A

Task Title: Venting Suppression Chamber Within Offsite Release Limits - ES-173-001, Section 4.2
Vent Suppression Chamber Using Two Inch Vent Bypass to SGTS

Completed By:

Reviews:

Russ Halm	06/17/03		06/20/01
Writer	Date	Instructor/Writer	Date

Approval:

Requesting Supv./C.A. Head	Date	Nuclear Trng. Supv.	Date
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Date of Performance:	20	
	Allowed Time (Min.)	Time Taken (Min.)

JPM Performed By:

Student Name: _____

Last	First	M.I.	Employee #/S.S. #
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Performance () Satisfactory () Unsatisfactory

Evaluation:

Evaluator Name: _____

Signature	Typed or Printed
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Comments:

REQUIRED TASK INFORMATION
JOB PERFORMANCE MEASURE
S/RO 73.EO.001.101

I. SAFETY CONSIDERATIONS

- A. All Operations personnel are responsible for maintaining their radiation exposure As Low As Reasonably Achievable in accordance with OP-AD-002, Standards for Shift Operations.
- B. All applicable safety precautions shall be taken in accordance with established PPL safety policies and the Safety Rule Book, for example:
 - 1. Whenever any electrical panel is opened for inspection during JPM performance.
 - 2. Whenever entering any plant area where specific safety equipment; such as hearing or eye protection, safety shoes, hardhats, etc; is required and/or posted as being necessary.
- C. If in the judgement of the evaluator any safety issue occurs during the performance of a JPM, the JPM will be terminated until the issue is resolved.

II. REFERENCES

- A. ES-173-001 Venting Suppression Chamber Within Offsite Release Limits (Rev. 4)

III. REACTIVITY MANIPULATIONS

This JPM satisfies the requirements of Operational Activity(s):

None

IV. TASK CONDITIONS

- A. A small break LOCA has occurred.
- B. The Reactor is shut down with all control rods full in.
- C. The TSC has determined it is necessary to vent the Suppression Chamber restricted to TS release limits.
- D. ES-173-001, Section 4.2, is completed by the US up to and including step 4.2.4.b(1)
- E. Per Step 4.2.1:of procedure, Chemistry has obtained a Suppression Chamber Noble Gas sample and the Sample result are $3E-7uci/cc$.
- F. SGTS SPECIAL PARTICULATE IODINE & NOBLE GAS (SPING) is operable.
- G. SGTS is operating per OP-070-001.

V. INITIATING CUE

Vent the Suppression Chamber (restricted to TS Release Limits) per ES-173-001, Section 4.2, beginning at step 4.2.4.c

VI. TASK STANDARD

Suppression Chamber vent path established.

VII. TASK SAFETY SIGNIFICANCE

Establishing a Suppression Chamber vent path, under these conditions, is necessary to maintain Primary Containment integrity.

Failure to establish a Suppression Chamber vent path could lead to Primary Containment failure.

PERFORMANCE CHECKLIST

Page 4 of 7

Appl. To/JPM No.: S/RO 73.EO.003.101

Student Name: _____

Step	Action	Standard	Eval	Comments
	<p><u>EVALUATOR NOTE:</u></p> <p>Prior to performing this JPM, obtain a copy of the latest revision of ES-173-001 and mark it as if it was actually to be performed. For step 4.1 indicate (initial) that section 4.2 be performed and N/A section 4.3. Complete the signature, date, and time. Indicate steps 4.2.1, 4.2.2, 4.2.3, and 4.2.4 are complete. Provide it to the student along with the Task Conditions/Initiating Cue Sheet.</p> <ul style="list-style-type: none"> • If this JPM is performed in the simulator establish task conditions as directed on attached setup instructions. • When student is ready to begin JPM, place the Simulator in RUN. 			
1	Review Sections 1.0 through 3.0.	<p>Review all sections.</p> <p>Follows all precautions as applicable.</p>		
2	Notes Shift Manager approval to perform Step 4.2 (page 2 of 23).	Observes Shift Manager signature, date, and time in the appropriate location (to perform section 4.2) in Section 4.1 of the procedure.		
3	Obtain the required equipment.	Obtains two (2) keys.		
	<p><u>EVALUATOR NOTE:</u></p> <p>If a containment isolation signal is not present, then steps 4.2.4.c(1) & (2) are not required and should not be performed. Mark signoffs NA.</p>			

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Page 5 of 7

Appl. To/JPM No.: S/RO 73.EO.003.101

Student Name: _____

Step	Action	Standard	Eval	Comments
	<u>EVALUATOR NOTE:</u> Placing the key switches to the SC position in the following steps will cause AR127(8)-D-7 to alarm. Acknowledging these alarms is not critical.			
*4	Over-ride 45 minute time delay Div 1.	PLACE keylock switch for Drwl/Supp Chmbr Dmp HD-17508A Iso Signal Byps (HD17508A, HV-15703) in SC position. Inserts key and rotates clockwise to place keylock switch HD-17508A in SC position.		
*5	Over-ride 45 minute time delay Div 2.	PLACE keylock switch for Drwl/Supp Chmbr Dmp HD-17508B Iso Signal Byps (HD17508B, HV-15705) in SC position. Inserts key and rotates clockwise to place keylock switch HD-17508B in SC position. Determines step 4.2.4.d is not applicable.		
	<u>EVALUATOR CUE:</u> If asked, inform the student that venting is restricted to TS release limits; N/A step 4.2.4.d.			
*6	At Panel 1C681 line up vent path.	Open Drwl/Wetwell Burp Dmp HD-17508A. Places Control Switch for HD-17508A to OPEN AND Verifies RED Light LIT, AMBER Light NOT LIT		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Page 6 of 7

Appl. To/JPM No.: S/RO 73.EO.003.101

Student Name: _____

Step	Action	Standard	Eval	Comments
*7	At Panel 1C681 line up vent path.	Open Drwl/Wetwell Burp Dmp HD-17508B. Places Control Switch for HD-17508B to OPEN AND Verifies RED Light LIT, AMBER Light NOT LIT		
*8	At Panel 1C601 line up vent path.	Open SUPP CHMBR VENT IB ISO HV-15703. Places Control Switch for HV-15703 to OPEN AND Verifies RED Light LIT, AMBER Light NOT LIT		
*9	At Panel 1C601 line up vent path.	Open SUPP CHMBR VENT OB ISO HV-15705. Places Control Switch for HV-15705 to OPEN AND Verifies RED Light LIT, AMBER Light NOT LIT		
10	Verify vent path complete.	MONITOR Suppression Chamber pressure on CONTAINMENT PRESSURE PR-15710A(B).		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Page 7 of 7

Appl. To/JPM No.: S/RO 73.EO.003.101

Student Name: _____

Step	Action	Standard	Eval	Comments
11	<p>Monitor Radiation release rates.</p> <p><u>EVALUATOR CUE:</u></p> <p>This completes the JPM.</p>	<p>MONITOR SGBT SPING release rates.</p> <p>Using any of the following: PICSY (yellow-no alarms) SPING Terminal.</p> <p>AND</p> <p>Determine SGTS SPING release rates remain stable and NO alarms are present.</p>		

*Critical Step

#Critical Sequence

TASK CONDITIONS

- A. A small break LOCA has occurred.
- B. The Reactor is shut down with all control rods full in.
- C. The TSC has determined it is necessary to vent the Suppression Chamber restricted to TS release limits.
- D. ES-173-001, Section 4.2, is completed by the US up to and including step 4.2.4.b(1)
- E. Per Step 4.2.1:of procedure, Chemistry has obtained a Suppression Chamber Noble Gas sample and the Sample result are $3E-7uci/cc$.
- F. SGTS SPECIAL PARTICULATE IODINE & NOBLE GAS (SPING) is operable.
- G. SGTS is operating per OP-070-001.

INITIATING CUE

Vent the Suppression Chamber (restricted to TS Release Limits) per ES-173-001, Section 4.2, beginning at step 4.2.4.c

TASK CONDITIONS

- A. A small break LOCA has occurred.
- B. The Reactor is shut down with all control rods full in.
- C. The TSC has determined it is necessary to vent the Suppression Chamber restricted to TS release limits.
- D. ES-173-001, Section 4.2, is completed by the US up to and including step 4.2.4.b(1)
- E. Per Step 4.2.1:of procedure, Chemistry has obtained a Suppression Chamber Noble Gas sample and the Sample result are $3E-7uci/cc$.
- F. SGTS SPECIAL PARTICULATE IODINE & NOBLE GAS (SPING) is operable.
- G. SGTS is operating per OP-070-001.

INITIATING CUE

Vent the Suppression Chamber (restricted to TS Release Limits) per ES-173-001, Section 4.2, beginning at step 4.2.4.c

APPROVAL AND ADMINISTRATIVE DATA SHEET

REQUIRED TASK INFORMATION
JOB PERFORMANCE MEASURE
S/RO 64.OP.004.153

I. SAFETY CONSIDERATIONS

- A. All Operations personnel are responsible for maintaining their radiation exposure As Low As Reasonably Achievable in accordance with OP-AD-002, Standards for Shift Operations.
- B. All applicable safety precautions shall be taken in accordance with established PPL safety policies and the Safety Rule Book, for example:
 - 1. Whenever any electrical panel is opened for inspection during JPM performance.
 - 2. Whenever entering any plant area where specific safety equipment; such as hearing or eye protection, safety shoes, hardhats, etc; is required and/or posted as being necessary.
- C. If in the judgement of the evaluator any safety issue occurs during the performance of a JPM, the JPM will be terminated until the issue is resolved.

II. REFERENCES

ON-164-002, Loss Of Reactor Recirculation Flow (Rev. 20)

III. REACTIVITY MANIPULATIONS

This JPM satisfies the requirements of Operational Activity(s):

36 Reset recirc pump runback

IV. TASK CONDITIONS

- A. The plant is in Mode 1.
- B. Rods 18-23, 18-39, 42-23, and 42-39, are fully inserted to support HCU maintenance on Rod 18-39.
- C. A trip of CWP 1D has caused a Reactor Recirculation runback to occur.
- D. NO Operator actions have been taken.

V. INITIATING CUE

Respond to a loss of reactor recirculation flow and reset recirculation pump runback in accordance with appropriate Off Normal procedure.

VI. TASK STANDARD

Recirc pump limiter #2 reset and scoop tube locked for B recirc pump

VII. TASK SAFETY SIGNIFICANCE

Resetting the limiter would *regain* control of Recirculation Pump speed.

Failure to recognize a failure of the speed control for Recirculation Pump would allow a power excursion and potential scram.

PERFORMANCE CHECKLIST

Page 3 of 13

Appl. To/JPM No.: S/RO 64.OP.004.153

Student Name: _____

Step	Action	Standard	Eval	Comments
	EVALUATOR NOTE: <ul style="list-style-type: none"> This JPM must be performed in the simulator. Establish task conditions as directed on attached setup instructions. The FAULTED step in this JPM is preceded by a fault statement in BOLD TYPE WITH ALL CAPITAL LETTERS. When student is ready to begin JPM, place the simulator in RUN. 			
1	Obtain a controlled copy of ON-164-002, Loss Of Reactor Recirculation Flow.	Controlled copy obtained.		
2	Record date and time of event.	Records date and time of event.		
3	Selects the correct section to perform.	Selects section 3.4.		
4	Plot position on Power/Flow Map.	In the event of Reactor Recirculation Pump runback: Plot position on Power/Flow Map, Form NDAP-QA-0338-10 (Rev-5). Determines NOT to be in Region 1 or 2.		
5	Perform appropriate action specified on Power/Flow Map.	Perform appropriate action specified on Power/Flow Map. Determines NO action required for current region.		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Page 4 of 13

Appl. To/JPM No.: S/RO 64.OP.004.153

Student Name: _____

Step	Action	Standard	Eval	Comments
6	Place mode switch to SHUTDOWN if operating in any of these power/flow map conditions.	<p><u>IF</u> Power/Flow Map indicates operation in Region 1 or Core Flow is < Natural Recirculation Line <u>OR</u> operation in any region not bounded by Power/Flow map, Place MODE SWITCH to SHUTDOWN.</p> <p>Determines NO action required.</p>		
7	Determine which limiter initiated runback.	<p>Limiter #1 (30%) limiting by Green light ILLUMINATED above RX RECIRC LIMITER #1 RUNBK RESET HS-B31-1S15A(B) pushbutton.</p> <p>Verifies:</p> <p>Green lights NOT LIT.</p> <p>Limiter #2 (45%) limiting by Green light ILLUMINATED above LOSS OF FW PP RUNBK RESET HS-B31-1S12A(B) pushbutton.</p> <p>Verifies:</p> <p>Green lights LIT.</p>		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Page 5 of 13

Appl. To/JPM No.: S/RO 64.OP.004.153

Student Name: _____

Step	Action	Standard	Eval	Comments
8	<p>Ensure both pumps have run back to value associated with controlling limiter.</p> <p style="text-align: center;"><u>CAUTION</u></p> <p>As core flow decreases, core flux instabilities are more likely to occur.</p>	<p>For RRP A verifies: Input meter SY-B31-1R621A is ~45% <u>OR</u> Gen 1A Speed is ~45 % on SI-14032A and Gen 1A Demand is ~45% on XI-14032A.</p> <p style="text-align: center;">AND</p> <p>For RRP B verifies: Input meter SY-B31-1R621B is ~45% <u>OR</u> Gen 1B Speed is ~45% on SI-14032B and Gen 1B Demand is ~45% on XI-14032B.</p>		
9	<p>Monitor neutron instrumentation for indication of core instability.</p> <p>IF required, Perform ON-178-002, Core Flux Oscillations.</p>	<p>Select a Control Rod and monitors for LPRM/APRM oscillations and determines they are <u>not</u> unstable.</p> <p>ON-178-002 is NOT required.</p>		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Page 6 of 13

