

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC SRO Exam

1

ID: Q50652

Points: 1.00

Unit 1 was operating at 100% power when a Reactor Trip occurred. 5 Minutes after the trip the following indications are noted:

- All 13.8 KV busses are energized
- 11 and 14 4KV busses are energized
- 11 S/G pressure 925 PSIA
- 12 S/G pressure 920 PSIA
- 11 S/G Level is - 150 inches and rising slowly
- 12 S/G Level is - 165 inches and rising slowly
- RCS Tcold 536 °F
- Pressurizer Level is 65 inches and slowly lowering
- Pressurizer pressure is 1900 PSIA and steady
- 11 charging pump is running
- Reactor Power is 10<sup>-2%</sup>
- 1 CEA indicates stuck out

Which of the following are the correct reports and required actions by the CRO and RO?

- A. CRO reports: "Taking alternate actions for Core and RCS heat removal Safety Function, manually opening TBV's and initiating AFW flow.  
RO reports : "Taking alternate actions for RCS Pressure and Inventory Control Safety Function, starting manually operating pressurizer heaters"
- B. CRO reports: "Taking alternate actions for Core and RCS heat removal Safety Function, manually opening the TBVs"  
RO reports : "Taking alternate actions for RCS Pressure and Inventory Control Safety Function, starting 12 Charging pump"
- C. CRO reports: "Taking alternate actions for Core and RCS Heat Removal Safety Function, opening TBV's and initiating AFW flow.  
RO reports : "Taking alternate actions for Reactivity Control Safety Function, borating the RCS"
- D. CRO reports: "Taking alternate actions for Core and RCS heat removal Safety Function, manually opening TBV's . RO reports : "Taking alternate actions for RCS Pressure and Inventory Control Safety Function, manually operating pressurizer heaters".

Answer: B

## Answer Explanation:

- A. CRO reports: "Taking alternate actions for Core and RCS heat removal Safety Function, manually opening TBV's and initiating AFW flow. RO reports : "Taking alternate actions for RCS Pressure and Inventory Control Safety Function, starting manually operating pressurizer heaters"-- **is Not correct**, since RCS pressure has stabilized between 1850 and 2300 PSIA, and AFW flow is not required.

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- B. CRO reports: "Taking alternate actions for Core and RCS heat removal Safety Function, manually opening the TBVs". RO reports: "Taking alternate actions for RCS Pressure and Inventory Control Safety Function, starting 12 Charging pump"-- **Is correct** since the TBVs have not restored Tcold and S/G pressure, and pressurizer level is not being restored by the current charging configuration.
- C. CRO reports: "Taking alternate actions for Core and RCS Heat Removal Safety Function, opening TBV's and initiating AFW flow. RO reports : "Taking alternate actions for Reactivity Control Safety Function, borating the RCS . -- **Is Not correct**, only one CEA is stuck out and the reactor is responding to the trip as expected so the reactivity control safety function is being met.
- D. CRO reports: "Taking alternate actions for Core and RCS heat removal Safety Function, manually opening TBV's . RO reports : "Taking alternate actions for RCS Pressure and Inventory Control Safety Function, manually operating pressurizer heaters".-- **Is Not correct**. Pressurizer pressure is stable at 1900 PSIA so the PPCS has restored RCS pressure so no action is required.

Question 1 Info				
Question Type:	Multiple Choice			
Status:	Active			
Always select on test?	No			
Authorized for practice?	No			
Points:	1.00			
Time to Complete:	4			
Difficulty:	3.00			
System ID:	50652			
User-Defined ID:	Q50652			
Cross Reference Number:				
Topic:	SRO - Given conditions, parameter values and/or indications associated with a Rx trip, interpret the			
RO Importance:	4.3			
SRO Importance:	4.6			
KA Number:	41007EA202			
Comments:	<p>New Question : <b>Comprehensive/Analysis</b></p> <p>K/A</p> <table border="1"> <tr> <td>000007 Reactor Trip-Stabilization – Recovery /1</td> <td>EA2.02 Ability to determine or interpret the following as they apply to a reactor trip: Proper actions to be taken if the automatic safety functions have not taken place</td> <td>4.6</td> </tr> </table>	000007 Reactor Trip-Stabilization – Recovery /1	EA2.02 Ability to determine or interpret the following as they apply to a reactor trip: Proper actions to be taken if the automatic safety functions have not taken place	4.6
000007 Reactor Trip-Stabilization – Recovery /1	EA2.02 Ability to determine or interpret the following as they apply to a reactor trip: Proper actions to be taken if the automatic safety functions have not taken place	4.6		

# EXAMINATION ANSWER KEY

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2

ID: Q50402R

Points: 1.00

Unit 1 was in mode 1 when a loss of service water pump 12 occurred. 13 service water pump has been started and is operating properly. The cause of the trip of 12 Service water pump is not known. Electrical Maintenance has initiated a troubleshooting plan to determine and repair the cause. This activity is determined to be Nuclear Medium Risk. Which of the following is the responsibility of the on-shift SRO with regard to troubleshooting activities?

- A. Ensuring adequate boundaries are identified to control troubleshooting scope.
- B. Approving troubleshooting plans as defined by risk assessment process.
- C. Classifying the troubleshooting approach as routine or complex.
- D. Closing out each troubleshooting plan.

Answer: A

### Answer Explanation:

A. Ensuring adequate boundaries are identified to control troubleshooting scope.. - Correct per CNG-MN-1-1.01

B. Approving troubleshooting plans as defined by risk assessment process. - Incorrect, this is GS- Shift Operations Responsibility for Nuclear Medium Risk activities.

C. Classifying the troubleshooting approach as routine or complex. - Incorrect, this is Responsible Group Supervisor ( Electrical Maintenance) responsibility.

D. Closing out each troubleshooting plan.. - Incorrect, this is Responsible Group Supervisor ( Electrical Maintenance)responsibility

Question 2 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	3.00
System ID:	50570
User-Defined ID:	Q50402R
Cross Reference Number:	
Topic:	Troubleshooting activities related to a loss of service water
RO Importance:	2.6
SRO Importance:	3.8
KA Number:	2220
Comments:	NEW Question : <b>Fundamental/Memory</b>  Reference: CNG-MN-1.01-1002- Rev 0001 pages 6-10

# EXAMINATION ANSWER KEY

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	<b>062 Loss of Nuclear Service Water</b>	2.2.20 – Knowledge of the process for managing troubleshooting activities	3.8
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# EXAMINATION ANSWER KEY

CCNPP 2008 NRC SRO Exam

3

ID: Q50405

Points: 1.00

Unit 1 was operating at 100% power when an event occurred which required a reactor trip. The following conditions exist:

RCS Pressure - 1825 PSIA and slowly rising  
Containment Pressure is 0 PSIG and steady  
Tcold - 500°F and rising slowly  
11 S/G Pressure - 680 PSIG and rising  
12 S/G Pressure - 760 PSIG and rising  
Pressurizer Level - 100 inches and rising  
RCS Subcooling - 113 °F and slowly rising  
(No operator actions were performed except to trip the reactor).

Which of the following actions should be directed by the CRS for these conditions?

- A. Operate the TBVs to restore Tcold to between 525°F and 535°F
- B. Operate the ADVs to restore Tcold to between 525°F and 535°F
- C. Operate the TBVs to maintain Tcold at current value.
- D. Operate the ADVs to maintain Tcold at current value.

Answer: D

## Answer Explanation:

- A. Operate the TBVs to restore Tcold to between 525°F and 535°F. -- **Is Incorrect**, MSIVs should be shut for this condition so TBVs would not be useful, and based on the indications an excess steam demand event which has been terminated by the SGIS has occurred . Per the current guidance in EOP-0 and EOP-0 Basis document for step 1.4, Tcold should not be restored to the normal EOP-0 band.
- B. Operate the ADVs to restore Tcold to between 525°F and 535°F-- **Is Incorrect**-- since based on the indications an excess steam demand event which has been terminated by the SGIS has occurred . Per the current guidance Tcold should not be restored to the normal EOP-0 band.
- C. Operate the TBVs to maintain Tcold at current value.-- **Is Incorrect**, MSIVs should be shut for this condition so TBVs would not be useful.
- D. Operate the ADVs to maintain Tcold at current value.- **Is correct**, Per the current guidance in EOP-0 and EOP-0 Basis document for step 1.4, Tcold should not be restored to the normal EOP-0 band.