Appl. To/JPM No.: S/RO 64.OP.004.153

Student Name: _____

Step	Action	Standard	Eval	Comments
	<u>CAUTION</u>			
10	Power reduction will further reduce amount of feedwater heating which will cause reactor power to increase. Continue Monitoring position on Power/Flow map.	Plot position on Power/Flow map for changes in reactor power or core flow.		
11	Monitor changes in radiation levels. <u>EVALUATOR CUE:</u> If questioned about Rad Monitor readings, inform candidate that the radiation level were at their 100% reactor power values and have now lowered and stabilized at the values indicated.	On 1C600, Monitor the following: Main Steam Line Radiation Monitor, RR-D12-1R603. Offgas Pretreatment Log Radiation Monitor, RR-D12-1R601. Determines values are NORMAL for this power level.		
12	IF Main Steam Line Radiation Monitor or Offgas Pretreatment Log Radiation Monitor increases, Direct Chemistry to sample per CH-ON-003.	Determines Chemistry notification is NOT required.		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Page 7 of 13

Appl. To/JPM No.: S/RO 64.OP.004.153

Student Name: _____

Step	Action	Standard	Eval	Comments
13	Monitors parameters for new power level.	Observe following plant parameters WITHIN LIMITS corresponding to new power level: a. Power to flow limits b. Condenser vacuum c. Feedwater flow/steam flow d. RPV water level Determines WITHIN LIMITS for the new power level.		
14	Determine signal that initiated runback. <u>EVALUATOR NOTE:</u> CWP 1D trip was given in initial conditions.	Determines: Limiter #2 (45%) runback initiated by Circulating Water Pump 1D protective trip.		
15	Ensure recirc speed controllers are in manual.	Ensure REACTOR RECIRC PUMP A(B) SPEEDS SY-B31-1R621A(B) IN MANUAL. Verifies amber M (manual) light LIT on the following: Reactor Recirc Pump A SY-B31-1R621A Reactor Recirc Pump B SY-B31-1R621B		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Page 8 of 13

Appl. To/JPM No.: S/RO 64.OP.004.153

Student Name: _____

Step	Action	Standard	Eval	Comments
	<p><u>CAUTION</u></p> <p>When establishing control with the recirc pump speed controllers, minimize lowering core flow to avoid inadvertent entry into Regions I or II of the power/flow map.</p> <p><u>EVALUATOR NOTE:</u> If minor speed oscillations occur for RRP A, acknowledge candidate concerns and direct candidate to continue with FW PP Runback Resets. Speed oscillations will be addressed subsequent to the reset.</p> <p><u>EVALUATOR CUE:</u> If necessary provide candidate with INITIAL recirc pump RPM select MPS (Monitored Parameter Summary) to view speed values. Booth operator to provide to examiner when student requests speeds. (IMP RRN1P401A and IMP RRN1P401B)</p>			

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Page 9 of 13

Appl. To/JPM No.: S/RO 64.OP.004.153

Student Name: _____

Step	Action	Standard	Eval	Comments
*16A	<p>Establish speed control for RRP A.</p> <p><u>EVALUATOR CUE:</u> If necessary provide candidate with recirc pump RPM select MPS (Monitored Parameter Summary) to view speed values. Booth operator to provide to examiner when student requests speeds. (IMP RRN1P401A and IMP RRN1P401B)</p> <p>Candidate may observe loop flow to confirm control.</p>	<p>For Limiter #2 runback Perform following for one or both pumps as required: To prevent pump speed from changing when Limiter #2 reset, Ensure GEN 1A DEMAND adjusted such that GEN 1A SPEED decreases when controller DEMAND is decreased.</p> <p>For RRP A: Depresses the DEC pushbutton on Reactor Recirc Pump A SY-B31-1R621A controller until Gen 1A Demand XI-14032A and Gen 1A Speed SI-14032A start to decrease.</p>		
*17A	Reset limiter #2 runback for RRP A.	Depress LOSS OF FW PP RUNBK RESET HS-B31-1S12A pushbutton.		
18A	Monitor GEN 1A speed.	<p>Monitor GEN 1A SPEED SI-14032A.</p> <p>Determines speed is stable.</p>		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Page 10 of 13

Appl. To/JPM No.: S/RO 64.OP.004.153

Student Name: _____

Step	Action	Standard	Eval	Comments
19A	If RRP A speed increases rapidly, lock scoop tube.	IF speed increases rapidly, Trip scoop tube on affected generator by depressing SCOOP TUBE A LOCK OR RESET HS-B31-1S30A TRIP pushbutton.		
20A	Verify RRP A limiter #2 is reset by light indication.	Determines speed is not increasing rapidly and locking scoop tube is NOT required. Observe Green light above LOSS OF FW PP RUNBK RESET HS-B31-1S12A pushbutton EXTINGUISHED. Verifies: Green light NOT LIT.		
	<u>EVALUATOR NOTE:</u> If minor speed oscillations occur for RRP B, acknowledge candidate concerns and direct candidate to continue with FW PP Runback Resets. Speed oscillations will be addressed subsequent to the reset.			

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Page 11 of 13

Appl. To/JPM No.: S/RO 64.OP.004.153

Student Name: _____

Step	Action	Standard	Eval	Comments
*16B	<p>Establish speed control for RRP B.</p> <p><u>EVALUATOR CUE:</u> If necessary provide candidate with recirc pump RPM select MPS (Monitored Parameter Summary) to view speed values. Booth operator to provide to examiner when student requests speeds. (IMP RRN1P401A and IMP RRN1P401B)</p> <p>Candidate may observe loop flow to confirm control.</p> <p><u>FAULT STATEMENT:</u></p> <p>RRP B WILL EXPERIENCE AN UNCONTROLLED SPEED INCREASE AFTER THE CANDIDATE HAS RESET THE RUNBACK.</p>	<p>To prevent pump speed from changing when Limiter #2 reset, Ensure GEN 1B DEMAND adjusted such that GEN 1B SPEED decreases when controller DEMAND is decreased.</p> <p>For RRP B: Depresses the DEC pushbutton on Reactor Recirc Pump B SY-B31-1R621B controller until Gen 1B Demand XI-14032B and Gen 1B Speed SI-14032B start to decrease.</p>		
*17B	Reset limiter #2 runback for RRP B.	Depress LOSS OF FW PP RUNBK RESET HS-B31-1S12B pushbutton.		
18B	Monitor GEN 1B speed.	<p>Monitor GEN 1B SPEED SI-14032B.</p> <p>Determines RRP B speed is increasing.</p>		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Page 12 of 13

Appl. To/JPM No.: S/RO 64.OP.004.153

Student Name: _____

Step	Action	Standard	Eval	Comments
*19B	If RRP B speed increases rapidly, lock scoop tube.	<p>IF speed increases rapidly, Trip scoop tube on affected generator by depressing SCOOP TUBE B LOCK OR RESET HS-B31-1S03B TRIP pushbutton.</p> <p>Depresses the SCOOP TUBE B LOCK OR RESET HS-B31-1S03B TRIP pushbutton.</p> <p>AND</p> <p>Verifies annunciator <u>AR-102-D05</u>, RECIRC MG B SCOOP TUBE DRIVE LOCK is LIT.</p>		
20B	Verify RRP B limiter #2 is reset by light indication.	<p>Observe Green light above LOSS OF FW PP RUNBK RESET HS-B31-1S12B pushbutton EXTINGUISHED.</p> <p>Verifies: Green light NOT LIT.</p>		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Page 13 of 13

Appl. To/JPM No.: S/RO 64.OP.004.153

Student Name: _____

Step	Action	Standard	Eval	Comments
21	<p>Check annunciator status.</p> <p><u>EVALUATOR CUE:</u></p> <p>This completes the JPM.</p>	<p>Check RECIRC A(B) FLOW LIMIT RUNBACK annunciator CLEARED.</p> <p>Verifies annunciator SLOW FLASH for :</p> <p>AR-102-C01 RECIRC A FLOW LIMIT RUNBACK.</p> <p>AND</p> <p>AR-102-C04 RECIRC B FLOW LIMIT RUNBACK</p>		

*Critical Step

#Critical Sequence

TASK CONDITIONS:

- A. The plant is in Mode 1.
- B. Rods 18-23, 18-39, 42-23, and 42-39, are fully inserted to support HCU maintenance on Rod 18-23.
- C. A trip of CWP 1D has caused a Reactor Recirculation runback to occur.
- D. NO Operator actions have been taken.

INITIATING CUE:

Respond to a loss of reactor recirculation flow and reset recirculation pump runback in accordance with appropriate Off Normal procedure.

TASK CONDITIONS:

- A. The plant is in Mode 1.
- B. Rods 18-23, 18-39, 42-23, and 42-39, are fully inserted to support HCU maintenance on Rod 18-23.
- C. A trip of CWP 1D has caused a Reactor Recirculation runback to occur.
- D. NO Operator actions have been taken.

INITIATING CUE:

Respond to a loss of reactor recirculation flow and reset recirculation pump runback in accordance with appropriate Off Normal procedure.

PENNSYLVANIA POWER & LIGHT COMPANY

JOB PERFORMANCE MEASURE

APPROVAL AND ADMINISTRATIVE DATA SHEET

S/RO	30.SO.001.151	0	8/14/03	290003 A3.01	3.3/3.5
Appl. To	JPM Number	Rev. No.	Date	NUREG 1123 Sys. No.	K/A

Task Title: COMPLETE MONTHLY CONTROL ROOM EMERGENCY OUTSIDE AIR SUPPLY
SYSTEM OPERABILITY TEST

Completed By:		Reviews:	
<u>Russ Halm</u>	<u>8/14/03</u>	<u></u>	<u>8/14/03</u>
Writer	Date	Instructor/Writer	Date

Approval:

Requesting Supv./C.A. Head	Date	Nuclear Trng. Supv.	Date
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Date of Performance:	10	
	Allowed Time (Min.)	Time Taken (Min.)

JPM Performed By:

Student Name: _____

Last	First	M.I.	Employee #/S.S. #
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Performance Evaluation: () Satisfactory () Unsatisfactory

Evaluator Name: _____

Signature	Typed or Printed
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Comments:

**REQUIRED TASK INFORMATION
JOB PERFORMANCE MEASURE
S/RO 30.SO.001.151**

I. SAFETY CONSIDERATIONS

- A. All Operations personnel are responsible for maintaining their radiation exposure As Low As Reasonably Achievable in accordance with OP-AD-002, Standards for Shift Operations.
- B. All applicable safety precautions shall be taken in accordance with established PPL safety policies and the Safety Rule Book, for example:
 - 1. Whenever any electrical panel is opened for inspection during JPM performance.
 - 2. Whenever entering any plant area where specific safety equipment; such as hearing or eye protection, safety shoes, hardhats, etc; is required and/or posted as being necessary.
- C. If in the judgement of the evaluator any safety issue occurs during the performance of a JPM, the JPM will be terminated until the issue is resolved.

II. REFERENCES

- A. SO-030-001 Monthly Control Room Emergency Outside Air Supply System Operability Test (Rev 11)
- B. AR-029-001 Control Structure, SGTS, DG and ESW PH Ventilation (Rev. 21)

III. REACTIVITY MANIPULATIONS

This JPM satisfies the requirements of Operational Activity(s):

None

IV. TASK CONDITIONS

- A. Unit 1 and Unit 2 are operating normally in Mode 1.
- B. The 'A' CREOASS charcoal has been replaced.
- C. The 'A' train of CREOASS has successfully completed 10 hours of run time per the monthly surveillance.

V. INITIATING CUE

Shutdown the 'A' CREOASS Fan per SO-030-001 Monthly Control Room Emergency Outside Air Supply System Operability Test.

VI. TASK STANDARD

Shutdown the 'A' CREOASS Fan, and place the 'B' CREOASS fan in AUTO LEAD.

VII. TASK SIGNIFICANCE

Failure to place the 'B' CREOASS Fan to AUTO LEAD would delay or prevent auto initiation of the CREOASS system resulting in unanalyzed plant condition. The unanalyzed condition could result in excessive dose to the Control Room Operators

PERFORMANCE CHECKLIST

Page 4 of 7

Appl. To/JPM No.: S/RO 30.SO.001.151

Student Name: _____

Step	Action	Standard	Eval	Comments
1	<p><u>EVALUATOR:</u></p> <p>Prior to performing this JPM, obtain a copy of the latest revision of SO-030-001 and mark it as if it was actually to be performed. Fill out surveillance up to the point of shutting down the fan step 5.10</p> <ul style="list-style-type: none"> • If this JPM is performed in the simulator establish task conditions as directed on attached setup instructions. • When student is ready to begin JPM, place the Simulator in RUN. <p>The FAULTED step in this JPM is preceded by a fault statement in BOLD TYPE WITH ALL CAPITAL LETTERS.</p>			
	<p>Review surveillance complete with acceptance criteria satisfactorily signed.</p>	<p>Reviews acceptance criteria properly documented.</p> <p>Reviews system flow indication and reviews the procedure data record is filled out properly.</p>		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Page 5 of 7

Appl. To/JPM No.: S/RO 30.SO.001.151

Student Name: _____

Step	Action	Standard	Eval	Comments
	<u>FAULT STATEMENT: 'A' CREOASS fan will experience a trip of the thermal overloads shortly after the control switch is taken to the STOP position.</u>			
*2	Shutdown operating CREOASS unit by PLACING Selector Switch for CREOASS Fan 0V101A to STOP .	Rotate the 'A' CREOASS fan control switch counterclockwise to the stop positions and notes:		
3	CS EMERG OA SUP FAN FAILED (A01) alarm is received. <u>EVALUATOR NOTE:</u> Candidate may continue following the surveillance procedure after the above CS EMERG OA SUP FAN FAILED (A01) alarm is received confirming indications and damper positions. After confirming indications the candidate will investigate the CS EMERG OA SUP FAN FAILED (A01) alarm.	Verifies RED Light NOT LIT, AMBER Light LIT Reviews AR-029-001 (A01) for probable cause and operator actions (attached).		
4	Investigate AR-029-001 alarm by performing the following.			

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Page 6 of 7

Appl. To/JPM No.: S/RO 30.SO.001.151

Student Name: _____

Step	Action	Standard	Eval	Comments
5	CHECK CREOASS FAN 0V101A tripped.	Notes loss of light indication above Selector Switch for CREOASS Fan 0V101A, Verifies RED Light NOT LIT, WHITE light NOT LIT, AMBER Light NOT LIT, notes alarm response indicates that a loss of control power will cause the alarm.		
6	CHECK EOASS FAN 0V101B starts (if initiation signal present).	Notes no initiation signal present.		
7	CHECK CEOASS Fan 0V101A supply breaker MCC 0B136063, thermal overloads and control power fuse. <u>EVALUATOR CUE:</u> Role play as field operator and acknowledge request to check supply breaker at MCC 0B136063. Reply: Thermal overloads at supply breaker 0B136063 are tripped.	Dispatches an operator to check thermal overloads at supply breaker 0B136063		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Page 7 of 7

Appl. To/JPM No.: S/RO 30.SO.001.151

Student Name: _____

Step	Action	Standard	Eval	Comments
8	CHECK HD07812A, HD07814A, HD07811A position.	Verifies dampers are in the correct position for a shutdown CREOASS train.		
		Verifies closed (Red light out, Amber light lit): CREOASS A(B) Inlet Dmp HD07812A CREOASS Inlet Dmp HD07814A CREOASS Dsch Dmp HD07811A		
9	If fan tripped after starting time delay, CHECK fan integrity if accessible.	Recognizes fan did not trip after starting time delay.		
10	COMPLY with TS 3.7.3 and 3.7.4.	Informs Unit Supervisor to check the Technical Specification TS 3.7.3 and 3.7.4.		
*11	If CREOASS Fan 0V101A was in auto lead, place CREOASS Fan 0V101B in auto lead. <u>EVALUATOR:</u> This completes the JPM.	Places 0V101B CREOASS fan in AUTO LEAD.		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Page 7 of 7

Appl. To/JPM No.: S/RO 30.SO.001.151

Student Name: _____

Step	Action	Standard	Eval	Comments
8	CHECK HD07812A, HD07814A, HD07811A position.	Verifies dampers are in the correct position for a shutdown CREOASS train. Verifies closed (Red light out, Amber light lit): CREOASS A(B) Inlet Dmp HD07812A CREOASS Inlet Dmp HD07814A CREOASS Dsch Dmp HD07811A		
9	If fan tripped after starting time delay, CHECK fan integrity if accessible.	Recognizes fan did not trip after starting time delay.		
10	COMPLY with TS 3.7.3 and 3.7.4.	Informs Unit Supervisor to check the Technical Specification TS 3.7.3 and 3.7.4.		
*11	If CREOASS Fan 0V101A was in auto lead, place CREOASS Fan 0V101B in auto lead. <u>EVALUATOR:</u> This completes the JPM.	Places 0V101B CREOASS fan in AUTO LEAD.		

*Critical Step

#Critical Sequence

TASK CONDITIONS

- A. Unit 1 and Unit 2 are operating normally in Mode 1.
- B. The 'A' CREOASS charcoal has been replaced.
- C. The 'A' train of CREOASS has successfully completed 10 hours of run time per the monthly surveillance.

INITIATING CUE

Shutdown the 'A' CREOASS Fan per SO-030-001 Monthly Control Room Emergency Outside Air Supply System Operability Test.

TASK CONDITIONS

- A. Unit 1 and Unit 2 are operating normally in Mode 1.
- B. The 'A' CREOASS charcoal has been replaced.
- C. The 'A' train of CREOASS has successfully completed 10 hours of run time per the monthly surveillance.

INITIATING CUE

Shutdown the 'A' CREOASS Fan per SO-030-001 Monthly Control Room Emergency Outside Air Supply System Operability Test.

A01

CS EMERG
OA SUP FAN
FAILED
(A01)

SETPOINT: 5000 cfm

ORIGIN: 62FSLX-07811A (FSL07811A) or
74-136063 overload

1. PROBABLE CAUSE:

- 1.1 Fan Motor overload or electrical fault.
- 1.2 Mechanical failure of fan.
- 1.3 Loss of fan control power.
- 1.4 FD07816A not working properly.
- 1.5 HD07812A, HD07814A, HD07811A not open.

2. OPERATOR ACTION:

- 2.1 CHECK EOASS FAN 0V101A tripped.
- 2.2 CHECK EOASS FAN 0V101B starts (if initiation signal present).
- 2.3 CHECK EOASS Fan 0V101A supply breaker MCC 0B136063, thermal overloads and control power fuse.
- 2.4 CHECK HD07812A, HD07814A, HD07811A position.
- 2.5 If fan tripped after starting time delay, CHECK fan integrity if accessible.
- 2.6 COMPLY with TS 3.7.3 and 3.7.4.
- 2.7 If creoass fan 0V101A was in auto lead, place creoass fan 0V101B in auto lead.

3. AUTOMATIC ACTION:

- 3.1 EOASS FAN 0V101B starts (if initiation signal present)

4. REFERENCE:

- 4.1 E-332
- 4.2 E-197
- 4.3 VC-178
- 4.4 V-178
- 4.5 TS 3.7.3 and 3.7.4.

PENNSYLVANIA POWER & LIGHT COMPANY

JOB PERFORMANCE MEASURE

APPROVAL AND ADMINISTRATIVE DATA SHEET

S/RO	64.ON.005.101	2	06/17/03	202001 A2.10	3.5/3.9
Appl. To	JPM Number	Rev. No.	Date	NUREG 1123 Sys. No.	K/A

Task Title: Respond To A Reactor Recirculation Pump Dual Seal Failure IAW ON-164-003

Completed By:

Reviews:

Russ Halm

06/17/03

Writer

Date

Instructor/Writer

Date

Approval:

Requesting Supv./C.A.
Head

Date

Nuclear Trng. Supv.

Date

20/30

Date of Performance:

Allowed Time (Min.)

Time Taken (Min.)

JPM Performed By:

Student Name:

Last

First

M.I.

Employee #/S.S. #

Performance
Evaluation:

() Satisfactory

() Unsatisfactory

Evaluator Name:

Signature

Typed or Printed

Comments:

**REQUIRED TASK INFORMATION
JOB PERFORMANCE MEASURE
S/RO 64.ON.005.101**

I. SAFETY CONSIDERATIONS

- A. All Operations personnel are responsible for maintaining their radiation exposure As Low As Reasonably Achievable in accordance with OP-AD-002, Standards for Shift Operations.
- B. All applicable safety precautions shall be taken in accordance with established PPL safety policies and the Safety Rule Book, for example:
 - 1. Whenever any electrical panel is opened for inspection during JPM performance.
 - 2. Whenever entering any plant area where specific safety equipment; such as hearing or eye protection, safety shoes, hardhats, etc; is required and/or posted as being necessary.
- C. If in the judgement of the evaluator any safety issue occurs during the performance of a JPM, the JPM will be terminated until the issue is resolved.

II. REFERENCES

- A. ON-164-003, Reactor Recirculation Pump Dual Seal Failure (Rev. 15)
- B. AR-102-G01, RECIRC PUMP A SEAL LEAKAGE HI FLOW (Rev.21)
- C. AR-102-G02, RECIRC PUMP A SEAL STAGE HI-LO FLOW (Rev.21)

III. REACTIVITY MANIPULATIONS

This JPM satisfies the requirements of Operational Activity(s):

- A. 28 Reactor Recirc Pump Dual Seal Failure
- B. 33 10 Percent Power Change (Rods/Recirc)

IV. TASK CONDITIONS

- A. The plant is in Mode 1 at approximately 44 percent reactor power.
- B. You are the PCOM and will operate all controls for this event.

V. INITIATING CUE

Respond to all alarms received on 1C651 panel and take appropriate actions.

VI. TASK STANDARD

'A' Reactor Recirculation Pump shutdown and isolated.

VII. TASK SAFETY SIGNIFICANCE

Identify and isolate RCS leakage.

Inability to recognize and isolate a dual seal failure would result in excessive leakage into containment with potential for high drywell pressure alarm, ECCS initiation signals and Containment isolations.

PERFORMANCE CHECKLIST

Page 3 of 11

Appl. To/JPM No.: S/RO 64.ON.005.101

Student Name: _____

Step	Action	Standard	Eval	Comments
1	<p><u>EVALUATOR NOTE:</u></p> <ul style="list-style-type: none"> This JPM must be performed in the simulator. Establish task conditions as directed on attached setup instructions. When candidate is ready to begin JPM, place the simulator in RUN and Depress P-1. 	<p>Checks RECIRC PP A and B SEAL CAVITY 2 pressure indicators PI-B31-1R602A and 3A.</p> <p>Refers to <u>AR-102-G01</u> and <u>AR-102-G02.</u></p>		
	<p>Acknowledge and respond to alarms.</p>			
2	<p><u>EVALUATOR NOTE:</u></p> <p>Candidate should use the alarm response procedures to diagnose the dual seal failure. The candidate will need the next evaluator cue to make this diagnosis.</p>	<p>Determines that 'A' RRP has the dual seal failure.</p>		
	<p><u>EVALUATOR CUE:</u></p> <p>Inform the candidate when investigating leak rate by looking at the recorders for Drywell leakage that leakage indicates greater than 1 GPM</p>			

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Page 4 of 11

Appl. To/JPM No.: S/RO 64.ON.005.101

Student Name: _____

Step	Action	Standard	Eval	Comments
3	Candidate locates procedure and refers to appropriate section.	Obtains procedure ON-164-003, Reactor Recirculation Pump Dual Seal Failure and refers to section 3.1.		
4	Has Unit Supervisor record the date and time. <u>EVALUATOR CUE:</u> Inform the candidate the Unit Supervisor has signed and dated the procedure. <u>EVALUATOR NOTE:</u> Step 3.2 of the procedure directs the PCO to either determine the leak rate or obtain Shift Supervision approval to continue the procedure. If necessary instruct the student to continue with procedure.	Identifies Shift Supervision must sign to authorize implementation.		
5	Check if procedure should be continued. <u>EVALUATOR CUE:</u> Role play the SRO instruct the candidate to continue with procedure, ON-164-003, Reactor Recirculation Pump Dual Seal Failure.	<p>Informs supervisor that RCS leak rate check should be performed. (SO-100-006 attachments E and F) AND</p> <p>Requests direction for procedure completion.</p>		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Page 5 of 11

Appl. To/JPM No.: S/RO 64.ON.005.101

Student Name: _____

Step	Action	Standard	Eval	Comments
6	<p>Check drywell pressure rate of increase</p> <p><u>EVALUATOR CUE:</u> IF necessary, Role play the SRO instruct the candidate for the purposes of this JPM, drywell pressure is NOT increasing rapidly.</p>	Checks any drywell pressure indicator and determines drywell pressure is NOT increasing rapidly.		
7	Selects the correct procedure section.	Selects Section 3.4.		
8	<p>Checks if power reduction is required.</p> <p><u>CAUTION</u></p> <p>WHEN REDUCING RECIRC PUMP SPEED TO 30% RATED, PUMP SPEED SHOULD BE MAINTAINED AT APPROXIMATELY 500 RPM. SPEED OSCILLATIONS ARE POSSIBLE WHEN THE PUMP IS OPERATED 460 - 485 RPM.</p>	<p>Checks APRMs and core flow indications.</p> <p>Plots position on the Power/Flow Map to ensure power is below the 70 percent Rod Line.</p> <p>Determines power reduction is not required.</p>		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Page 6 of 11

Appl. To/JPM No.: S/RO 64.ON.005.101

Student Name: _____

Step	Action	Standard	Eval	Comments
*9	Reduce 1A RRP speed to 30%.	Depresses DEC pushbutton on REACTOR RECIRC PUMP A SPEED CONTROLLER SY-B31-1R621A until GEN 1A SPEED SI-14032A DECREASES to 30%.		
*10	Shutdown 1A RRP.	Depresses STOP pushbutton on MG SET A DRV MTR BKR HS-14001A.		
11	Determine actual core flow.	<p>Determines position on power to flow map:</p> <ul style="list-style-type: none"> • Determines 'B' RRP speed is <75% using GEN 1B Speed SI-140-32B. • Uses PICSY display to obtain computer point NJP51-Core PI Press. • Plots core plate d/p on form G0-100-009-2, Core Flow vs Core Pressure Drop. • Determines core flow value is 42-43,000 lbm/hr. • Plots position on Power to Flow Map using above value and current power. <p>Determines position is below the 70% rod line.</p>		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Page 7 of 11

Appl. To/JPM No.: S/RO 64.ON.005.101

Student Name: _____

Step	Action	Standard	Eval	Comments
12	Verify 1A RRP stops.	Checks MG SET A DRV MTR BKR HS-14001A Amber light LIT Red light NOT LIT GEN 1A SPEED SI-14032A DECREASES to 20 (Bottom scale) After ~20 seconds GENERATOR 1A FIELD BREAKER Amber light LIT Red light NOT LIT		
13	Comply with COLR. <u>EVALUATOR CUE:</u> Role play the SRO and instruct candidate that you will reference section 8 of the COLR for compliance.	Candidate informs Unit Supervisor of the need to reference section 8 of the COLR for compliance.		
14	Comply with Tech Spec LCOs 3.4.1. <u>EVALUATOR CUE:</u> Role play the SRO and instruct candidate that you will reference Tech Spec LCOs 3.4.1 for compliance.	Candidate informs Unit Supervisor of the need to reference Tech Spec LCOs 3.4.1 for compliance.		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Page 8 of 11

Appl. To/JPM No.: S/RO 64.ON.005.101

Student Name: _____

Step	Action	Standard	Eval	Comments
	<u>EVALUATOR NOTE:</u> The following steps will isolate the leaking seals and they must be completed in the order listed. Valves HV-143-F023A, HV-144-F100, HV-143-F031A, and HV-143-F032A have long stroke times (60-120 seconds).			
#*15	Close suction valve.	Depresses Close pushbutton on RECIRC PUMP A SUCT HV-143-F023A. Verifies Amber light LIT Red light NOT LIT		
#*16	Close RWCU suction from loop A.	Depresses Close pushbutton on RWCU SUCT LOOP A HV-144-F100. Verifies Amber light LIT Red light NOT LIT		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Page 9 of 11