# EXAMINATION ANSWER KEY

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Candidates should be able to interpret from the conditions given that an SGIS occurred that isolated the excess steam demand since 11 SG Pressure is currently less than the SGIS setpoint and rising and containment pressure is 0 psig. The steps to stabilize TCold at current value if a SGIS has actuated was added following an event at CCNPP described in LER 318/2004-01 Reactor Trip and two SIAS actuations. This step was added to ensure that TCold is stabilized to reduce the effects of an in-surge of relatively cold water into the pressurizer which could compress the steam bubble and raise RCS pressure above the saturation temperature of the pressurizer water volume, which could lead operators to believe that Safety Injection can be reset. In fact when the transient conditions caused by the in-surge stabilizes, pressurizer pressure will return to the saturation pressure for the current pressurizer temperature which can lead to an inadvertent SIAS

Question 3 Info					
Question Type:	Multiple Choice				
Status:	Active				
Always select on test?	No				
Authorized for practice?	No				
Points:	1.00				
Time to Complete:	3				
Difficulty:	4.00				
System ID:	50405				
User-Defined ID:	Q50405				
Cross Reference Number:					
Topic:	Actions for Excess steam demand to mitigate effects				
RO Importance:	3.7				
SRO Importance:	4.7				
KA Number:	246				
Comments:	<p>New Question: <b>Comprehensive/Analysis</b></p> <p>Reference EOP-4 basis document</p> <table border="1" data-bbox="785 1358 1494 1455"> <tr> <td>00040/Steam Line Rupture – Excessive Heat Transfer</td> <td>2.4.6 Knowledge of EOP mitigation strategies.</td> <td>4.7</td> </tr> </table>		00040/Steam Line Rupture – Excessive Heat Transfer	2.4.6 Knowledge of EOP mitigation strategies.	4.7
00040/Steam Line Rupture – Excessive Heat Transfer	2.4.6 Knowledge of EOP mitigation strategies.	4.7			

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC SRO Exam

4

ID: Q50407

Points: 1.00

U-1 is operating at 100% power when a loss of #11 125 volt DC bus occurs. Which of the following sets of statements are correct for these conditions:

- A. 11A and 11B RCP breakers are tripped locally, 12A and 12B are secured from the Control Room, No feedwater is available, RCS heat input must be reduced
- B. 11A and 12A RCP breakers are tripped locally, 11B and 12B are secured from the Control Room, No feedwater is available, RCS heat input must be reduced
- C. 11A and 11B RCP breakers are tripped locally, 12A and 12B are secured from the Control Room, to protect them from possible damage
- D. 11A and 12A RCP breakers are tripped locally, 11B and 12B are secured from the Control Room, to protect them from possible damage

Answer: D

## Answer Explanation:

- A. 11A and 11B RCP breakers are tripped locally, 12A and 12B are secured from the Control Room, No feedwater is available, RCS heat input must be reduced. -- **Is Incorrect.** 11B and 12B RCPs are tripped from the control room since they still have control power available (11A and 12A do not have control power so must be tripped locally), and while it is true that main feedwater is not available due to the loss of service water to the turbine building, auxiliary feedwater is still available via 11 AFW pump, or 13 AFW pump could be started locally.
- B. 11A and 12A RCP breakers are tripped locally, 11B and 12B are secured from the Control Room, No feedwater is available, RCS heat input must be reduced. -- **Is Incorrect.** the correct RCPs are listed for local and remote tripping, however while it is true that main feedwater is not available due to the loss of service water to the turbine building, auxiliary feedwater is still available via 11 AFW pump, or 13 AFW pump could be started locally.
- C. 11A and 11B RCP breakers are tripped locally, 12A and 12B are secured from the Control Room, to protect them from possible damage. -- **Is Incorrect.** 11B and 12B RCPs are tripped from the control room since they still have control power available (11A and 12A do not have control power and must be tripped locally).
- D. 11A and 12A RCP breakers are tripped locally, 11B and 12B are secured from the Control Room, to protect them from possible damage. -- **Is Correct.** per AOP 7J XI. A1.c,d. Since the RCPs have no Component Cooling Flow they must be secured to protect them from possible damage.

AOP-7J XI. A.1.c, d.--Unit-1 rev. 19, and basis.

# EXAMINATION ANSWER KEY

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Question 4 Info				
Question Type:	Multiple Choice			
Status:	Active			
Always select on test?	No			
Authorized for practice?	No			
Points:	1.00			
Time to Complete:	5			
Difficulty:	1.00			
System ID:	50407			
User-Defined ID:	Q50407			
Cross Reference Number:	AOP-7J-02			
Topic:	loss of #11 125 volt DC -trip RCPs			
RO Importance:	3.7			
SRO Importance:	4.1			
KA Number:	42058AA203			
Comments:	<p>Modified from Q 39067: <b>Comprehensive/Analysis</b></p> <p>Reference AOP-7J XI. page 59-61 and AOP7J Basis page page 18</p> <p>OPERATOR ACTIONS FOR LOSS OF 120 VOLT DC BUS References: AOP-7J</p> <table border="1" data-bbox="774 1058 1475 1280"> <tbody> <tr> <td>000058 Loss of DC Power/6</td> <td>AA2.03– Ability to determine and interpret the following as they apply to the Loss of DC Power: (CFR: 43.5 / 45.13)DC loads lost; impact on ability to operate and monitor plant systems</td> <td>3.9</td> </tr> </tbody> </table>	000058 Loss of DC Power/6	AA2.03– Ability to determine and interpret the following as they apply to the Loss of DC Power: (CFR: 43.5 / 45.13)DC loads lost; impact on ability to operate and monitor plant systems	3.9
000058 Loss of DC Power/6	AA2.03– Ability to determine and interpret the following as they apply to the Loss of DC Power: (CFR: 43.5 / 45.13)DC loads lost; impact on ability to operate and monitor plant systems	3.9		



# EXAMINATION ANSWER KEY

CCNPP 2008 NRC SRO Exam

5

ID: Q50409R

Points: 1.00

U-1 is operating at 100% power when an event occurs and the following Alarms are noted:

- CONDS PPS DISCH PRESS LO
- SGFP(S) SUCT PRESS LO
- CNDSR HOTWELL LVL

The appropriate AOP is entered and actions taken. A Reactor trip occurs and EOP-0 was entered and the proper Optimal recovery procedure is now being implemented when the following indications are noted:

- MOTOR SYS NO FLOW
- TURB SYS NO FLOW
- 11 S/G < -380 inches
- 12 S/G - 300 inches
- CET temperature 562 °F
- Tcold rises from 550°F to 558°F in 30 seconds

Which of the following is correct for the conditions given:

- A. Initiate Once-through core cooling because 11 S/G is less than -350 inches
- B. Initiate Once-through core cooling because both S/G are less than - 300 inches with NO main or aux feed
- C. Initiate Once-through core cooling because 11 S/G is less than -380 inches
- D. Initiate Once-through core cooling because Tcold has risen 5°F uncontrollably

Answer: D

## Answer Explanation:

A is incorrect because it is only one S/G. Both must be less than -350".

B is incorrect because level is greater than -350".

C is incorrect because it is not a requirement for initiation of OTCC, this is the point where the S/G are isolated to prevent dryout

D. Initiate Once-through core cooling because Tcold has risen 5°F uncontrollably - correct per step J.2 of EOP

Basis: OTCC

References: EOP-3 rev. 2 step J.2 Initiate OTCC if both S/Gs are less than -350" or Tcold rises uncontrollably 5 degrees F or greater.

# EXAMINATION ANSWER KEY

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Question 5 Info				
Question Type:	Multiple Choice			
Status:	Active			
Always select on test?	No			
Authorized for practice?	No			
Points:	1.00			
Time to Complete:	3			
Difficulty:	3.00			
System ID:	50409			
User-Defined ID:	Q50409R			
Cross Reference Number:				
Topic:	Identify the proper procedure for the conditions and alarms			
RO Importance:	3.5			
SRO Importance:	3.6			
KA Number:	2446			
Comments:	<p>New Question: <b>Comprehensive/Analysis</b></p> <p>References: EOP-3 pages 22 -24 and EOP-3 basis pages 31 -33</p> <table border="1" data-bbox="777 965 1480 1062"> <tr> <td>CE/E06 Loss of Main Fedwater/4</td> <td>2.4.46 - Ability to verify that the alarms are consistent with the plant conditions.</td> <td>4. 2</td> </tr> </table>	CE/E06 Loss of Main Fedwater/4	2.4.46 - Ability to verify that the alarms are consistent with the plant conditions.	4. 2
CE/E06 Loss of Main Fedwater/4	2.4.46 - Ability to verify that the alarms are consistent with the plant conditions.	4. 2		

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC SRO Exam

6

ID: Q50493

Points: 1.00

Upon receiving a Gaseous Waste Discharge (O-RE-2191) high rad alarm,(1) what automatic action(s) occur, and (2) what immediate followup action is required?

- A. (1) Shuts waste gas discharge CVs, O-WGS-2191 and 2192; (2) Reduce the Waste Gas Surge Tank pressure to prevent lifting the Waste Gas Surge Tank relief valve.
- B. (1) Shuts waste gas discharge CVs, O-WGS-2191 and 2192; (2) manually shut waste gas discharge header flow control valve, O-WGS-2191-PCV to prevent lifting the Waste Gas Discharge Relief Valve.
- C. (1) Shuts waste gas discharge header flow control valve, O-WGS-2191-PCV; (2) Reduce the Waste Gas Surge Tank pressure to prevent lifting the Waste Gas Surge Tank relief valve.
- D. (1) Shuts waste gas discharge header flow control valve, O-WGS-2191-PCV;(2) manually shut waste gas discharge CVs, O-WGS-2191 and 2192 to prevent lifting the Waste Gas Discharge Relief Valve.