Appl. To/JPM No.: S/RO 64.ON.005.101

Student Name: _____

Step	Action	Standard	Eval	Comments
#17	Place bypass switch to TEST.	Locates and inserts key in RECIRC A MOV OL BYPS HV-143-F031A and places to TEST position. Verifies: Status light RECIRC SYS A DISCHARGE VALVES IN TEST – LIT Alarm AR-102-I02 RECIRC LOOP A DISCHARGE VALVES IN TEST actuated		
#*18	Close discharge valve.	Depresses Close pushbutton on RECIRC PUMP A DSCH HV-143-F031A. Verifies Amber light LIT Red light NOT LIT		
#*19	Close discharge bypass.	Depresses Close pushbutton on RECIRC PUMP A DSCH BYPS HV-143-F032A. Verifies Amber light LIT Red light NOT LIT		
20	After 2 minutes Return bypass switch to NORM.	After 2 minutes Places RECIRC A MOV OL BYPS HV-143-F031A switch to NORM position.		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Page 10 of 11

Appl. To/JPM No.: S/RO 64.ON.005.101

Student Name: _____

Step	Action	Standard	Eval	Comments
*21	<p>Close CRD water supply.</p> <p><u>BOOTH CUE:</u> Acknowledge request to close CRD Water Supply to RRP A ISO 143F008A. Wait 2 minutes and Depress P-2 Then Contact CR and report CRD Water Supply to Unit 1RRP A ISO 143F008A is closed.</p> <p><u>EVALUATOR CUE:</u> This completes the JPM.</p> <p><u>EVALUATOR CUE:</u> <u>FOR SRO CANDIDATES ONLY</u> Give the SRO candidate the second cue sheet that addresses the Tech Spec LCO for Recirculation Loops Operating</p>	<p>Contacts NPO on radio or plant page, and requests CRD Water Supply to Unit 1 RRP A ISO 143F008A closed.</p>		
22	References Tech Specs	Obtains copy of Unit 1 Tech Specs		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Page 11 of 11

Appl. To/JPM No.: S/RO 64.ON.005.101

Student Name: _____

Step	Action	Standard	Eval	Comments
*23	<p>Determines Tech Spec 3.4.1 required actions</p> <p><u>EVALUATOR CUE:</u></p> <p>This completes the JPM.</p>	<p>Determines Tech Spec 3.4.1 required actions:</p> <p>Verify the following core thermal power limits within the limits specified in the COLR.</p> <p>LCO 3.2.1 APLHGR</p> <p>LCO 3.2.2 MCPR</p> <p>LCO 3.2.3 LHGR</p> <p>Verify LCO 3.3.1.1 RPS instrumentation function 2.b allowable value of table 3.3.1.1-1 is reset for single loop operation.</p> <p>Within 2 hours declare the 1A loop inoperable</p>		

*Critical Step

#Critical Sequence

SRO ONLY

TASK CONDITIONS

During the performance of this JPM, the procedure directed you to reference Tech Spec LCO 3.4.1 for compliance.

INITIATING CUE

Assuming we will remain at the current power level for the next 72 hours:

Refer to Tech Spec LCO 3.4.1 and identify all actions necessary to comply with this Tech Spec.

SRO ONLY

TASK CONDITIONS

During the performance of this JPM, the procedure directed you to reference Tech Spec LCO 3.4.1 for compliance.

INITIATING CUE

Assuming we will remain at the current power level for the next 72 hours:

Refer to Tech Spec LCO 3.4.1 and identify all actions necessary to comply with this Tech Spec.

TASK CONDITIONS

- A. The plant is in Mode 1 at approximately 44 percent reactor power.
- B. You are the PCOM and will operate all controls for this event.

INITIATING CUE

Respond to all alarms received on 1C651 panel and take appropriate actions.

TASK CONDITIONS

- A. The plant is in Mode 1 at approximately 44 percent reactor power.
- B. You are the PCOM and will operate all controls for this event.

INITIATING CUE

Respond to all alarms received on 1C651 panel and take appropriate actions.

PENNSYLVANIA POWER & LIGHT COMPANY

JOB PERFORMANCE MEASURE

APPROVAL AND ADMINISTRATIVE DATA SHEET

S/RO	51.OP.002.152	1	06/17/03	209001 A2.01	3.8/3.7
Appl. To	JPM Number	Rev. No.	Date	NUREG 1123 Sys. No.	K/A

Task Title: Perform Manual Startup Component by Component of Core Spray System in Accordance With OP-151-001

Completed By:	Reviews:		
Russ Halm	06/17/03		
Writer	Date	Instructor/Writer	Date

Approval:

Requesting Supv./C.A. Head	Date	Nuclear Trng. Supv.	Date
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	20	
Date of Performance:	Allowed Time (Min.)	Time Taken (Min.)

JPM Performed By:

Student Name: _____

Last	First	M.I.	Employee #/S.S. #
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Performance Evaluation: () Satisfactory () Unsatisfactory

Evaluator Name: _____

Signature	Typed or Printed
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Comments:

REQUIRED TASK INFORMATION
JOB PERFORMANCE MEASURE
S/RO 51.OP.002.152

I. SAFETY CONSIDERATIONS

- A. All Operations personnel are responsible for maintaining their radiation exposure As Low As Reasonably Achievable in accordance with OP-AD-002, Standards for Shift Operations.
- B. All applicable safety precautions shall be taken in accordance with established PPL safety policies and the Safety Rule Book, for example:
 - 1. Whenever any electrical panel is opened for inspection during JPM performance.
 - 2. Whenever entering any plant area where specific safety equipment; such as hearing or eye protection, safety shoes, hardhats, etc; is required and/or posted as being necessary.
- C. If in the judgement of the evaluator any safety issue occurs during the performance of a JPM, the JPM will be terminated until the issue is resolved.

II. REFERENCES

- A. OP-151-001 Core Spray System (Revision 24)

III. REACTIVITY MANIPULATIONS

This JPM satisfies the requirements of Operational Activity(s):

None

IV. TASK CONDITIONS

- A. The Core Spray System is aligned for automatic initiation in accordance with OP-151-001.
- B. A LOCA has occurred.
- C. Generator lockouts have been reset.
- D. CS System failed to auto initiate.

V. INITIATING CUE

Manually initiate both loops of core spray.

VI. TASK STANDARD

Both loops of core spray injecting into the RPV.

VII. TASK SAFETY SIGNIFICANCE

Initiate adequate core heat removal.

Failure to perform this task could result in inadequate core decay heat removal and possible fuel clad damage.

PERFORMANCE CHECKLIST

Page 3 of 8

Appl. To/JPM No.: S/RO 51.OP.002.152

Student Name: _____

Step	Action	Standard	Eval	Comments
	<u>EVALUATOR NOTE:</u> <ul style="list-style-type: none"> This JPM must be performed in the simulator. Establish task conditions as directed on attached setup instructions. The FAULTED step in this JPM is preceded by a fault statement in BOLD TYPE WITH ALL CAPITAL LETTERS. When candidate is ready to begin JPM, place the simulator in RUN. 			
1	Locates procedure and refers to appropriate section.	Obtains procedure OP-151-001 Core Spray System and refers to section 3.3.		
2	Reviews prerequisites and precautions.	Reviews prerequisites and precautions.		
*3	Initiate "A" Loop of Core Spray.	Rotates the collar on Core Spray Loop "A" MAN INIT HS-E21-1S16A pushbutton to the ARMED position. Verifies that AR-109-A01. Core Spray Loop "A" Man Init Switch Armed, annunciator alarms. Depress Core Spray Loop "A" MAN INIT HS-E21-1S16A pushbutton. Verifies CORE SPRAY LOOP A ACTUATED alarm LIT.		

*Critical Step

#Critical Sequence

Form STCP-QA-125A

Rev. 4, (05/00)

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PERFORMANCE CHECKLIST

Page 4 of 8

Appl. To/JPM No.: S/RO 51.OP.002.152

Student Name: _____

Step	Action	Standard	Eval	Comments
	EVALUATOR NOTE: In an effort to initiate both loops of core spray as quickly as possible, the candidate may elect to initiate loop B spray by performing steps 7-13 of this JPM before completing steps 4-6. This is acceptable.			
4	Observe response of other systems to initiation of core spray.	Verifies: DG "A" started by observing DG voltage "A" DW unit cooler fans running in FAST trip Red high speed fast light-NOT LIT		
5	Observe core spray system response.	Verifies: 1P206A and C running. Amber light NOT LIT Red light LIT CORE SPRAY LOOP A INIT SIG RESET HS-E21-1S17A Green light LIT CORE SPRAY LOOP A IB INJ SHUTOFF HV-152-F005A open. Amber light NOT LIT Red light LIT		

*Critical Step

#Critical Sequence

Form STCP-QA-125A

Rev. 4, (05/00)

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PERFORMANCE CHECKLIST

Page 5 of 8

Appl. To/JPM No.: S/RO 51.OP.002.152

Student Name: _____

Step	Action	Standard	Eval	Comments
	<p>CAUTION</p> <p>AVOID POTENTIAL PUMP/MOTOR DAMAGE, CORE SPRAY LOOP A(B) INJ SHUTOFF HV-152F005A(B) MUST BE THROTTLED AS NECESSARY TO PREVENT EXCEEDING MAXIMUM PUMP RUN OUT CURRENT OF 90 AMPS PER PUMP.</p>	<p>CORE SPRAY LOOP A OB INJ SHUTOFF HV-152-F004A open. Amber light NOT LIT Red light LIT</p> <p>CORE SPRAY LOOP A TEST TO SUPP POOL HV-152-F015A closed. Amber light LIT Red light NOT LIT</p> <p>CORE SPRAY LOOP A MIN FLOW HV-152-F031A closed. Amber light LIT Red light NOT LIT</p> <p>CS Unit Coolers 1V211A and C as indicated on 1C681 running. Red light LIT Amber and white lights NOT LIT</p>		
6	Verifies injection flowrate.	Observes flowrate on FI-E21-1R601A.		

*Critical Step

#Critical Sequence

Form STCP-QA-125A

Rev. 4, (05/00)

Page 1 of 1

2003 NRC Exam Rev 2

PERFORMANCE CHECKLIST

Page 6 of 8

Appl. To/JPM No.: S/RO 51.OP.002.152

Student Name: _____

Step	Action	Standard	Eval	Comments
7	<p><u>FAULT STATEMENT</u> LOOP B CORE SPRAY FAILS TO INITIATE WHEN THE MANUAL PUSHBUTTON IS ARMED AND DEPRESSED.</p> <p>Initiate "B" Loop of Core Spray.</p> <p><u>EVALUATOR NOTE:</u> The following annunciator alarms, AR113-A01 (Core Spray Loop "B" Initiation Switch Armed).</p>	<p>Rotates the collar on Core Spray Loop "B" MAN INIT HS-E21-1S16B pushbutton to the ARMED position.</p> <p>Notes that AR-113-A01, Core Spray Loop "B" Man Init Switch Armed, annunciator alarms.</p> <p>Depress Core Spray Loop "B" MAN INIT HS - E21-1S16B pushbutton.</p> <p>Notes that Core Spray Loop "B" failed to initiate.</p>		
	<p><u>EVALUATOR CUE</u> As Unit Supervisor acknowledge notification of division 2 Core Spray initiation failure.</p>	<p>Informs Unit Supervisor division 2 manual initiation has failed.</p> <p>Notes Manual Startup required for "B" Loop Core Spray.</p>		
8	<p>Transitions to appropriate section of the procedure.</p> <p><u>EVALUATOR NOTE:</u> Manual startup component by component of "B" Loop of CS System will be accomplished in the following steps.</p>	<p>Moves to section 3.3.4 of procedure OP-151-001 Core Spray System.</p>		

*Critical Step

#Critical Sequence

Form STCP-QA-125A

Rev. 4, (05/00)

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PERFORMANCE CHECKLIST

Page 7 of 8

Appl. To/JPM No.: S/RO 51.OP.002.152

Student Name: _____

Step	Action	Standard	Eval	Comments
*9	Start Core Spray Pumps B and D.	Place the HS for 1P206B and D to the START position. Verifies: Amber lights NOT LIT; Red lights LIT		
10	Open or check open OB INJ SHUTOFF HV-152-F004B.	Verifies that HV-152-F004B open. Amber light NOT LIT Red light LIT		
*11	When Reactor pressure ≤ 436 psig, place LO RX PRESS PERM Switch HS-152-15249B to BYPASS. <u>EVALUATOR NOTE:</u> <ul style="list-style-type: none"> When HS for HV-152-F005B taken to OPEN position; red light on. When CS system flow ≥ 635 gpm F031B; amber light on. 	When Reactor pressure ≤ 436 psig, removes cover and places HS-15249B to BYPASS. Verifies MIN FLOW HV-152-F031B closes by Checking Amber light LIT Red light NOT LIT		
*12	THROTTLE OPEN CORE SPRAY LOOP "B" IB INJ SHUTOFF HV-152-F005B to establish loop flow $\leq 6,350$ gpm for two-pump operation.	Throttles open HV-152-F005B		
13	Verifies injection flowrate.	Observes flowrate on FI-E21-1R601B.		

*Critical Step

#Critical Sequence

Form STCP-QA-125A

Rev. 4, (05/00)

Page 1 of 1

2005 INKUL EXAM REV. 2

PERFORMANCE CHECKLIST

Page 8 of 8

Appl. To/JPM No.: S/RO 51.OP.002.152

Student Name: _____

Step	Action	Standard	Eval	Comments
14	<p>Check CS room coolers B/D AUTO starts.</p> <p><u>EVALUATOR CUE:</u></p> <p>This completes the JPM.</p>	<p>Check CS Unit Coolers 1V211B and D AUTO START as indicated on 1C681.</p> <p>Verifies: Red light LIT Amber and white lights NOT LIT</p>		

*Critical Step

#Critical Sequence

Form STCP-QA-125A

Rev. 4, (05/00)

Page 1 of 1

2003 NRC Exam Rev. 2

TASK CONDITIONS

- A. The Core Spray System is aligned for automatic initiation in accordance with OP-151-001.
- B. A LOCA has occurred.
- C. Generator lockouts have been reset.
- D. CS System failed to auto initiate.

INITIATING CUE

Manually initiate both loops of core spray.