Answer: B

## Answer Explanation:

Per alarm actions for D-1.1 O-WGS-2191-PCV must be shut as soon as possible to prevent lifting the Waste Gas discharge header relief from going to the waste gas surge tank. This could lead to an inadvertent release out of the stack via the Waste Gas Surge Tank.(ALM Manual 1C-22 Window D-1.1).

(1) Shuts waste gas discharge CVs, O-WGS-2191 and 2192; (2) Reduce the Waste Gas Surge Tank pressure to prevent lifting the Waste Gas Surge Tank relief valve. -- **Is incorrect**, the actions to reduce Waste Gas Surge Tank pressure are associated with the Main Vent Gaseous monitor alarming ( 1-RI-5414) and only if the pressure in the Surge Tank is high. No indication were given that these conditions exist.

(1) Shuts waste gas discharge CVs, O-WGS-2191 and 2192; (2) manually shut waste gas discharge header flow control valve, O-WGS-2191-PCV to prevent lifting the Waste Gas Discharge Relief Valve. -- **Is correct** since if the PCV is not shut the effect of the CVs auto closing is that pressure will build up in the header and possibly lift the Waste Gas Discharge Header Relief valve back to the Waste Gas Surge Tank which could cause an inadvertent release out of the stack.

(1) Shuts waste gas discharge header flow control valve, O-WGS-2191-PCV; (2) Reduce the Waste Gas Surge Tank pressure to prevent lifting the Waste Gas Surge Tank relief valve.-- **Is incorrect**. since the auto action does not shut the PCV, also the actions to reduce Waste Gas Surge Tank pressure are associated with the Main Vent Gaseous monitor alarming ( 1-RI-5414) and only if the pressure in the Waste Gas Surge Tank is high. No indication were given that these conditions exist.

(1) Shuts waste gas discharge header flow control valve, O-WGS-2191-PCV;(2) manually shut waste gas discharge CVs, O-WGS-2191 and 2192 to prevent lifting the Waste Gas Discharge Relief Valve. **Is incorrect**. since the auto action does not shut the PCV

# EXAMINATION ANSWER KEY

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A, C, D are incorrect per alarm response manual actions for 1C22 D-1.1

Question 6 Info					
Question Type:	Multiple Choice				
Status:	Active				
Always select on test?	No				
Authorized for practice?	No				
Points:	1.00				
Time to Complete:	3				
Difficulty:	2.00				
System ID:	50493				
User-Defined ID:	Q50493				
Cross Reference Number:	LOI-077-1				
Topic:	Upon receiving a Gaseous Waste Discharge (O-RE-2191) high rad alarm, what automatic action occurs an				
RO Importance:	2.6				
SRO Importance:	3.4				
KA Number:	42060AA204				
Comments:	<p>Modified from Bank question LOI-077-1:  <b>Fundamental/Memory</b></p> <p>References: ALM manual for 1C22 pages 102-103</p> <p>Basis: Gaseous Waste Discharge High Rad Alarm Automatic Action</p> <table border="1" data-bbox="787 1302 1499 1522"> <tbody> <tr> <td>000060 Accidental Gaseous Radwaste Release/9</td> <td>AA2.04 – Ability to determine and interpret the following as they apply to the Accidental Gaseous Radwaste: The effects on the power plant of isolating a given radioactive gas leak</td> <td>3. 4</td> </tr> </tbody> </table> <p>K/A Match analysis - The K/A addresses the effect on the power plant of isolating a given radioactive gas release. The question focuses on an important aspect of this knowledge for CCNPP. A Gaseous discharge alarm occurred and to prevent additional contamination from the source, the waste gas discharge valves are shut to isolate the source. The effects of isolating the source is that unless the PCV is shut, the waste gas discharge header relief will lift and discharge to the waste gas surge tank which could cause an inadvertent release. The candidate must interpret from the information that when the waste gas discharge CVs go shut to isolate the source, this will affect the waste gas discharge header and pressure will build up unless he shuts the PCV.</p>		000060 Accidental Gaseous Radwaste Release/9	AA2.04 – Ability to determine and interpret the following as they apply to the Accidental Gaseous Radwaste: The effects on the power plant of isolating a given radioactive gas leak	3. 4
000060 Accidental Gaseous Radwaste Release/9	AA2.04 – Ability to determine and interpret the following as they apply to the Accidental Gaseous Radwaste: The effects on the power plant of isolating a given radioactive gas leak	3. 4			

# EXAMINATION ANSWER KEY

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# EXAMINATION ANSWER KEY

CCNPP 2008 NRC SRO Exam

7

ID: Q50574

Points: 1.00

Your are the CRS during the performance of EOP-0 on U-1. For which of the following radiation monitors in an alarm status would you expect Alternate Actions to be performed by the CRO?

- A. Main Steamline
- B. Main Vent Gaseous
- C. Containment
- D. Wide Range Noble Gas

Answer: C

### Answer Explanation:

EOP -0 Step G, for Verifying the radiation levels external to containment lists 4 monitors to check, Wide Range Noble Gas, Condenser Offgas, S/G BD, and Main Vent Gaseous. of these the only ones that require alternate actions are the , Condenser off-gas or S/G Blowdown, which require securing blowdown. Under Step F for verifying the containment environment safety function, containment radiation monitor alarm is checked and if a valid containment radiation monitor is in alarm, then alternate actions are required to start all available iodine filter fans.

C. Containment is the correct answer

A. Main steam line radiation monitor could be picked by a candidate who associates MS rad monitor with S/G blowdown as indication of S/G tube leakage.

B. Main Vent Gaseous could be selected by a candidate since it is checked during EOP-0 for verifying radiation levels external to containment

C. Wide Range Noble Gas could be selected since it is checked during EOP-0 for verifying radiation levels external to containment

Question 7 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	2.00
System ID:	50574
User-Defined ID:	Q50574
Cross Reference Number:	Q50403
Topic:	Alternate actions for various radiation monitors
RO Importance:	4.2
SRO Importance:	4.4
KA Number:	2244
Comments:	NEW Question: <b>Fundamental/memory</b>  References EOP actions and basis associated with Containment Radiation Monitors

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC SRO Exam

	000061 ARM System Alarms/7	2.2.44 Ability to interpret control room indications to verify the status and operation of a system, and understand how operator actions and directives affect plant and system conditions.	4 . 4
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# EXAMINATION ANSWER KEY

CCNPP 2008 NRC SRO Exam

8

ID: Q50496

Points: 1.00

Which one of the following conditions would require the implementation of EOP-8?

- A. Reactivity Control safety function cannot be met in EOP-0 due to no power available to CEA indications.
- B. Reactor trips on S/G low level, and 11 125VDC bus voltage is reading 110 volts.
- C. EOP-5 is implemented and the intermediate Safety Function Acceptance Criteria is not being met.
- D. The EOP-0 flowchart recommends implementing both EOP-2 and EOP-6.

Answer: C

### Answer Explanation:

- A. Reactivity Control-- **is incorrect**, EOP-0 accepts this condition for not meeting Reactivity. Candidate could be confusing this condition with the condition that would exist if you had power to the CEA indications and you could not verify rods are inserted.
- B. Reactor trips on S/G low level, and 11 125VDC bus voltage is reading 110 volts-- **Is Incorrect**. If you do not have all DC buses greater than 105 VOLTS then you will have to go to EOP-8. Candidate could have the misconception that all busses need to be at 125 VOLTS to call Vital Auxiliaries not met.
- C. Intermediate acceptance criteria not being met.-- **Is correct**, EOP-8 would be implemented if the Intermediate Safety Function is not met.
- D. Flow chart recommends 2 EOPs. **Is Incorrect** Optimal recovery procedure for EOP-6 includes the effect of a loss of Offsite power (EOP-2). Candidate could have the misconception that with a loss of offsite power and another event you need to go to EOP-8, however EOP-3, 4, 5, and 6 are designed to provide guidance for the event with a loss of offsite power.

References EOP-8 basis , III Entry Conditions), EOP-5 basis

Question 8 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	2
Difficulty:	3.00
System ID:	50496
User-Defined ID:	Q50496
Cross Reference Number:	LOI-201-8
Topic:	Which one of the following conditions would require the implementation of EOP-8?
RO Importance:	3.5
SRO Importance:	4.0
KA Number:	44E09EA22
Comments:	Modified from bank question 25083 : <b>Comprehensive/Analysis</b>  References :EOP-5 page 7, EOP-0 pages 19-23.



# EXAMINATION ANSWER KEY

CCNPP 2008 NRC SRO Exam

	CE/E09 Functional Recovery	EA2.2 – Ability to determine and interpret the following as they apply to the (Functional Recovery) (CFR: 43.5 / 45.13): Adherence to appropriate procedures and operation within the limitations in the facility's license and amendments.	4 . 0
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# EXAMINATION ANSWER KEY

CCNPP 2008 NRC SRO Exam

9

ID: Q50432

Points: 1.00

Unit 2 is operating at 100% power when the following are noted:

- 22B RCP Seal TEMP HI PRESS Alarm
- RCP CBO Temp HI Alarm
- 22B Middle Seal Pressure = ~ 1050 PSIA
- 22B Upper Seal Pressure = ~ 1040 PSIA
- VCT Pressure = 50 PSIG
- 22B Seal Bleed-off temperature = 185°F
- 22B Seal bleed-off flow = Zero

Which of the following directions should be given to the CRO and RO?

- A. Commence an expeditious plant shutdown per OP-3, when the Rx is shutdown secure 22B RCP
- B. Implement AOP-2A , trend the remaining seals, contact the System Manager immediately
- C. Trip Unit 2 Reactor. Implement reactivity portion of EOP-0 plaque, then secure 22B RCP, and complete EOP actions
- D. Trip Unit 2 Reactor, then immediately secure 22B RCP, and then complete reactivity portions of EOP-0 plaque.

Answer: B

### Answer Explanation:

B. Implement AOP-2A , contact the System Manager immediately is correct per ALM manual

C. Trip the reactor is action for seal bleed off > 200°F

A. Expeditious shutdown is for 2 failed seals, the Alm manual does not count the vapor seal as one of the 2 seals, even though with zero flow it appears that the vapor seal has failed.

D. If a trip is required then, the rx is tripped, reactivity is performed then the pump is tripped

Reference Alarm Manual 2C06 - Window E-51

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC SRO Exam

Question 9 Info				
Question Type:	Multiple Choice			
Status:	Active			
Always select on test?	No			
Authorized for practice?	No			
Points:	1.00			
Time to Complete:	3			
Difficulty:	4.00			
System ID:	50432			
User-Defined ID:	Q50432			
Cross Reference Number:				
Topic:	SRO -Given conditions parameter values and/or indications associated with the RCP seals ,determine t			
RO Importance:	3.5			
SRO Importance:	3.9			
KA Number:	34003A201			
Comments:	<p>NEW Question: <b>Comprehensive/Analysis</b></p> <p>References: Alarm Manual 1C06 pages 96-99</p> <table border="1" data-bbox="804 965 1518 1278"> <tbody> <tr> <td>003 Reactor Coolant Pump</td> <td>A2.01 – Ability to (a) predict the impacts of the following malfunctions or operations on the RCPS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations:: Problems with RCP seals, especially rates of seal leak-off.</td> <td>3 . 9</td> </tr> </tbody> </table>	003 Reactor Coolant Pump	A2.01 – Ability to (a) predict the impacts of the following malfunctions or operations on the RCPS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations:: Problems with RCP seals, especially rates of seal leak-off.	3 . 9
003 Reactor Coolant Pump	A2.01 – Ability to (a) predict the impacts of the following malfunctions or operations on the RCPS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations:: Problems with RCP seals, especially rates of seal leak-off.	3 . 9		

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC SRO Exam

10

ID: Q50404

Points: 1.00

A large break LOCA has occurred on Unit-2 and all RCPs have been tripped. The RO is attempting to verify subcooled natural circulation and reports the following:

Pressurizer Pressure is 150 PSIA being maintained by HPSI & LPSI flow  
RCS Subcooling based on CETs is 5°F

Which one of the following set of conditions is the **minimum** needed to ensure adequate core cooling?

- A. HPSI and LPSI flow appropriate for current RCS pressure AND  $T_{hot} \sim 425^{\circ}\text{F}$
- B. HPSI and LPSI flow appropriate for current RCS pressure AND  $T_{hot} \sim 405^{\circ}\text{F}$
- C. HPSI and LPSI flow appropriate for current RCS pressure AND  $T_{hot} \sim 388^{\circ}\text{F}$
- D. HPSI and LPSI flow appropriate for current RCS pressure AND  $T_{hot} \sim 360^{\circ}\text{F}$

Answer:

B

or D

### Answer Explanation:

Need to recognize that with CETs at 5°F subcooling, subcooled natural circulation is not being met.

Per EOP-5 Block Step IV. N 2, for verifying subcooled natural circulation, if natural circulation subcooling is not being met, then need to ensure no more than 50° superheat to ensure adequate core cooling.

Since RCS pressure is 150 PSIA the **minimum** conditions for providing at less than 50°F superheat

A. 425°F would not provide < 50°F

B. HPSI and LPSI flow appropriate for current RCS pressure AND  $T_{hot} \sim 405^{\circ}\text{F}$  - Correct would give < 50°F superheat (Sat temp for 150 PSIA = 358.4°F)

C. 388°F would provide < 50°F but the question asked the minimum conditions to give < 50° superheat

D. 360°F would provide < 50°F but the question asked the minimum conditions to give < 50° superheat

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC SRO Exam

Question 10 Info				
Question Type:	Multiple Choice			
Status:	Active			
Always select on test?	No			
Authorized for practice?	No			
Points:	1.00			
Time to Complete:	3			
Difficulty:	3.00			
System ID:	50404			
User-Defined ID:	Q50404			
Cross Reference Number:	LOR-022010101			
Topic:	A large beak LOCA has occurred on Unit-2 and subcooled natural circulation cannot be verified, which			
RO Importance:	4.2			
SRO Importance:	4.3			
KA Number:	41011EA209			
Comments:	<p>Modified based on Based on Q19573 :  <b>Comprehensive/Analysis</b></p> <p>Reference: EOP-5, page 40 , EOP-5 basis pages 49-52</p> <table border="1" data-bbox="714 963 1424 1151"> <tbody> <tr> <td><b>000011 Large Break LOCA/3</b></td> <td>EA2.09- Ability to determine or interpret the following as they apply to a Large Break LOCA(CFR 43.5 / 45.13) : Existence of adequate natural circulation</td> <td>4. 3</td> </tr> </tbody> </table>	<b>000011 Large Break LOCA/3</b>	EA2.09- Ability to determine or interpret the following as they apply to a Large Break LOCA(CFR 43.5 / 45.13) : Existence of adequate natural circulation	4. 3
<b>000011 Large Break LOCA/3</b>	EA2.09- Ability to determine or interpret the following as they apply to a Large Break LOCA(CFR 43.5 / 45.13) : Existence of adequate natural circulation	4. 3		

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC SRO Exam

11

ID: Q50450

Points: 1.00

U-1 is at 100% power with PT-102B out of service, the affected RPS bistables were bypassed. During the shift PT-102D began to act erratically.

- (a) What would be the effect on RPS immediately **IF** PT-102D fails high, and  
(b) What actions are required with PT-102D operating erratically?
- A. (a) The reactor will trip  
(b) Declare PT-102D inoperable and bypass PT-102D
  - B. (a) The reactor would trip if PT-102 A or C were to fail high.  
(b) Declare PT-102D inoperable and place PT-102D in a tripped condition
  - C. (a) The reactor would trip if PT-102 A or C were to fail high  
(b) Declare PT-102D inoperable and bypass PT-102D
  - D. (a) The reactor will trip  
(b) Commence an immediate controlled shutdown

Answer: B

## Answer Explanation:

Need to understand that with one channel out of service, the RPS is in a two of three logic, when the second channel is tripped due to the failed sensor ( 1-PT-102D) you are in a one of two logic to trip. Per technical specification 3.3.B 2 need to restore one to operable within 48 hours.

- A. (a.) A trip of 2 of the remaining in service High Pressurizer pressure bistables is required to cause a Reactor Trip. . (b.) Within 48 hours of declaring PT-102B inoperable, the affected RPS bistables applicable to PT-102B are tripped if unable to restore to operable status.--**Is Incorrect**, since with one trip unit bypassed, when the second trip unit trips due to the sensor ( 1PI-102D) failing high you only need one more of the remaining two in service bistables to trip to cause a reactor trip.
- B. (a.) A trip of 1 of the remaining in service High Pressurizer pressure bistable will cause a Reactor Trip. (b.) Within 48 hours of declaring PT-102D inoperable, restore either PT-102B or PT-102D to operable status and maintain the RPS functional bistables associated with the remaining PT out of service.-- **Is Correct**. since with one trip unit bypassed, when the second trip unit trips due to the sensor (1PI-102D) failing high its bistables will trip and you only need one more of the remaining two in service bistables to trip to cause a reactor trip.
- C. (a.) A trip of 1 of the remaining in service High Pressurizer pressure bistable will cause a Reactor Trip. . (b.) Within 48 hours of declaring PT-102D inoperable, bypass the affected RPS bistables associated with PT-102D and then remove the bypass keys from the functional RPS bistables affected by PT-102D to trip them.-- **Is Incorrect** since you cannot bypas two channels of the same bistable.

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC SRO Exam

- D. (a) A trip of 2 of the remaining in service High Pressurizer pressure bistables is required to cause a Reactor Trip. . (b) Within 48 hours of declaring PT-102B inoperable, restore either PT-102B or PT-102D to operable status and maintain the RPS functional bistables associated with the remaining PT out of service.-- **Is Incorrect**, since with one trip unit bypassed, when the second trip unit trips due to the sensor ( 1PI-102D) failing high you only need one more of the remaining two in service bistables to trip to cause a reactor trip.