TASK CONDITIONS

- A. The Core Spray System is aligned for automatic initiation in accordance with OP-151-001.
- B. A LOCA has occurred.
- C. Generator lockouts have been reset.
- D. CS System failed to auto initiate.

INITIATING CUE

Manually initiate both loops of core spray.

PENNSYLVANIA POWER & LIGHT COMPANY
JOB PERFORMANCE MEASURE
APPROVAL AND ADMINISTRATIVE DATA SHEET

S/RO	84.ON.003.101	1	06/17/03	239001 A4.01	4.2/4.0
Appl. To	JPM Number	Rev. No.	Date	NUREG 1123 Sys. No.	K/A

Task Title: Main Steam Line Isolation and Quick Recovery in Accordance With ON-184-001

Completed By:		Reviews:	
<u>Russ Halm</u> Writer	<u>06/17/03</u> Date	<u></u> Instructor/Writer	<u></u> Date

Approval:

<u></u> Requesting Supv./C.A. Head	<u></u> Date	<u></u> Nuclear Trng. Supv.	<u></u> Date
--	-----------------	--------------------------------	-----------------

<u></u> Date of Performance:	<u>50</u> Allowed Time (Min.)	<u></u> Time Taken (Min.)
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JPM Performed By:

Student Name:

Last	First	M.I.	Employee #/S.S. #
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Performance Evaluation: () Satisfactory () Unsatisfactory

Evaluator Name:

Signature	Typed or Printed
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Comments:

REQUIRED TASK INFORMATION
JOB PERFORMANCE MEASURE
S/RO 84.ON.003.101

I. SAFETY CONSIDERATIONS

- A. All Operations personnel are responsible for maintaining their radiation exposure As Low As Reasonably Achievable in accordance with OP-AD-002, Standards for Shift Operations.
- B. All applicable safety precautions shall be taken in accordance with established PPL safety policies and the Safety Rule Book, for example:
 - 1. Whenever any electrical panel is opened for inspection during JPM performance.
 - 2. Whenever entering any plant area where specific safety equipment; such as hearing or eye protection, safety shoes, hardhats, etc; is required and/or posted as being necessary.
- C. If in the judgement of the evaluator any safety issue occurs during the performance of a JPM, the JPM will be terminated until the issue is resolved.

II. REFERENCES

- A. ON-184-001, MAIN STEAM LINE ISOLATION AND QUICK RECOVERY (Rev. 6)

III. REACTIVITY MANIPULATIONS

This JPM satisfies the requirements of Operational Activity(s):
None

IV. TASK CONDITIONS

- A. An MSIV isolation and reactor scram occurred from 100% reactor power.
- B. The cause of the MSIV isolation was a faulty isolation logic surveillance test procedure.
- C. HPCI and/or RCIC injection is controlling reactor water level.
- D. Reactor pressure is controlled by manual SRV actuation.
- E. Restoration of normal steam loads and turbine bypass system is required for a reactor cooldown.

V. INITIATING CUE

Perform a quick recovery from a Main Steam Line Isolation and reopen the MSIVs.

VI. TASK STANDARD

MSIVs OPEN

VII. TASK SAFETY SIGNIFICANCE

Inability to reopen the MSIVs would eliminate a heat sink requiring additional unnecessary energy to be added to the Primary Containment.

PERFORMANCE CHECKLIST

Page 3 of 12

Appl. To/JPM No.: S/RO 84.ON.003.101

Student Name: _____

Step	Action	Standard	Eval	Comments
	EVALUATOR NOTE: <ul style="list-style-type: none"> This JPM should be performed in the Simulator. Establish task conditions as directed on attached setup instructions. When student is ready to begin JPM, place the Simulator in RUN. 			
1	Obtain a controlled copy of ON-184-001.	Obtains Control copy of ON-184-001.		
2	RECORD date and time of this event.			
*3	PLACE control switches for following to CLOSE: <ul style="list-style-type: none"> Mn Stm Line A IB Iso HV-141-F022A Mn Stm Line B IB Iso HV-141-F022B Mn Stm Line C IB Iso HV-141-F022C Mn Stm Line D IB Iso HV-141-F022D Mn Stm Line A OB Iso HV-141-F028A Mn Stm Line B OB Iso HV-141-F028B Mn Stm Line C OB Iso HV-141-F028C Mn Stm Line D OB Iso HV-141-F028D 	Places the control switch to CLOSE for the following: <ul style="list-style-type: none"> MN STM LINE A IB ISO HV-141-F022A MN STM LINE B IB ISO HV-141-F022B MN STM LINE C IB ISO HV-141-F022C MN STM LINE D IB ISO HV-141-F022D MN STM LINE A OB ISO HV-141-F028A MN STM LINE B OB ISO HV-141-F028B MN STM LINE C OB ISO HV-141-F028C MN STM LINE D OB ISO HV-141-F028D 		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Page 4 of 12

Appl. To/JPM No.: S/RO 84.ON.003.101

Student Name: _____

Step	Action	Standard	Eval	Comments
4	ENSURE Mn Stm Line IB Drain HV-141-F016 CLOSED.	Checks amber light LIT and red light NOT LIT for: • MN STM LINE IB DRAIN HV-141-F016		
5	ENSURE Mn Stm Line OB Drain HV-141-F019 CLOSED.	Checks amber light LIT and red light NOT LIT for: • MN STM LINE OB DRAIN HV-141-F019		
6	ENSURE Mn Stm Line Drain to Cdsr HV-141-F021 CLOSED.	Checks amber light LIT and red light NOT LIT for: • MN STM LINE IB DRAIN TO CDSR HV-141-F021		
7	ENSURE following TRIPPED: • Main Turbine • Reactor Feed Pump Turbine A • Reactor Feed Pump Turbine B • Reactor Feed Pump Turbine C	For the Main Turbine: • Checks Main Turbine trip annunciation ON • Red Main Turbine Trip status light is LIT and the green Reset status light is NOT LIT. For each RFP: • Checks RFP Trip annunciation LIT • Amber light is LIT and red light above the Trip & Reset switch NOT LIT		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Page 5 of 12

Appl. To/JPM No.: S/RO 84.ON.003.101

Student Name: _____

Step	Action	Standard	Eval	Comments
8	If isolation due to EHC System malfunction: <ul style="list-style-type: none"> • DEPRESS standby EHC Hyd Fluid Pump 1P113B(A) STOP push button. • DEPRESS operating EHC Hyd Fluid Pump 1P113A(B) STOP push button. • ENSURE Turbine main stop valves CLOSED. • ENSURE Turbine bypass valves CLOSED. 	Determines the isolation was <u>not</u> due to an EHC system malfunction. (Based on initial conditions)		
9	CLOSE following by depressing Drip Leg Drn HS-10112 AUTO push button: <ul style="list-style-type: none"> • Drip Leg Drn HV-10112A1. • Drip Leg Drn HV-10112B1. • Drip Leg Drn HV-10112C1. • Drip Leg Drn HV-10112D1. 	Depresses the AUTO pushbutton on DRIP LEG DRN HS-10112. Checks white light LIT and red light NOT LIT. Checks amber light LIT and red light NOT LIT for : <ul style="list-style-type: none"> • DRIP LEG DRAIN HV-10112A1 • DRIP LEG DRAIN HV-10112B1 • DRIP LEG DRAIN HV-10112C1 • DRIP LEG DRAIN HV-10112D1 		
10	CLOSE BPV Hdr Drip Leg Drn Byps HV-10108A by depressing HS-10108A AUTO push button.	Depresses the AUTO pushbutton on HS-10108A to CLOSE HV-10108A. AND Verifies the white light is LIT and the red light is NOT LIT.		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Page 6 of 12

Appl. To/JPM No.: S/RO 84.ON.003.101

Student Name: _____

Step	Action	Standard	Eval	Comments
11	CLOSE MSV Bst Drn HV-10101 A,B,C,D by depressing common CLOSE push button.	Depresses the CLOSE pushbutton for MSV BST DRN HV-10101A,B,C,D. AND Verifies amber light LIT and red light NOT LIT.		
12	CLOSE SSE Mn Stm Sup CV HV-10703.	Depress and hold the CLOSE pushbutton for SSE MN STM SUP CV HV-10703. AND Verifies amber light LIT and red light NOT LIT.		
13	ENSURE SSE Mn Stm Sup Ln Drn HV-10767 CLOSED.	Verifies amber light LIT and red light NOT LIT for SSE MN STM SUP LN DRN HV-10767.		
14	ENSURE SSE Mn Stm Sup Ln Drn HV-10768 CLOSED.	Verifies amber light LIT and red light NOT LIT for SSE MN STM SUP LN DRN HV-10768.		
15	CLOSE SSE Press Ctlr Iso HV-10704, <u>AND</u>	Depresses the CLOSE pushbutton for SSE PRESS CTLR ISO HV-10704. AND Verifies amber light LIT and red light NOT LIT.		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Page 7 of 12

Appl. To/JPM No.: S/RO 84.ON.003.101

Student Name: _____

Step	Action	Standard	Eval	Comments
16	THROTTLE OPEN SSE Press Ctlr Byps HV-10705 to establish 0.25 to 0.50 psig on SSE Pressure PI-10723. <u>EVALUATOR CUE:</u> After HV-10705 is throttled open several times inform the candidate PI-10723 is reading 0.4 psig	THROTTLE OPEN SSE PRESS CTRL BYPS HV-10705 to establish 0.25 to 0.5 psig on SSE Pressure indication PI-10723. AND Verifies red and amber lights LIT for HV-10705.		
17	CLOSE Mn Stm SJAE Iso HV-10107. When directed by Shift Supervision AND initiating event is determined and cleared, RESET NSSSS Main Steam Line Isolation by depressing: <u>EVALUATOR CUE:</u> As the Unit Supervisor direct resetting the NSSSS Main Steam Line Isolation.	Depress the CLOSE pushbutton for MN STM SJAE ISO HV-10107. AND Verifies the amber light LIT and red light NOT LIT.		
*18	Mn Stm Line Div 1 Iso Reset HS-B21-1S32 Reset push button.	Depresses the RESET pushbutton for: • MN STM LINE DIV 1 ISO RESET HS-B21-1S32.		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Page 8 of 12

Appl. To/JPM No.: S/RO 84.ON.003.101

Student Name: _____

Step	Action	Standard	Eval	Comments
*19	<p>Mn Stm Line Div 2 Iso Reset HS-B21-1S33 Reset push button.</p> <p>NOTE: If primary containment integrity in jeopardy, it is acceptable to open MSIV's (IB first) with $\Delta P > 200$ PSID. This action will not damage MSIV's. If conditions permit, equalizing around MSIV's is preferred.</p> <p><u>EVALUATOR CUE:</u> If asked by the candidate if primary containment is in jeopardy reply, " PRIMARY CONTAINMENT INTEGRITY IS IN JEOPARDY"</p>	<p>Depresses the RESET pushbutton for:</p> <ul style="list-style-type: none"> • MN STM LINE DIV 2 ISO RESET HS-B21-1S33. <p>AND</p> <p>Verifies that all 4 white status lights are LIT for the MSIV trip logic.</p> <p>Candidate asks if Primary Containment is in Jeopardy.</p>		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Page 9 of 12

Appl. To/JPM No.: S/RO 84.ON.003.101

Student Name: _____

Step	Action	Standard	Eval	Comments
*20	To OPEN IB MSIV's PLACE following control switches to AUTO: Mn Stm Line A IB Iso HV-141-F022A. Mn Stm Line B IB Iso HV-141-F022B. Mn Stm Line C IB Iso HV-141-F022C. Mn Stm Line D IB Iso HV-141-F022D.	Places the control switch to AUTO for: <ul style="list-style-type: none"> • MN STM LINE A IB ISO HV-141-F022A • MN STM LINE B IB ISO HV-141-F022B • MN STM LINE C IB ISO HV-141-F022C • MN STM LINE D IB ISO HV-141-F022D <p>AND</p> <p>Verifies amber light NOT LIT and red light LIT for each valve.</p>		
#21	ALIGN for steam line pressurization as follows: PLACE AC MOV OL Byps HS-B21-1S37A to TEST. PLACE DC MOV OL Byps HS-B21-1S37B to TEST.	Inserts key and rotates clockwise to place AC MOV OL BYPS HS-B21-1S37A to TEST. AND Verifies annunciator AR-111-H03, AC CONTN ISO VLVS IN TEST is LIT. Inserts key and rotates clockwise to place DC MOV OL BYPS HS-B21-1S37B to TEST. AND Verifies annunciator AR-112-H03, OUTBOARD ISOLATION VLVS IN TEST is LIT.		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Page 10 of 12

Appl. To/JPM No.: S/RO 84.ON.003.101

Student Name: _____

Step	Action	Standard	Eval	Comments
	OPEN Mn Stm Line IB Drain HV-141-F016.	Place switch to OPEN for MN STM LINE IB DRAIN HV-141-F016. AND Verifies amber light NOT LIT and red light LIT		
	OPEN Mn Stm Line OB Drain HV-141-F019.	Place switch to OPEN for MN STM LINE OB DRAIN HV-141-F019. AND Verifies amber light NOT LIT and red light LIT		
	ENSURE Mn Steam Line Warm Up HV-141-F020 OPEN.	Verifies red light LIT and amber light NOT LIT.		
	After 2 minutes, PLACE AC MOV OL Byps HS-B21-1S37A to NORM.	After 2 minutes, place the AC MOV OL BYPS HS-B21-1S37A to NORM. AND Verifies annunciator AR-111-H03, AC CONTN ISO VLVS IN TEST is NOT LIT		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Page 11 of 12

Appl. To/JPM No.: S/RO 84.ON.003.101

Student Name: _____

Step	Action	Standard	Eval	Comments
#22	<p>After 2 minutes, PLACE DC MOV OL Byps HS-B21-1S37B to NORM.</p> <p>OBSERVE main steam line pressure INCREASING on Main Stm Press PR-10101C.</p> <p><u>CAUTION</u> OPENING MSIV'S WITH LARGE DIFFERENTIAL PRESSURE WILL CAUSE RPV PRESSURE TO DROP RAPIDLY AND RPV LEVEL TO SWELL.</p>	<p>After 2 minutes, place the DC MOV OL BYPS HS-B21-1S37B to NORM.</p> <p>AND</p> <p>Verifies annunciator AR-112-H03, OUTBOARD ISOLATION VLVS IN TEST is NOT LIT</p> <p>Verifies main steam line pressure INCREASING on Main Stm Press PR-10101C.</p>		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Page 12 of 12

Appl. To/JPM No.: S/RO 84.ON.003.101

Student Name: _____

Step	Action	Standard	Eval	Comments
#23	<p>When differential pressure across MSIVs is between 50 psid and 200 psid, OPEN OB MSIV's by PLACING following control switches to AUTO:</p> <p>Mn Stm Line A OB Iso HV-141-F028A</p> <p>Mn Stm Line B OB Iso HV-141-F028B</p> <p>Mn Stm Line C OB Iso HV-141-F028C</p> <p>Mn Stm Line D OB Iso HV-141-F028D</p> <p><u>EVALUATOR CUE:</u> Inform the student the JPM is complete.</p>	<p>Compares RPV pressure with steam line pressure on PR-10101C until the d/p is between 50 and 200 psid</p> <p>AND</p> <p>When outboard MSIV d/p is between 50 and 200 psid, OPENS the outboard MSIVs by placing the control switch to AUTO for:</p> <ul style="list-style-type: none"> • MN STM LINE A OB ISO HV-141-F028A • MN STM LINE B OB ISO HV-141-F028B • MN STM LINE C OB ISO HV-141-F028C • MN STM LINE D OB ISO HV-141-F028D <p>AND</p> <p>Verifies amber light NOT LIT and red light LIT for each valve.</p>		

*Critical Step

#Critical Sequence

TASK CONDITIONS

- A. An MSIV isolation and reactor scram occurred from 100% reactor power.
- B. The cause of the MSIV isolation was a faulty isolation logic surveillance test procedure.
- C. HPCI and/or RCIC injection is controlling reactor water level.
- D. Reactor pressure is controlled by manual SRV actuation.
- E. Restoration of normal steam loads and turbine bypass system is required for a reactor cooldown.

INITIATING CUE

Perform a quick recovery from a Main Steam Line Isolation and reopen the MSIVs.

TASK CONDITIONS

- A. An MSIV isolation and reactor scram occurred from 100% reactor power.
- B. The cause of the MSIV isolation was a faulty isolation logic surveillance test procedure.
- C. HPCI and/or RCIC injection is controlling reactor water level.
- D. Reactor pressure is controlled by manual SRV actuation.
- E. Restoration of normal steam loads and turbine bypass system is required for a reactor cooldown.

INITIATING CUE

Perform a quick recovery from a Main Steam Line Isolation and reopen the MSIVs.

PENNSYLVANIA POWER & LIGHT COMPANY

JOB PERFORMANCE MEASURE

APPROVAL AND ADMINISTRATIVE DATA SHEET

S/RO	04.SO.002.251	0	06/15/03	262001 K4.04	2.8/3.1
Appl. To	JPM Number	Rev. No.	Date	NUREG 1123 Sys. No.	K/A

Task Title: MONTHLY 4KV BUS DEGRADED VOLTAGE CHANNEL FUNCTIONAL TEST

Completed By:

Reviews:

Russ Halm	06/15/03		
Writer	Date	Instructor/Writer	Date

Approval:

Requesting Supv./C.A. Head	Date	Nuclear Trng. Supv.	Date
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	30	
Date of Performance:	Allowed Time (Min.)	Time Taken (Min.)

JPM Performed By:

Student Name:				
	Last	First	M.I.	Employee #/S.S. #

Performance () Satisfactory () Unsatisfactory
Evaluation:

Evaluator Name:		
	Signature	Typed or Printed

Comments:

**REQUIRED TASK INFORMATION
JOB PERFORMANCE MEASURE
S/RO 04.SO.002.251**

I. SAFETY CONSIDERATIONS

- A. All Operations personnel are responsible for maintaining their radiation exposure As Low As Reasonably Achievable in accordance with OP-AD-002, Standards for Shift Operations.
- B. All applicable safety precautions shall be taken in accordance with established PPL safety policies and the Safety Rule Book, for example:
 - 1. Whenever any electrical panel is opened for inspection during JPM performance.
 - 2. Whenever entering any plant area where specific safety equipment; such as hearing or eye protection, safety shoes, hardhats, etc; is required and/or posted as being necessary.
- C. If in the judgement of the evaluator any safety issue occurs during the performance of a JPM, the JPM will be terminated until the issue is resolved.

II. REFERENCES

- A. SO-204-001 MONTHLY 4KV BUS 2A201, 2A202, 2A203, AND 2A204 DEGRADED VOLTAGE CHANNEL FUNCTIONAL TEST, REV. 8

III. REACTIVITY MANIPULATIONS

This JPM satisfies the requirements of Operational Activity(s):

None

IV. TASK CONDITIONS

- A. Unit 2 is in MODE 1.
- B. No other testing is being performed on Unit 2.

V. INITIATING CUE

Perform SO-204-001, MONTHLY 4KV BUS 2A201, 2A202, 2A203, AND 2A204 DEGRADED VOLTAGE CHANNEL FUNCTIONAL TEST.

VI. TASK STANDARD

Blocks trip circuit prior to testing and enables trip circuit when testing is complete. Determines acceptance criteria are met for bus 2A201 and acceptance criteria are not met for function 2 on bus 2A202.

VII. TASK SAFETY SIGNIFICANCE

Determine operability of 4KV busses.

Failure to perform correctly could result in inoperable 4KV busses.

PERFORMANCE CHECKLIST

Page 3 of 13

Appl. To/JPM No.: S/RO 04.SO.002.251

Student Name: _____

Step	Action	Standard	Eval	Comments
	<p><u>EVALUATOR NOTE:</u></p> <ul style="list-style-type: none"> • This JPM must be performed in plant. • Ensure the following material is available to support performance of this JPM: <ul style="list-style-type: none"> • A copy of SO-204-001. • Attach a surveillance authorization coversheet with the appropriate data completed. • Stopwatch for each evaluator. • The FAULTED step in this JPM is preceded by a fault statement in BOLD TYPE WITH ALL CAPITAL LETTERS. <p><u>EVALUATOR NOTE:</u> To begin this JPM, provide the candidate with the Task Conditions and Initiating Cue Sheet.</p> <p><u>EVALUATOR CUE</u> Give the candidate a copy of the surveillance to be performed.</p>			
1	Reviews the coversheet.	Verify authorization to commence by Shift Supervision signature with date a time completed.		
	<p><u>EVALUATOR NOTE:</u> Provide the candidate time to review the test procedure.</p>			
2	Obtains stopwatch.	Stopwatch obtained.		
3	Review precautions.	Precautions reviewed.		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Page 4 of 13

Appl. To/JPM No.: S/RO 04.SO.002.251

Student Name: _____

Step	Action	Standard	Eval	Comments
4	Record plant MODE. <u>EVALUATOR NOTE</u> Candidate may elect to confirm buses are de-energized by contacting the control room.	Enters 1 for MODE and initials the confirm line.		
5	Verify Unit 2 ESS buses energized.	Observes white light LIT on 0C653 for buses: <ul style="list-style-type: none"> • 2A201 • 2A203 • 2A202 • 2A204 		
6	Document step completion.	Initials confirm space for each bus.		
7	Identify testing restrictions.	Determines no other testing is permitted on the bus being tested by this surveillance.		
8	Document step completion. <u>EVALUATOR NOTE:</u> Candidate will proceed to Unit 2 Reactor Building inside the RCA to continue. NOTE 1 Panel 0C653 alarm, 4KV BUS LO VOLT/PROT CKT TROUBLE for affected bus will annunciate and clear periodically during test	Initials confirm space.		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Page 5 of 13

Appl. To/JPM No.: S/RO 04.SO.002.251

Student Name: _____

Step	Action	Standard	Eval	Comments
	<p>NOTE 2 Those steps of procedure designated by an asterisk (*) immediately to left of step number require entry(ies) to be recorded on Data Form.</p> <p>CAUTION BUS REMAINS ENERGIZED. EXERCISE CAUTION WORKING AROUND ENERGIZED BUSES. CARE MUST BE TAKEN NOT TO PUSH, PULL OR DROP ANY OBJECTS NEAR ENERGIZED EQUIPMENT.</p>			
9	Inform Shift Supervision to enter TS 3.3.8.1.	Using plant page/radio contacts control room/Unit Supervisor to enter TS 3.3.8.1 for bus 2A201.		
10	Document step completion.	Initials confirm space.		
	<p>CAUTION DEGRADED GRID PROTECTION FOR ESS BUS 2A201 DISABLED DURING PERFORMANCE OF THIS SECTION.</p>			
*11	Block protection circuit.	Place Degraded Voltage Trip Enable Test Switch HSE-2A20102B to TRIP BLOCKED position.		
12	Document step completion.	Initials confirm space.		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Page 6 of 13

Appl. To/JPM No.: S/RO 04.SO.002.251

Student Name: _____

Step	Action	Standard	Eval	Comments
13	Confirm 4KV BUS 2A(2A201) LO VOLT/PROT CKT TROUBLE ALARM received at panel 0C653. <u>EVALUATOR CUE</u> Inform candidate the alarm was received.	Using plant page/radio contacts Unit 2 control room to confirm the alarm was received.		
14	Document step completion.	Initials confirm space.		
15	Perform light test. <u>EVALUATOR CUE</u> Inform candidate the white lights are LIT.	Place Degraded Voltage Ckt Test Switch HSE-2A20102A to LIGHT TEST and CONFIRM following Degraded Voltage Ckt Test Light ILLUMINATE: <ul style="list-style-type: none"> Relay Ckt 27B1/27B2 Relay Ckt 27B3/27B4 Verify white lights LIT.		
16	Document step completion.	Initials confirm spaces.		
17	Return test switch to normal. <u>EVALUATOR CUE</u> Inform candidate the white lights are NOT LIT.	Place Test Switch HSE-2A20102A to Normal and CONFIRM following Test lights EXTINGUISH: <ul style="list-style-type: none"> Relay Ckt 27B1/27B2 Relay Ckt 27B3/27B4 Verify white lights are NOT LIT.		
18	Document step completion.	Initials confirm spaces.		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Page 7 of 13

Appl. To/JPM No.: S/RO 04.SO.002.251

Student Name: _____

Step	Action	Standard	Eval	Comments
*19	<p>Test circuit and time relay drop out.</p> <p><u>EVALUATOR CUE</u> Inform candidate the white lights are LIT with the following times:</p> <ul style="list-style-type: none"> Relay Ckt 27B3/27B4 (~3 seconds) Relay Ckt 27B1/27B2 (~5 minutes) <p><u>EVALUATOR NOTE:</u> Bus 2A201 acceptance criteria for function 2 is 1.a (65%) and function 3 is 2.a (93%) on data form.</p>	<p>Place Test Switch HSE-2A20102A to CIRCUIT TEST and simultaneously starts the stop watch and CONFIRM following Test lights ILLUMINATE:</p> <ul style="list-style-type: none"> Relay Ckt 27B3/27B4 (~3 seconds) Relay Ckt 27B1/27B2 (~5 minutes) <p>Verify white lights are LIT and note times on stopwatch.</p> <p>Record acceptance criteria as acceptable on the data form by circling yes and initial the confirm space for function 2 and 3.</p>		
*20	<p>Return test switch to normal.</p> <p><u>EVALUATOR CUE</u> Inform candidate the white lights are NOT LIT.</p>	<p>Place Test Switch HSE-2A20102A to Normal and CONFIRM following Test lights EXTINGUISH:</p> <ul style="list-style-type: none"> Relay Ckt 27B1/27B2 Relay Ckt 27B3/27B4 <p>Verify white lights are NOT LIT.</p>		
21	Document step completion.	Initials confirm space.		
22	Reset relay targets 27B1 through 27B4.	Depress the reset button and verify relay target color changes from orange to clear.		
23	Document step completion.	Initials confirm space for each relay.		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Page 8 of 13

Appl. To/JPM No.: S/RO 04.SO.002.251

Student Name: _____

Step	Action	Standard	Eval	Comments
*24	Enable protection circuit.	Place Degraded Voltage Trip Enable Test Switch HSE-2A20102B to TRIP ENABLED position.		
25	Document step completion.	Initials confirm space.		
26	Confirm 4KV BUS 2A(2A201) LO VOLT/PROT CKT TROUBLE ALARM cleared at panel 0C653. <u>EVALUATOR CUE</u> Inform candidate the alarm was clear.	Using plant page/radio contacts control room to confirm the alarm cleared.		
27	Document step completion.	Initials confirm space.		
28	Inform Shift Supervision to clear TS 3.3.8.1.	Using plant page/radio contacts control room/Unit Supervisor to clear TS 3.3.8.1 for bus 2A201.		
29	Document step completion. <u>EVALUATOR NOTE:</u> Candidate will proceed to bus 2A202.	Initials confirm space.		
30	Inform Shift Supervision to enter TS 3.3.8.1.	Using plant page/radio contacts control room/Unit Supervisor to enter TS 3.3.8.1 for bus 2A202.		
31	Document step completion.	Initials confirm space.		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Page 9 of 13

Appl. To/JPM No.: S/RO 04.SO.002.251

Student Name: _____

Step	Action	Standard	Eval	Comments
	<u>CAUTION</u> DEGRADED GRID PROTECTION FOR ESS BUS 2A202 DISABLED DURING PERFORMANCE OF THIS SECTION.			
*32	Block protection circuit.	Place Degraded Voltage Trip Enable Test Switch HSE-2A20202B to TRIP BLOCKED position.		
33	Document step completion.	Initials confirm space.		
34	Confirm 4KV BUS 2B(2A202) LO VOLT/PROT CKT TROUBLE ALARM received at panel 0C653.	Using plant page/radio contacts control room to confirm the alarm was received.		
	<u>EVALUATOR CUE</u> Inform candidate the alarm was received.			
35	Document step completion.	Initials confirm space.		
36	Perform light test.	Place Degraded Voltage Ckt Test Switch HSE-2A20202A to LIGHT TEST and CONFIRM following Degraded Voltage Ckt Test Light ILLUMINATE:		
	<u>EVALUATOR CUE</u> Inform candidate the white lights are LIT.	<ul style="list-style-type: none"> Relay Ckt 27B1/27B2 Relay Ckt 27B3/27B4 Verify white lights LIT.		
37	Document step completion.	Initials confirm spaces.		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