Question 11 Info			
Question Type:	Multiple Choice		
Status:	Active		
Always select on test?	No		
Authorized for practice?	No		
Points:	1.00		
Time to Complete:	3		
Difficulty:	3.00		
System ID:	50450		
User-Defined ID:	Q50450		
Cross Reference Number:			
Topic:	PT-102D was declared inoperable		
RO Importance:	3.4		
SRO Importance:	3.7		
KA Number:	37012A203		
Comments:	<p>Modified from Q14450 : <b>Comprehensive/Analysis</b></p> <p>References : Technical Specification 3.3.1-1 through 3.3.1-5</p> <table border="1" data-bbox="714 1308 1419 1585"> <tr> <td>012 Reactor Protection</td> <td>A.2.01 Ability to (a) predict the impacts of the following malfunctions or operations on the RPS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: <b>Faulty Bistable operation</b> (CFR: 41.5 / 43.5 / 45.3 / 45.5)3.7) RO - 3,1 , SRO -3.6</td> </tr> </table>	012 Reactor Protection	A.2.01 Ability to (a) predict the impacts of the following malfunctions or operations on the RPS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: <b>Faulty Bistable operation</b> (CFR: 41.5 / 43.5 / 45.3 / 45.5)3.7) RO - 3,1 , SRO -3.6
012 Reactor Protection	A.2.01 Ability to (a) predict the impacts of the following malfunctions or operations on the RPS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: <b>Faulty Bistable operation</b> (CFR: 41.5 / 43.5 / 45.3 / 45.5)3.7) RO - 3,1 , SRO -3.6		

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC SRO Exam

12

ID: Q50451

Points: 1.00

U-1 is in Mode 6 with reactor vessel level at 43'. ESFAS sensor cabinet ZF (1C94) is to be shutdown for cleaning and inspection. (a) Whose permission is required to deenergize Sensor cabinet ZF (1C94), (b.) will any action statement entry be required?

- A. (a) GS, Shift Operations, (b) No, ESFAS operability is not required.
- B. (a) Shift Manager, (b) No, ESFAS operability is not required.
- C. (a.) Shift Manager, (b.) Yes, one UNIT 1 EDG will be inoperable
- D. (a) GS, Shift Operations, (b.)Yes, one Containment Radiation Sensor module is inoperable.

Answer: B

### Answer Explanation:

OI-34 specifically requires the on shift SM permission to deenergize an ESFAS sensor cabinet. The GS Shift Operations could not grant this permission. With RV level at 43' candidate should interpret this to determine that fuel shuffle is not in progress. With No fuel movement in progress, CRS is not required to be operable. Both A & D are plausible if the candidate has the misconception that a GS of Shift operations could grant this permission. Also they are plausible since ESFAS operability is required for Modes 1-3 only, but CRS is required for Mode 6 moving fuel

A & D are incorrect per OI-34 appendix A step A.1 requires SM approval

C. Incorrect. ESFAS operability required in modes 1-3 per TS 3.3.4 and modes 1-4 for TS 3.3.6, DG- loss of voltage start. Not required in Mode 6.

B. Correct per OI-34 App a & TS 3.3.4 & 3.3.6

Question 12 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	3.00
System ID:	50451
User-Defined ID:	Q50451
Cross Reference Number:	CRO-63-1-3-54
Topic:	U-1 is in Mode 5 for a maintenance outage. ESFAS sensor cabinet ZF (1
RO Importance:	2.3
SRO Importance:	3.5
KA Number:	2221
Comments:	Modified from Q17459: <b>Comprehensive/Analysis</b>  References: Tech Spec 3.3.4-1 through 3.3.4-4, 3.3.6, And OI-34 Appendix A page 1



# EXAMINATION ANSWER KEY

CCNPP 2008 NRC SRO Exam

	013 Engineered Safety Features Actuation	2.2.21 Knowledge of pre- and post-maintenance operability requirements.	4.1
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# EXAMINATION ANSWER KEY

CCNPP 2008 NRC SRO Exam

13

ID: Q50453

Points: 1.00

Given a large steam rupture inside containment in each case, (a) which condition would result in the highest containment temperature? and (b.) which equipment would need to be operated to mitigate this consequence?

- A. (a.) Inadvertent CIS Channel B actuates, (b.) Open IA-2080-MOV
- B. (a.) failure of SIAS Channel A to actuate, (b.) start one(1) Containment Spray pump
- C. (a.) failure of CSAS Channel B to actuate, (b) Open one(1) Containment Spray CV
- D. (a.) failure of SGIS Channel A to actuate, (b.) Shut one(1) Main Feed Isolation Valve

Answer: B

## Answer Explanation:

A. Inadvertent CIS channel B actuation-- **Is incorrect**. This would not appreciably change containment parameters. This is plausible since a candidate could have the misconception that with a loss of IA to containment the Containment Spray valves could fail shut and would need to have air supplied by opening IA-2080 MOV, containment isolation.

B. failure of SIAS Channel A to actuate--**is correct**. One train of containment coolers would fail to operate, and one train of containment spray would fail to operate (spray pump would not start).

C. Failure of CSAS channel B to actuate-- **Is incorrect**. Would result in only a spray train failure (one spray valve would remain shut) but all containment coolers would operate.

D. Failure of SGIS channel A to operate-- **Is incorrect**, each channel operates all required equipment. Candidate could have the misconception that with only one channel actuating he could still be supplying inventory to the S/G which could blow down to the containment, but either channel will isolate both MSIVs and Feed Isolations.

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC SRO Exam

Question 13 Info				
Question Type:	Multiple Choice			
Status:	Active			
Always select on test?	No			
Authorized for practice?	No			
Points:	1.00			
Time to Complete:	5			
Difficulty:	3.00			
System ID:	50453			
User-Defined ID:	Q50453			
Cross Reference Number:				
Topic:	Effect of ESFAS failure on containment cooling systems			
RO Importance:	4.3			
SRO Importance:	4.7			
KA Number:	32013K203			
Comments:	<p>Modified from Q 20347 : <b>Comprehensive/Analysis</b></p> <p>Used on 7/2002 NRC exam,</p> <p>References:LD-58, EOP-5 basis page 32-35</p> <table border="1" data-bbox="714 968 1419 1276"> <tbody> <tr> <td>026 Containment Spray</td> <td>A2.03 – Ability to (a) predict the impacts of the following malfunctions or operations on the CSS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: (CFR: 41.5 / 43.5 / 45.3 / 45.13): Failure of ESF</td> <td>4.4</td> </tr> </tbody> </table>	026 Containment Spray	A2.03 – Ability to (a) predict the impacts of the following malfunctions or operations on the CSS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: (CFR: 41.5 / 43.5 / 45.3 / 45.13): Failure of ESF	4.4
026 Containment Spray	A2.03 – Ability to (a) predict the impacts of the following malfunctions or operations on the CSS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: (CFR: 41.5 / 43.5 / 45.3 / 45.13): Failure of ESF	4.4		

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC SRO Exam

14

ID: Q50455

Points: 1.00

Unit 2 is operating at 100% power during the month of August. Conditions are as follows:

- 23 SRW pump is out of service for maintenance
- Outside Air Temperature ( 102°F)
- Bay Temperature 82°F

Alarm "TURB BLDG SRW HDR PRESS LO" has been intermittently alarming. Which of the following is an appropriate action to take for this alarm?

- A. Determine that the alarm be "Blue Dotted"
- B. Determine that the alarm be "Black Dotted"
- C. Determine that the alarm be "Yellow Dotted"
- D. Determine that the alarm be "Red Dotted"

Answer: A

### Answer Explanation:

Per CNG-OP-1.01 and ALM manual 1C-13 K22 possible cause, this alarm should be blue dotted.

Since the alarm is a nuisance alarm a blue dot would indicate that it is locked in.

B. Black dot would not be used since there is no maintenance being performed that causes this alarm.

D. Red dot is for a tagging activity

C. Yellow dot is for one or more inputs out of service

Question 14 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	3.00
System ID:	50455
User-Defined ID:	Q50455
Cross Reference Number:	
Topic:	SRO - Given conditions, indications, and/or parameter values associated with inoperable SRW alarms,
RO Importance:	3.0
SRO Importance:	3.3
KA Number:	2243
Comments:	NEW Question: <b>Comprehensive/Analysis</b>  Reference  CNG-OP-1.01-2003 page 5 and Alarm Manual for 1C-13 page 39

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC SRO Exam

	076 Service Water	2.2.43 Knowledge of the process used to track inoperable alarms.	3.3
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# EXAMINATION ANSWER KEY

CCNPP 2008 NRC SRO Exam

15

ID: Q50456

Points: 1.00

Using provided reference:

Unit 1 was operating at 100% power when a large Loss of Coolant Accident (LOCA) occurred. EOP-5 has been implemented. Hydrogen concentration rose to .5% and the Hydrogen Recombiners were started. CNTMT TEMP prior to the event was 90°F. Two hours have passed since the Hydrogen Recombiners were started and now the following conditions exist:

H2 concentrations is now .8% and rising  
11 Recombiner power setting is 50 KW  
12 Recombiner is OFF  
Containment Pressure is 4.5 PSIG

Which of the following is the correct action?

- A. Set 11 Hydrogen Recombiner power setting to 57 KW
- B. Set 11 Hydrogen Recombiner power setting to 60 KW
- C. Set 11 Hydrogen Recombiner power setting to 63 KW
- D. Set 11 Hydrogen Recombiner power setting to 65 KW

Answer: B

*Deleted*

**Answer Explanation:**

Per the graph of OI-41A with a Cntmt Press at the CSAS setpoint of 4.25 psig which gives a KW of 60.5 KW. Per the EOP-5 basis document within 1 hour of starting the recombiner it should be functioning, and one recombiner is designed to reduce H2 concentration faster than can be produced from a design basis accident, so if set properly then the H2 concentration should be lowering 2 hours after the recombiner was started. The fact that H2 concentration has risen should indicate that the recombiner is not functioning properly.

- A. Set 11 Hydrogen Recombiner power setting to 57 KW-- Is Incorrect for the conditions given this setting is to low.
- B. Set 11 Hydrogen Recombiner power setting to 60 KW - Is correct for the conditions given.
- C. Set 11 Hydrogen Recombiner power setting to 63 KW-- Is incorrect for the conditions given, this setting is to high.
- D. Set 11 Hydrogen Recombiner power setting to 65 KW-- IS incorrect for the conditions given this setting is to high

B is correct for the conditions given

A, C, D are incorrect since the KW does not match the containment conditions.

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC SRO Exam

Question 15 Info					
Question Type:	Multiple Choice				
Status:	Active				
Always select on test?	No				
Authorized for practice?	No				
Points:	1.00				
Time to Complete:	3				
Difficulty:	2.00				
System ID:	50456				
User-Defined ID:	Q50456				
Cross Reference Number:					
Topic:	SRO - Given Conditions, parameter values and/or indications associated with the Hydrogen recombiner				
RO Importance:	3.4				
SRO Importance:	3.8				
KA Number:	35028A201				
Comments:	<p>NEW Question: <b>Comprehensive/Analysis</b></p> <p>Reference OI-41A page 5 and Figure 1</p> <table border="1"> <tbody> <tr> <td>028 Hydrogen Recombiner and Purge Control</td> <td>A2.01 – Ability to (a) predict the impacts of the following malfunctions or <b>operations</b> on the HRPS; and (b) based on those predictions, use procedures to correct, control or mitigate the consequences of those malfunctions or operations: (CFR: 41.5 / 43.5 / 45.3 / 45.13) Hydrogen recombiner power setting, determined by using plant data</td> <td>3.6 *</td> </tr> </tbody> </table>		028 Hydrogen Recombiner and Purge Control	A2.01 – Ability to (a) predict the impacts of the following malfunctions or <b>operations</b> on the HRPS; and (b) based on those predictions, use procedures to correct, control or mitigate the consequences of those malfunctions or operations: (CFR: 41.5 / 43.5 / 45.3 / 45.13) Hydrogen recombiner power setting, determined by using plant data	3.6 *
028 Hydrogen Recombiner and Purge Control	A2.01 – Ability to (a) predict the impacts of the following malfunctions or <b>operations</b> on the HRPS; and (b) based on those predictions, use procedures to correct, control or mitigate the consequences of those malfunctions or operations: (CFR: 41.5 / 43.5 / 45.3 / 45.13) Hydrogen recombiner power setting, determined by using plant data	3.6 *			

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC SRO Exam

16

ID: Q50710

Points: 1.00

Using Provided references:

Given the following conditions:

- Unit 1 is in Mode 6
- Fuel Handling is in progress
- Containment Purge is in operation to reduce noble gas activity below ALARA Dose Goals.

RI-5316A (Containment Area Monitor) has just been removed from service due to erratic operation and has been placed in a tripped condition per Technical Specification 3.3.7A. You are the Operations Work Coordinator (OWC). Instrument Maintenance wants to trouble shoot the failed RI-5316A and has informed you that they will utilize peer checking to ensure they are working on RI-5316A only.

Which of the following is the correct Risk Assessment for this troubleshooting activity?

- A. Medium Risk to Nuclear Safety AND Low Risk to Environmental Safety
- B. High Risk to Nuclear Safety AND Low Risk to Environmental Safety
- C. Medium Risk to Nuclear Safety, AND Medium Risk to Environmental Safety.
- D. High Risk to Nuclear Safety AND Medium Risk to Environmental Safety

Answer: C

### Answer Explanation:

Candidate should conclude based on the information in the stem of the question that this work is emergent work. His knowledge of the arrangement of the RMS panels informs him that channel A and B of RI-5316 are right next to each other and in the same drawer so there is a potential for incorrect performance which could lead to an ESF actuation (CRS) which would secure containment purge. He should then use attachments 11 and 2 of NO-1-117 to assess the risk. The note on Attachment 11 tells him that risk assessment applies to the shutdown unit, and step 1 of the attachment directs him to attachment 2 to determine the risk. From page 1 attachment 2 A1 he should determine that for the third bullet incorrect performance could lead to an ESF actuation and therefore leads him to section 2 for high risk assessment. On Page 7 of attachment 2 A1, he should determine based on information in the stem that verification practices are practical so the answers to this section is NO. and should lead him to Medium Risk to nuclear safety. Environmental Risk is affected due to the potential for terminating a release associated with the containment purge.

Medium Risk to Nuclear Safety AND Low Risk to Environmental Safety -- Is Incorrect because it does not meet the criteria for attachment 2 (page 7) of NO-1-117

High Risk to Nuclear Safety AND Low Risk to Environmental Safety -- Is Incorrect because it does not meet the criteria for attachment 2 of NO-1-117 is related to electrical issues.(page 8)

High Risk to Nuclear Safety AND Medium Risk to Environmental Safety -- Is incorrect because it screens out as medium Risks, because the use of verification practices is practical.(page 7 item A1)



# EXAMINATION ANSWER KEY

CCNPP 2008 NRC SRO Exam

Medium Risk to Nuclear Safety, AND Medium Risk to Environmental Safety. - Is correct because verification practices are practical in this situation and this makes it screen out as Medium Nuclear Risk and since potential for terminating the containment purge, this screens out to Medium Risk for Environmental Safety.

Question 16 Info					
Question Type:	Multiple Choice				
Status:	Active				
Always select on test?	No				
Authorized for practice?	No				
Points:	1.00				
Time to Complete:	3				
Difficulty:	3.00				
System ID:	50710				
User-Defined ID:	Q50710				
Cross Reference Number:	CRO-134-1/4.1				
Topic:	SRO - Apply appropriate conservative decision making practices for Area Radiation Monitoring				
RO Importance:	3.6				
SRO Importance:	4.3				
KA Number:	2139				
Comments:	<p>New Question: <b>Comprehensive/Analysis</b></p> <p>References: NO-1-117 attachment 2 and 11</p> <table border="1" data-bbox="683 1104 1385 1199"> <tr> <td>072 Area Radiation Monitoring</td> <td>X</td> <td>2.1.39 Knowledge of conservative decision making practices.</td> <td>4.3</td> </tr> </table> <p>Reference Provided to the candidate is NO-1-117 attachment 2 and attachment 11</p> <p>IF APPLICANTS ASK, IT IS OKAY TO TELL THEM WE ARE NOT IN ACTION LEVEL ONE.</p>	072 Area Radiation Monitoring	X	2.1.39 Knowledge of conservative decision making practices.	4.3
072 Area Radiation Monitoring	X	2.1.39 Knowledge of conservative decision making practices.	4.3		

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC SRO Exam

17

ID: Q50459

Points: 1.00

Using provided reference(s):

A tornado on site results in a Loss of Offsite Power and damage to 11 CST. Both units were tripped at 1600 on 4/3. All other systems and equipment operated as expected.

Based on the following CST inventories taken at 1700, approximately how long can U-2 remain in Hot Standby?

11 CST - Punctured by tornado debris, no useable level

12 CST - 29'

21 CST - 21.5'

- A. 0500 on 4/4
- B. 0900 on 4/5
- C. 1100 on 4/6
- D. 2300 on 4/4

Answer: B

**Answer Explanation:**

Modified from Q26566

Reference: are EOP attachment 9 ( 5 pages)

The available CST volume available to U-2 is ~308,000 gallons once calculated using the EOP Attachment (9) for U-2. Looking at the graph for Makeup water required to maintain Hot Standby, a time of ~40 hours is determined, or 4/5 at 0900.

Answer A is incorrect since it utilizes the same input parameters but uses the U-1 EOP Attachment (9) to perform the calculation rather than the U-2 Attachments, resulting in a 12 hour allowance.

Answer C is incorrect if, during the calculation on the U-2 Attachment (9), the 12 CST volume is not divided by 2, yielding ~66 hours.

Answer D is incorrect if, during the calculation on the U-1 Attachment (9), the 12 CST volume is not divided by 2, yielding ~30 hours.