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Appl. To/JPM No.: S/RO 04.SO.002.251

Student Name: _____

Step	Action	Standard	Eval	Comments
38	Return test switch to normal. <u>EVALUATOR CUE</u> Inform candidate the white lights are NOT LIT.	Place Test Switch HSE-2A20202A to Normal and CONFIRM following Test lights EXTINGUISH: • Relay Ckt 27B1/27B2 • Relay Ckt 27B3/27B4 Verify white lights are NOT LIT.		
39	Document step completion. <u>FAULT STATEMENT: RELAY CKT 27B3/27B4 WILL EXCEED THE TECH SPEC ALLOWABLE VALUE.</u>	Initials confirm spaces.		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

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Appl. To/JPM No.: S/RO 04.SO.002.251

Student Name: _____

Step	Action	Standard	Eval	Comments
*40	<p>Test circuit and time relay drop out.</p> <p><u>EVALUATOR CUE</u> Inform candidate the white lights are LIT with the following times:</p> <ul style="list-style-type: none"> Relay Ckt 27B3/27B4 (~6 seconds) Relay Ckt 27B1/27B2 (~5 minutes) <p><u>EVALUATOR NOTE:</u> <u>EVALUATOR</u> Candidate may inform control room about the acceptance criteria failure. Bus 2A202 acceptance criteria for function 2 is 1.b (65%) and function 3 is 2.b (93%) on data form.</p> <p><u>EVALUATOR CUE</u> If necessary roleplay shift supervision and direct candidate to proceed with surveillance to restore test circuitry for the 2A202 bus.</p>	<p>Place Test Switch HSE-2A20202A to CIRCUIT TEST and simultaneously starts the stop watch and CONFIRM following Test lights ILLUMINATE:</p> <ul style="list-style-type: none"> Relay Ckt 27B3/27B4 (~3 seconds) Relay Ckt 27B1/27B2 (~5 minutes) <p>Verify white lights are LIT and note times on stopwatch.</p> <p>Record acceptance criteria is not acceptable on the data form by circling no and initial the confirm space for function 2.</p> <p>Record acceptance criteria is acceptable on the data form by circling yes and initial the confirm space for function 3.</p>		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Page 12 of 13

Appl. To/JPM No.: S/RO 04.SO.002.251

Student Name: _____

Step	Action	Standard	Eval	Comments
*41	Return test switch to normal. <u>EVALUATOR CUE</u> Inform candidate the white lights are NOT LIT.	Place Test Switch HSE-2A20202A to Normal and CONFIRM following Test lights EXTINGUISH: <ul style="list-style-type: none"> Relay Ckt 27B1/27B2 Relay Ckt 27B3/27B4 Verify white lights are NOT LIT.		
42	Document step completion.	Initials confirm space.		
43	Reset relay targets 27B1-2A20202 through 27B4-2A20202.	Depress the reset button and verify relay target color changes from orange to clear.		
44	Document step completion.	Initials confirm space for each relay.		
*45	Enable protection circuit.	Place Degraded Voltage Trip Enable Test Switch HSE-2A20202B to TRIP ENABLED position.		
46	Document step completion.	Initials confirm space.		
47	Confirm 4KV BUS 2B(2A202) LO VOLT/PROT CKT TROUBLE ALARM cleared at panel 0C653. <u>EVALUATOR CUE</u> Inform candidate the alarm was clear.	Using plant page/radio contacts control room to confirm the alarm cleared.		
48	Document step completion.	Initials confirm space.		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Page 13 of 13

Appl. To/JPM No.: S/RO 04.SO.002.251

Student Name: _____

Step	Action	Standard	Eval	Comments
49	<p>Inform Shift Supervision Bus 2A202 did not meet acceptance criteria.</p> <p><u>EVALUATOR CUE</u></p> <p>This completes the JPM.</p>	<p>Using plant page/radio contacts Unit 2 control room/Unit Supervisor and informs them bus 2A202 did not meet acceptance criteria for relays 27B3/27B4.</p>		

*Critical Step

#Critical Sequence

TASK CONDITIONS

- A. Unit 2 is in MODE 1.
- B. No other testing is being performed on Unit 2.

INITIATING CUE

Perform SO-204-001, MONTHLY 4KV BUS 2A201, 2A202, 2A203, AND 2A204 DEGRADED VOLTAGE CHANNEL FUNCTIONAL TEST.

TASK CONDITIONS

- A. Unit 2 is in MODE 1.
- B. No other testing is being performed on Unit 2.

INITIATING CUE

Perform SO-204-001, MONTHLY 4KV BUS 2A201, 2A202, 2A203, AND 2A204 DEGRADED VOLTAGE CHANNEL FUNCTIONAL TEST.

APPROVAL AND ADMINISTRATIVE DATA SHEET

REQUIRED TASK INFORMATION
JOB PERFORMANCE MEASURE
S/RO 00.ON.015.153

I. SAFETY CONSIDERATIONS

- A. All Operations personnel are responsible for maintaining their radiation exposure As Low As Reasonably Achievable in accordance with OP-AD-002, Standards for Shift Operations.
- B. All applicable safety precautions shall be taken in accordance with established PPL safety policies and the Safety Rule Book, for example:
 - 1. Whenever any electrical panel is opened for inspection during JPM performance.
 - 2. Whenever entering any plant area where specific safety equipment; such as hearing or eye protection, safety shoes, hardhats, etc; is required and/or posted as being necessary.
- C. If in the judgement of the evaluator any safety issue occurs during the performance of a JPM, the JPM will be terminated until the issue is resolved.

II. REFERENCES

- A. ON-100-009 CONTROL ROOM EVACUATION (Rev. 8)

III. REACTIVITY MANIPULATIONS

None

IV. TASK CONDITIONS

- A. An incident has occurred at Unit 1, which has required the Control Room to be Evacuated.
- B. Control has been transferred to the Unit 1 RSDP in accordance with ON-100-009.
- C. HPCI is operating.
- D. Reactor pressure is 875 psig and stable.
- E. MSIVs are closed.
- F. The Unit Supervisor has directed that SRVs be used for a plant cooldown.

V. INITIATING CUE

Lower RPV pressure, from the Unit 1 RSDP, as necessary to initiate a reactor cooldown NOT to exceed 100°F per hour from the present conditions, in accordance with ON-100-009 step 4.6.

VI. TASK STANDARD

Reactor C/D lowest pressure calculated \geq 325 psig and at least 1 SRV opened.

VII. TASK SAFETY SIGNIFICANCE

Commence a reactor coolant system cooldown.

Failure to perform the task would result in an uncontrolled RCS heatup, and a challenge to the RPV pressure control system to function.

PERFORMANCE CHECKLIST

Page 3 of 8

Appl. To/JPM No.: S/RO 00.ON.015.153

Student Name: _____

Step	Action	Standard	Eval	Comments
	<p><u>EVALUATOR NOTE:</u></p> <ul style="list-style-type: none"> The FAULTED step in this JPM is preceded by a fault statement in BOLD TYPE WITH ALL CAPITAL LETTERS. 			
1	<p>Obtains a controlled copy of ON-100-009, including Attachments A and B.</p> <p>NOTE:</p> <p>Relief mode of SRV's A, B, and C will not auto initiate when applicable Control Transfer Switches are in EMERG position, however, safety function is always operable. Also when SRV Transfer Switches are in EMERG spurious auto actuation is prevented due to a Control Room fire.</p>	Obtains a controlled copy ON-100-009, including Attachments A and B.		
2	<p>Ensure following valves OPEN:</p> <ul style="list-style-type: none"> SV-12651 INSTR GAS TO CONTN ISO. SV-12605 INSTR GAS CMP OB SUCT ISO. <p><u>EVALUATOR CUE:</u></p> <p>Inform candidate, Red OPEN lights LIT and amber CLOSED lights NOT LIT for SV-12651 and SV-12605 indication.</p>	<p>Checks:</p> <p>SV-12651 indicating lights Red light LIT. Amber light NOT LIT.</p> <p>AND</p> <p>SV-12605 indicating lights Red light LIT. Amber light NOT LIT.</p>		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Page 4 of 8

Appl. To/JPM No.: S/RO 00.ON.015.153

Student Name: _____

Step	Action	Standard	Eval	Comments
3	<p><u>CAUTION</u></p> <p>Level 1 (-129") or high drywell pressure (1.72 psig) LOCA Isolation Signal is defeated for CIG valves when controlled from the remote shutdown panel.</p> <p><u>NOTE:</u></p> <p>Placing HSS-15114B Transfer Switch U in EMERG causes Instr Gas CMP OB suction to cycle possibly tripping CIG compressors on low suction pressure.</p> <p><u>IF</u> CIG Compressors tripped, Reset as follows at 1C239 (25-719"):</p> <p>Depress Logic Reset push button.</p> <p>Ensure CIG Compressor STARTS.</p> <p><u>EVALUATOR CUE:</u></p> <p>Role Play as Reactor Building NPO and Inform candidate that the CIG Compressors are running.</p> <p><u>CAUTION (1)</u></p> <p>If RPV pressure drops below 650 psig, condensate pumps will inject when RPV level <+35 inches.</p> <p><u>CAUTION (2)</u></p> <p>Wide range level indication becomes less accurate as RPV pressure decreases.</p>	<p>Simulates contacting Reactor building NPO to determine the status of the CIG compressors.</p>		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Page 5 of 8

Appl. To/JPM No.: S/RO 00.ON.015.153

Student Name: _____

Step	Action	Standard	Eval	Comments
	<p><u>EVALUATOR NOTE:</u></p> <p>Since the SRVs will not open until the candidate is at the relay room, Calculation of allowable cooldown value may be done anytime during the remainder of the JPM. This is acceptable.</p> <p>Operate SRV's as follows:</p>			
*4	Calculates allowable cooldown value for reactor pressure.	<p>Refers to ON-100-009, Attachment A to determine current reactor temperature and desired reactor pressure and temperature to achieve a 100°F/hr cooldown</p> <p>AND</p> <p>Determines RPV pressure at 875 psig, reactor temperature is ~530°F. Cooldown rate of 100°F/hr lowers RPV pressure ~325 psig. Should be over 1 hour, so a target pressure ≥325 psig is selected.</p>		
	<p><u>FAULT STATEMENT:</u></p> <p>SRV'S A, B, & C WILL NOT OPEN FROM THE RSDP.</p>			
5	Open SRV's A, B, and C as needed.	Places switches for SRVs A, B, or C to OPEN.		
	<p><u>EVALUATOR CUE:</u></p> <p>If asked, indicate RPV pressure is still stable at 875 psig.</p>	<p>AND</p> <p>Checks for change in RPV pressure</p>		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Page 6 of 8

Appl. To/JPM No.: S/RO 00.ON.015.153

Student Name: _____

Step	Action	Standard	Eval	Comments
6	<p><u>EVALUATOR CUE:</u></p> <p>Acknowledge as SRO and inform the candidate to perform the necessary procedural actions to complete the task. Inform the operator that permission is granted to leave the RSDP – another operator will assume the RSDP station.</p>	<p>Candidate determines that the valves have not opened and reports this to the SRO.</p> <p>IF pneumatic supply to SRV's A, B, and C not available, Operate SRV's G, J, K, L, M, or N (ADS valves) individually from upper (lower) relay room Panel 1C628 (1C631) using keylock switches.</p>		
	<p>Chooses alternate method of SRV operation.</p>			
	<p><u>EVALUATOR CUE:</u></p> <p>Roleplay SRO as necessary to provide instructions on which SRV is to be opened.</p> <p><u>EVALUATOR NOTE:</u></p> <p>Operation of the ADS valves from the Relay Room consists of switch manipulation and monitoring cooldown rate while maintaining communication with the RSDP Room. There are six keylock switches in each Relay Room; the operator may select either the Upper or the Lower Relay Room to perform this JPM.</p>			

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Page 7 of 8

Appl. To/JPM No.: S/RO 00.ON.015.153

Student Name: _____

Step	Action	Standard	Eval	Comments
	<p><u>EVALUATOR NOTE:</u></p> <p>Keys to operate SRV's are located in sealed Pink sound powered phone storage box, labeled "JP1207, JP1402, JP2201," inside the Remote Shutdown Panel Room.</p> <p><i>Use of these keys and the key to the storage box will be SIMULATED</i></p>			
*6	Simulate obtaining keys for SRVs from Pink sound powered phone box, labeled "JP1207, JP1402, JP2201".	Demonstrates the ability to find keys in the pink box labeled "JP1207 or JP1402."		
7	Go to the selected Relay Room, locates Panel 1C631 or Panel 1C628.	Proceeds to the selected Relay Room, locates Panel 1C631 or Panel 1C628.		
8	Simulates establishing communication with the RSDP Room.	Establishes communication with the RSDP Room (simulate) using sound-powered phone <u>or</u> page.		
*9	Simulates inserting key and rotating switch to the OPEN position.	Simulates placing any ADS keylock switch in the OPEN position.		
	<p><u>EVALUATOR CUE:</u></p> <p>Inform candidate red light LIT and amber light NOT LIT for each valve place to open.</p>	<p>AND</p> <p>Verifies Red light LIT and amber light NOT LIT.</p>		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Page 8 of 8

Appl. To/JPM No.: S/RO 00.ON.015.153

Student Name: _____

Step	Action	Standard	Eval	Comments
	<u>EVALUATOR CUE:</u> Acknowledge SRV is OPEN. This completes the JPM.	Simulates using sound-powered phone <u>or</u> page. To inform SRO at the RSDP the valve indicates OPEN		

*Critical Step

#Critical Sequence

TASK CONDITIONS

- A. An incident has occurred at Unit 1, which has required the Control Room to be Evacuated.
- B. Control has been transferred to the Unit 1 RSDP in accordance with ON-100-009.
- C. HPCI is operating.
- D. Reactor pressure is 875 psig and stable.
- E. MSIVs are closed.
- F. The Unit Supervisor has directed that SRVs be used for a plant cooldown.