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC SRO Exam

Question 17 Info				
Question Type:	Multiple Choice			
Status:	Active			
Always select on test?	No			
Authorized for practice?	No			
Points:	1.00			
Time to Complete:	3			
Difficulty:	3.00			
System ID:	50459			
User-Defined ID:	Q50459			
Cross Reference Number:	SRO-201-2-1-10			
Topic:	Time to remain in hotstandby, 12 CSTunavailable			
RO Importance:	2.8			
SRO Importance:	3.1			
KA Number:	2125			
Comments:	<b>Modified from SRO-201-2-1-10. Comprehensive/Analysis</b>  References EOP attachments (9) 5 pages <table border="1" data-bbox="685 936 1395 1000"><tr><td>2.1. 25</td><td>Ability to interpret reference materials, such as graphs, curves, tables, etc.</td><td>4.2</td></tr></table>	2.1. 25	Ability to interpret reference materials, such as graphs, curves, tables, etc.	4.2
2.1. 25	Ability to interpret reference materials, such as graphs, curves, tables, etc.	4.2		

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC SRO Exam

18

ID: Q50462

Points: 1.00

During movement of irradiated fuel, a 30 gpm leak in the refueling cavity hatch seal requires that fuel handling cease. The refueling machine operator has just removed a fuel assembly from the core and is indexed over the upender. The transfer carriage is in the refueling cavity and vertical. What actions should the FHS direct?

- A. Immediately secure the refueling machine and evacuate containment.
- B. Send the carriage to the spent fuel pool, place the fuel assembly in any empty core location and shut the transfer tube gate.
- C. Place the fuel assembly in the deep pocket, beside the upender and shut the transfer tube gate valve.
- D. Place the fuel assembly in the upender carriage, send it to the spent fuel pool and shut the transfer tube gate valve.

Answer: D

## Answer Explanation:

Immediately secure the refueling machine and evacuate containment. -- **Is Incorrect.** Because the fuel assembly is not in a defined " safe location" (Inserted in core, Spent Fuel Pool, Upender, or grappled in either the bottom of the SFP upender area or bottom of the Spent Fuel Pool Upender area), securing the refueling machine is not correct. AOP -6E specifically directs that the fuel assembly be placed in a safe location prior to securing power to the refueling machine.

Send the carriage to the spent fuel pool, place the fuel assembly in any empty core location and shut the transfer tube gate.-- **Is Incorrect**, per AOP 6E, since the fuel assembly was fully withdrawn, it must be placed in an approved core or SFP storage location. Since Nuclear Fuel Management has not designated all empty locations as approved this is not correct. If this had stated return to the previous core location this would have been acceptable per AOP 6E.

Place the fuel assembly in the deep pocket, beside the upender and shut the transfer tube gate valve.-- **Is Incorrect**, per AOP6E , the transfer tube gate valve cannot be shut until the transfer carriage is in the SFP. Since this has not been done this is not an acceptable answer.

Place the fuel assembly in the upender carriage, send it to the spent fuel pool and shut the transfer tube gate valve. - **Is correct** per AOP 6E. for the conditions stated the fuel assembly must be placed in upender, approved core location, or bottom of the RFP upender area grappled per AOP6E IV A.2.e

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC SRO Exam

Question 18 Info				
Question Type:	Multiple Choice			
Status:	Active			
Always select on test?	No			
Authorized for practice?	No			
Points:	1.00			
Time to Complete:	3			
Difficulty:	3.00			
System ID:	50462			
User-Defined ID:	Q50462			
Cross Reference Number:				
Topic:	Action for stopping core alterations			
RO Importance:	3.0			
SRO Importance:	4.1			
KA Number:	2136			
Comments:	Bank question Q14516 : <b>Comprehensive/Analysis</b>  Reference AOP 6E pages 8-11 <table border="1" data-bbox="673 888 1372 951"><tr><td>2.1. 36</td><td>Knowledge of procedures and limitations involved in core alterations.</td><td>4.1</td></tr></table>	2.1. 36	Knowledge of procedures and limitations involved in core alterations.	4.1
2.1. 36	Knowledge of procedures and limitations involved in core alterations.	4.1		

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC SRO Exam

19

ID: Q45548R

Points: 1.00

Using Provided references:

Unit 1 is in Mode 1. An MO was generated to work a deficiency on 13 AFW pump. The deficiency is a clouded oil sight glass. The pump is still operable. It cannot be worked by FIN and must be planned and scheduled. Operations is concerned about the deficiency and it has operator compensatory actions associated to it, however it requires the 13 AFW pump to be declared inoperable and removed from service to perform the work. What priority and schedule should this MO be?

- A. 4 - White, Schedule as resources allow with the normal process
- B. 2- Yellow, Schedule at earliest opportunity within T-3
- C. 3 - Orange, schedule at next available system week with 13 week matrix
- D. 1 - Red, Begin immediately and work around the clock

Answer: C

### Answer Explanation:

C is correct Per CNG-MN-4.01 -1002, attachment 1, Online prioritization matrix, Since this is elective maintenance - 3 - Orange, schedule at next available system week with 13 week matrix is correct.

A, B, D are incorrect per CNG-MN-4.01 Att 1 and the fact that this maintenance is not corrective maintenance per definition of corrective maintenance. Key is AFW pump is still operable and is stated as such in the stem.

Question 19 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	2.00
System ID:	50464
User-Defined ID:	Q45548R
Cross Reference Number:	
Topic:	Explain the priority system and maintenance order worktypes, and how they are not related
RO Importance:	2.6
SRO Importance:	3.9
KA Number:	2218
Comments:	NEW Question : <b>Comprehensive/Analysis</b>  Reference CNG-MN-4.01 attachment 1.  Note: Attachment one should be provided

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC SRO Exam

	2.2. 18	Knowledge of the process for managing maintenance activities during shutdown operations, such as risk assessments, work prioritization, etc.	3.9
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# EXAMINATION ANSWER KEY

CCNPP 2008 NRC SRO Exam

20

ID: Q50655

Points: 1.00

Given the following conditions:

- SG blowdown tank radiation monitor (RI-4014) is in alarm
- SG tube rupture is in progress on the effected SG and level is +30 inches and steady
- Upon the reactor trip a loss of main condenser vacuum occurred
- SG level on unaffected SG reached -180 inches in EOP-0 and is presently at -100 inches and slowly returning to 0 inches

It is desired to establish SG blowdown to restore the affected SG level to 0 inches. Which of the following is a correct action?

**Assume all admin and radiological controls have been satisfied**

- A. Direct the CRO to place the alarm in cutout to reopen the blowdown isolation CVs.
- B. Direct the CRO to deenergize SG blowdown tank rad monitor, R1-4014, to reopen the blowdown isolation CVs.
- C. Direct the CRO to bypass RIC-4014 using the Alarm Bypass Key Lock Switches.
- D. Direct the CRO to place the blowdown isolation CVs in RAD TRIP OVERRIDE.

Answer: D

## Answer Explanation:

Direct the CRO to place the alarm in cutout to reopen the blowdown isolation CVs.- **Is Incorrect.** The alarm cutout pushbutton on 1C22 will silence the alarm and allow the master RMS alarm to clear but will not allow the CVs to open.

Direct the CRO to deenergize SG blowdown tank rad monitor, R1-4014, to reopen the blowdown isolation CVs.-- **Is Incorrect.** This would cause the blowdown CVs to go shut.

Direct the CRO to bypass RIC-4014 using the Alarm Bypass Key Lock Switches-- **Incorrect** RI-4014 does not have Alarm Bypass Key Lock Switches, RIC-4095 ( Blowdown Recovery Monitor) has Alarm Bypass Key Lock Switches.

Direct the CRO to place the blowdown isolation CVs in RAD TRIP OVERRIDE.-- **IS Correct,** the RAD TRIP OVERRIDE H/S will allow you to open the S/G bottom blowdown CVs and place blowdown in service.

This question requires knowledge of the RMS system for S/G blowdown and blowdown recovery including the auto actions associated with RI-4014 and 4095 and the means provided for controlling S/G level with an RMS alarm.



# EXAMINATION ANSWER KEY

CCNPP 2008 NRC SRO Exam

Question 20 Info				
Question Type:	Multiple Choice			
Status:	Active			
Always select on test?	No			
Authorized for practice?	No			
Points:	1.00			
Time to Complete:	3			
Difficulty:	3.00			
System ID:	50655			
User-Defined ID:	Q50655			
Cross Reference Number:	Q24660			
Topic:	Establish/maintain SG blowdown flow when RI-4014 in alarm			
RO Importance:				
SRO Importance:				
KA Number:	020170420			
Comments:	<p>Modified from bank question Q24660 :  <b>Comprehensive/Analysis</b></p> <p>Basis: SG Blowdown Tank Radiation Monitor in Alarm            References:</p> <table border="1" data-bbox="697 1089 1400 1247"> <tr> <td>2.3.15</td> <td>Knowledge of radiation monitoring systems, such as fixed radiation monitors and alarms, portable survey instruments, personnel monitoring equipment, etc.</td> <td>3.4</td> </tr> </table> <p>References:            OI-35 Radiation Monitoring System Section 6.11 for RIC-4014 and 6.18 for Blowdown Recovery Radiation Monitor (1(2)-4095)            EOP -6 Section O.1 for maintaining the affected S/ Level during a SGTR            Alarm Manual for IC-22 Window A-4.2 RI -4014 and Window D-5.1 RI-4095            Drawings 1E-83 Sh.3 and Sh 16</p>	2.3.15	Knowledge of radiation monitoring systems, such as fixed radiation monitors and alarms, portable survey instruments, personnel monitoring equipment, etc.	3.4
2.3.15	Knowledge of radiation monitoring systems, such as fixed radiation monitors and alarms, portable survey instruments, personnel monitoring equipment, etc.	3.4		

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC SRO Exam

21

ID: Q50653

Points: 1.00

Unit 2 experienced a Reactor Trip and EOP-0 has been implemented. After all safety function have been assessed the containment normal sump alarm annunciates. Which actions are correct per NO-1-201?