INITIATING CUE

Lower RPV pressure, from the Unit 1 RSDP, as necessary to initiate a reactor cooldown NOT to exceed 100°F per hour from the present conditions, in accordance with ON-100-009 step 4.6.

TASK CONDITIONS

- A. An incident has occurred at Unit 1, which has required the Control Room to be Evacuated.
- B. Control has been transferred to the Unit 1 RSDP in accordance with ON-100-009.
- C. HPCI is operating.
- D. Reactor pressure is 875 psig and stable.
- E. MSIVs are closed.
- F. The Unit Supervisor has directed that SRVs be used for a plant cooldown.

INITIATING CUE

Lower RPV pressure, from the Unit 1 RSDP, as necessary to initiate a reactor cooldown NOT to exceed 100°F per hour from the present conditions, in accordance with ON-100-009 step 4.6.

PENNSYLVANIA POWER & LIGHT COMPANY

JOB PERFORMANCE MEASURE

APPROVAL AND ADMINISTRATIVE DATA SHEET

S/RO	50.EO.008.101	1	06/15/03	217000 A2.01	3.8/3.7
Appl. To	JPM Number	Rev. No.	Date	NUREG 1123 Sys. No.	K/A

Task Title: Bypass of All RCIC Isolation Signals in Accordance With ES-150-001

Completed By: _____ Reviews: _____

Russ Halm	06/15/03		
Writer	Date	Instructor/Writer	Date

Approval:

Requesting Supv./C.A. Head	Date	Nuclear Trng. Supv.	Date
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	40	
Date of Performance:	Allowed Time (Min.)	Time Taken (Min.)

JPM Performed By:

Student Name: _____

Last	First	M.I.	Employee #/S.S. #
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Performance Evaluation: () Satisfactory () Unsatisfactory

Evaluator Name: _____

Signature	Typed or Printed
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Comments:

REQUIRED TASK INFORMATION
JOB PERFORMANCE MEASURE
S/RO 50.EO.008.101

I. SAFETY CONSIDERATIONS

- A. All Operations personnel are responsible for maintaining their radiation exposure As Low As Reasonably Achievable in accordance with OP-AD-002, Standards for Shift Operations.
- B. All applicable safety precautions shall be taken in accordance with established PPL safety policies and the Safety Rule Book, for example:
 - 1. Whenever any electrical panel is opened for inspection during JPM performance.
 - 2. Whenever entering any plant area where specific safety equipment; such as hearing or eye protection, safety shoes, hardhats, etc; is required and/or posted as being necessary.
- C. If in the judgement of the evaluator any safety issue occurs during the performance of a JPM, the JPM will be terminated until the issue is resolved.

II. REFERENCES

- A. ES-150-001 RCIC Turbine Isolation and Trip Bypass, Rev. 14

III. REACTIVITY MANIPULATIONS

This JPM satisfies the requirements of Operational Activity(s):

None

IV. TASK CONDITIONS

- A. An accident condition exists and Shift Supervision has determined that it is necessary to rapidly depressurize the RPV as required by EO-100-103, Primary Containment Control.
- B. EO-100-112, Rapid Depressurization is being executed, and only two SRVs can be opened.
- C. A RCIC initiation signal is sealed in and RCIC started, but tripped and isolated, due to a loss of RB HVAC with a subsequent pipe routing area high temperature.
- D. A steam leak does not exist.
- E. RCIC is needed for support of reactor depressurization.
- F. ES-150-001 Section 4.6 is complete, bypassing and resetting the RCIC initiation signal.

V. INITIATING CUE

Bypass all of the RCIC isolation signals in accordance with ES-150-001, Section 4.2.

VI. TASK STANDARD

All RCIC isolations signals bypassed.

VII. TASK SAFETY SIGNIFICANCE

Provide inventory makeup supply for reactor heat removal.
Failure to complete the task could result in loss of heat removal capability.

PERFORMANCE CHECKLIST

Page 3 of 9

Appl. To/JPM No.: S/RO 50.EO.008.101

Student Name: _____

Step	Action	Standard	Eval	Comments
	<p><u>EVALUATOR NOTE:</u></p> <ul style="list-style-type: none"> • This JPM must be performed in the plant. • Obtain permission from Shift Manager to perform this JPM and get access to ES tool box. • Ensure the following material is available to support performance of this JPM: <ul style="list-style-type: none"> • A copy of the latest revision of ES-150-001. • In section 4.0, initial 4.6 and 4.2 under EO-112. • Enter NA for all other initial blocks in section 4.0. • Authorize the ES by signoff as Shift Manager with date and time. • Signoff confirmed and date for steps 4.6.1.a and 4.6.1.b. • Insert NA for steps 4.6.2.a and 4.6.2.b. • Place checkmark at the end of steps 4.6.3 through 4.6.7 indicating their completion. <p><u>EVALUATOR NOTE:</u> To begin this JPM, provide the candidate with the Task Conditions and Initiating Cue Sheet.</p>			
1	Review Sections 1.0 through 3.0.	<p>Reviews all sections.</p> <p>Notes that the approval step for 4.6 and 4.2, under Rapid Depressurization in section 4.0 has been initialed.</p>		
2	Ensure that Shift Supervision has approved performance of Sections 4.6 and 4.2.	Notes that Shift Supervision has signed and dated the appropriate signature line.		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Page 4 of 9

Appl. To/JPM No.: S/RO 50.EO.008.101

Student Name: _____

Step	Action	Standard	Eval	Comments
3	Obtain required support materials. <u>EVALUATOR NOTE:</u> Have the candidate show you the support materials, but do not remove them from the Shift Manager's office.	Obtains required support materials from the ES box in the Shift Manager's office.		
4	Selects correct section.	Selects section 4.2.		
5	Place following valve control switches to CLOSE: <ul style="list-style-type: none"> • STM SUPPLY IB ISO HV-149-F007 • STM SUPPLY OB ISO HV-149-F008 • WARM UP LINE ISO HV-149-F088 <u>EVALUATOR CUE</u> After each switch is placed to CLOSE inform the candidate the amber light is LIT and the red light is NOT LIT. <u>CAUTION</u> The following steps bypass all isolation signals <u>including manual isolation</u> , however, HV-15012 and HV-149-F008 can still be closed manually using the handswitches. NOTE: Booting of RCIC E51-K15 and K33 contacts below will allow bypass of all isolations but will not inhibit other functions (i.e., Alarm and BIS lights). However, these may be affected momentarily when the relay fingers are spread to install the boots.	Insert key and rotate counter clockwise to CLOSE for HV-149-007 and F008. Place control switch to CLOSE for HV-149-F088. Verify amber light LIT and red light NOT LIT.		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Page 5 of 9

Appl. To/JPM No.: S/RO 50.EO.008.101

Student Name: _____

Step	Action	Standard	Eval	Comments
6	Bypass all RCIC Div 1 isolations. <u>EVALUATOR NOTE:</u> 1C621 located Upper Relay Room. Banana Jacks in this JPM have a GREEN stripe.	Locate 1C621, RCIC RELAY PANEL DIVISION 1.		
7	Locate relay, loosen relay cover screws, and remove cover.	REMOVE front cover from Relay E51A-K15, RCIC AUTO/MAN ISOLATION SIGNAL F008 CONTROL LOGIC.		
*8	Boot contacts 3/4.	Referring to ATT A, INSTALL boot over 3/4 contact finger of Relay E51A-K15.		
9	Document step completion.	Signs/initials confirmed space and enters date.		
*10	Boot contacts 9/10.	Referring to ATT A, INSTALL boot over 9/10 contact finger of Relay E51A-K15.		
11	Document step completion.	Signs/initials confirmed space and enters date.		
12	Locate Terminal Strips - AAA7 and BBB9. NOTE: Terminal Strip <u>AAA7</u> is located left side, back row 4 feet high, and terminal strip <u>BBB9</u> is located right side, front row, 3 feet high in rear of panel.	Locate Terminal Strips - AAA7 and BBB9.		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Page 6 of 9

Appl. To/JPM No.: S/RO 50.EO.008.101

Student Name: _____

Step	Action	Standard	Eval	Comments
*13	Install jumper.	INSTALL a jumper between terminal points AAA7-4 and BBB9-7.		
14	Document step completion.	Signs/initials confirmed space and enters date.		
15	Bypass all RCIC Div 2 isolations. <u>EVALUATOR NOTE:</u> 1C618 is located in the Lower Relay Room.	Locate 1C618, RHR/RCIC RELAY PANEL DIV 2.		
16	Locate relay, loosen relay cover screws, and remove cover.	REMOVE front cover of Relay E51A-K33, RCIC ISO SIGNAL TURB EXH DIAPHRAGM HIGH PRESSURE.		
*17	Boot contacts 3/4.	Referring to ATT B, INSTALL boot over 3/4 contact finger of Relay E51A-K33.		
18	Document step completion.	Signs/initials confirmed space and enters date.		
*19	Boot contacts 7/8.	Referring to ATT B, INSTALL boot over 7/8 contact finger of Relay E51A-K33.		
20	Document step completion.	Signs/initials confirmed space and enters date.		
21	Locate Terminal Strip - EEE8.	Locate Terminal Strip - EEE8.		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Page 7 of 9

Appl. To/JPM No.: S/RO 50.EO.008.101

Student Name: _____

Step	Action	Standard	Eval	Comments
	NOTE: Terminal Strip <u>EEE8</u> is located right side, 2 feet high in rear of Panel 1C618, third door from right end of panel.			
*22	Install jumper.	INSTALL jumper between Terminal Points EEE8-14 and EEE8-20.		
23	Document step completion.	Signs/initials confirmed space and enters date.		
24	Locate Terminal Strips BBB6 and EEE7.	Locate Terminal Strip -BBB6 and Terminal Strip - EEE7.		
	NOTE: Terminal Strip <u>BBB6</u> is located right side, 6 feet high. Terminal Strip <u>EEE7</u> is located 3 feet high in rear of Panel 1C618, third door from right end of panel.			
*25	Install jumper.	INSTALL jumper between Terminal Points BBB6-6 and EEE7-14.		
26	Document step completion.	Signs/initials confirmed space and enters date.		
	Pressurize RCIC steam line.			
*#27	OPEN STM SUPPLY IB ISO HV-149-F007.	PLACE STM SUPPLY IB ISO HV-149-F007 keyswitch to OPEN.		
	<u>EVALUATOR CUE</u> Inform the candidate the red light is LIT and the amber light is NOT LIT.	Verify red light LIT and amber light NOT LIT.		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

Page 8 of 9

Appl. To/JPM No.: S/RO 50.EO.008.101

Student Name: _____

Step	Action	Standard	Eval	Comments
*#28	THROTTLE OPEN STM SUPPLY OB ISO HV-149-F008.	PLACE STM SUPPLY OB ISO HV-149-F008 keyswitch to OPEN for four seconds.		
	<u>EVALUATOR CUE</u> Inform the candidate the red light and the amber light are LIT.	<u>AND</u> RETURN STM SUPPLY OB ISO HV-149-F008 keyswitch to STOP position. Verify red light and amber light LIT.		
29	OBSERVE steam line pressure increasing.	Observe STM SUP PRESS TO RCIC TURBINE PI-E51-1R602.		
	<u>EVALUATOR CUE</u> Inform the candidate that RCIC Steam Line pressure is rising.			
30	THROTTLE OPEN RCIC STM SUPPLY OB ISO HV-149-F008 to pressurize RCIC steam line ~100 psi/min.	PLACE STM SUPPLY OB ISO HV-149-F008 keyswitch to OPEN.		
	<u>EVALUATOR CUE</u> Inform the candidate that RCIC Steam Line is pressurizing at a rate of ~80 psi/min.	<u>AND</u> RETURN STM SUPPLY OB ISO HV-149-F008 keyswitch to STOP position while monitoring PI-E51-1R602		

*Critical Step

#Critical Sequence

PERFORMANCE CHECKLIST

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Student Name: _____

Step	Action	Standard	Eval	Comments
31	<p>When RCIC steam line pressure within 50 psig reactor pressure as indicated on STM SUP PRESS TO RCIC TURBINE PI-E51-1R602, FULLY OPEN STM SUPPLY OB ISO HV-149-F008.</p> <p><u>EVALUATOR CUE</u> Inform candidate that pressures are within 50 psig of each other. Inform the candidate the red light is LIT and the amber light is NOT LIT.</p>	<p>Compares any reactor pressure indication to PI-E51-1R602.</p> <p>PLACE STM SUPPLY OB ISO HV-149-F008 keyswitch to OPEN.</p> <p>Verify red light LIT and amber light is NOT LIT.</p>		
32	<p>Confirms RCIC Steam Lines are drained.</p> <p><u>EVALUATOR CUE</u> Inform the candidate the amber light is LIT and the red light is NOT LIT.</p> <p><u>EVALUATOR CUE:</u> This completes the JPM.</p>	<p>Observes Annunciator AR-108-B04 is CLEAR.</p> <p>Check STEAM LINE DRN POT BYPS LV-149-F054 is CLOSED.</p> <p>Verify amber light LIT and red light NOT LIT.</p>		

*Critical Step

#Critical Sequence

TASK CONDITIONS

- A. An accident condition exists and Shift Supervision has determined that it is necessary to rapidly depressurize the RPV as required by EO-100-103, Primary Containment Control.
- B. EO-100-112, Rapid Depressurization, is being executed, and only two SRVs can be opened.
- C. A RCIC initiation signal is sealed in and RCIC started, but tripped and isolated, due to a loss of RB HVAC with a subsequent pipe routing area high temperature.
- D. A steam leak does not exist.
- E. RCIC is needed for support of reactor depressurization.
- F. ES-150-001 Section 4.6 is complete, bypassing and resetting the RCIC initiation signal.

INITIATING CUE

Bypass all of the RCIC isolation signals in accordance with ES-150-001, Section 4.2.

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INITIATING CUE

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