- A. Drain the containment normal sump to establish a trend for RCS leakrate, then implement the optimal EOP.
- B. Briefly evaluate the containment environment for degrading conditions then implement the optimal EOP.
- C. Implement the optimal EOP and then evaluate containment environment for degrading conditions.
- D. Implement the optimal EOP and then drain the containment normal sump to establish a trend for RCS leakrate.

Answer: B

### Answer Explanation:

Drain the containment normal sump to establish a trend for RCS leakrate, then implement the optimal EOP.-- **Is Incorrect**, Per NO-1-201 the containment environment must be evaluated for this alarm prior to implementing the optimal EOP

Briefly evaluate the containment environment for degrading conditions then implement the correct optimal EOP.-- **Is correct** per NO-1-201

Implement the optimal EOP and then evaluate containment environment.-- **Is Incorrect**, prior to going to the optimal EOP the containment environment must be evaluated since the alarm came in after the CE safety function was evaluated.

Implement the optimal EOP and then drain the containment normal sump. - **Is Incorrect**, prior to going to the optimal EOP the containment environment must be evaluated since the alarm came in after the CE safety function was evaluated.

Question 21 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	0
Difficulty:	2.00
System ID:	50653
User-Defined ID:	Q50653
Cross Reference Number:	201-0-8-S-02
Topic:	Actions for EOP-0 and Containment Normal Sump Alarm
RO Importance:	3.7
SRO Importance:	4.3
KA Number:	245
Comments:	Modified from Bank Q25069 : <b>Comprehensive/Analysis</b>  References: NO-1-201, page 22

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC SRO Exam

	2.4.5	Knowledge of the organization of the operating procedures network for normal, abnormal, and emergency evolutions. (CFR: 41.10 / 43.5 / 45.13)	4.3
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## **Question 21 Table-Item Links**

### A / O Training Program

Licensed Operator Requal Training (LOR)

### **Operations Procedure References (from Nucleis)**

EOP EOP-04-1 EXCESS STEAM DEMAND EVENT

### System Designations

Emergency Operating Procedures (EOPs)

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC SRO Exam

22

ID: Q50470

Points: 1.00

A fault has occurred on P-13000-2, resulting in a U-2 reactor trip. During EOP-0, the 2B DG experienced a start failure. Given the following additional plant conditions, what Optimal Recovery Procedure should be implemented?

Boration in progress with no CEA indication  
RCS pressure 1900 psia and lowering  
Pzr Level 130 inches and slowly lowering  
RCS Tcold 518°F and lowering  
RCS Subcooling is 107 °F  
21 SG Pressure 835 psia and steady  
22 SG Pressure 800 psia and lowering  
21 SG Level (-)105 inches and slowly rising  
22 SG Level (-)180 inches and lowering  
Containment Environment and Rad Levels External to Containment are met

- A. EOP-6, Steam Generator Tube Rupture
- B. EOP-2, Loss of Forced Circulation
- C. EOP-4, Excess Steam Demand
- D. EOP-5, Loss of Coolant Accident

Answer: C

### Answer Explanation:

Based on EOP-0 diagnostic flow chart, Core and RCS Heat Removal would not be met, and subcooled would be high, along with 22 S/G pressure lowering and 22 S/G level lowering. This would lead to the conclusion that an excess steam demand event is in progress.

A, B, D incorrect per EOP-0 flowchart

A incorrect, Radiation Levels External to Containment Safety Function is met met , no RMS trends or alarms so no indication of SGTR

B EOP-2, Loss of Forced Circulation - is incorrect, based on indications there is more than a loss of power occurring

D. incorrect since subcooling is too high to be consistent with a LOCA

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC SRO Exam

Question 22 Info				
Question Type:	Multiple Choice			
Status:	Active			
Always select on test?	No			
Authorized for practice?	No			
Points:	1.00			
Time to Complete:	3			
Difficulty:	3.00			
System ID:	50470			
User-Defined ID:	Q50470			
Cross Reference Number:				
Topic:	Given conditions determine the optimal recovery procedure			
RO Importance:	3.7			
SRO Importance:	4.3			
KA Number:	2421			
Comments:	<p>Modified from 245 : <b>Comprehensive/Analysis</b></p> <p>References : EOP-0 pages 19-23</p> <p>Provide diagnostic flow chart</p> <table border="1" data-bbox="714 980 1419 1175"> <tr> <td>2.4.21</td> <td>Knowledge of the parameters and logic used to assess the status of safety functions, such as reactivity control, core cooling and heat removal, reactor coolant system integrity, containment conditions, radioactivity release control, etc.</td> <td>4.6</td> </tr> </table>	2.4.21	Knowledge of the parameters and logic used to assess the status of safety functions, such as reactivity control, core cooling and heat removal, reactor coolant system integrity, containment conditions, radioactivity release control, etc.	4.6
2.4.21	Knowledge of the parameters and logic used to assess the status of safety functions, such as reactivity control, core cooling and heat removal, reactor coolant system integrity, containment conditions, radioactivity release control, etc.	4.6		

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC SRO Exam

23

ID: Q50553

Points: 1.00

For each of the following maintenance activities identify the category of post maintenance testing required

1. 11 Condensate Pump coupling replacement
2. 13 Charging pump repacking
3. 11 Demineralized water transfer pump motor maintenance

- A.
  1. Post Maintenance Functional Test
  2. Post Maintenance Operability Test
  3. Rotational Check
- B.
  1. Rotational Check
  2. Post Maintenance Operability Test
  3. Post Maintenance Functional Test
- C.
  1. Rotational Check
  2. Post Maintenance Operability Test
  3. Rotational Check
- D.
  1. Post Maintenance Functional Test
  2. Post Maintenance Operability Test
  3. Post Maintenance Functional Test

Answer: A

**Answer Explanation:**

1. Post Maintenance Functional Test
2. Post Maintenance Operability Test
3. Rotational Check correct per MN-1-201 , and NO-1-208

B & C incorrect, per NO-1-208 5.6.B.1 post maintenance functional test may be required for equipment that is trip sensitive and PP is trip sensitive

D is incorrect 11 DI xfr pump is not trip sensitive

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC SRO Exam

Question 23 Info				
Question Type:	Multiple Choice			
Status:	Active			
Always select on test?	No			
Authorized for practice?	No			
Points:	1.00			
Time to Complete:	3			
Difficulty:	3.00			
System ID:	50553			
User-Defined ID:	Q50553			
Cross Reference Number:				
Topic:	Determine post maintenance test requirements			
RO Importance:	2.1			
SRO Importance:	3			
KA Number:	2214			
Comments:	<p>New Question : <b>Fundamental/Memory</b></p> <p>written for K/A 2.2.14</p> <p>Reference NO-1-208 section 5.6 page 1, and pages 6, 8-9</p> <table border="1" data-bbox="702 968 1404 1032"> <tr> <td>2.2.14</td> <td>Knowledge of the process for controlling equipment configuration or status.</td> <td>4.3</td> </tr> </table>	2.2.14	Knowledge of the process for controlling equipment configuration or status.	4.3
2.2.14	Knowledge of the process for controlling equipment configuration or status.	4.3		

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC SRO Exam

24

ID: Q20602

Points: 1.00

Unit 2 is in Mode 6 with refueling in progress and Normal Containment Purge in service. The Equipment hatch is installed and the Personnel Airlock (PAL) is open. A momentary loss of power causes the operating Main Exhaust Fan to trip.

(a) What is the effect on containment parameters, (b) What is the correct action?

- A. (a) Containment refueling pool level decreases, (b) Continue refueling operations.
- B. (a) Containment pressure rises 1 to 2 PSIG, (b) Initiate additional containment cooling
- C. (a) Containment area radiation monitors (RE-5316-A through -D) indicate higher, (b) Start all available Iodine Filter Units
- D. (a) Containment refueling pool level increases, (b) Continue refueling operations.

Answer: A

Answer Explanation:

*Deleted*

A. Containment pressure rises 1 to 2 PSIG--incorrect, containment pressure will change, but experience indicates, the change will be less than .5 PSIG.

B. Area radiation monitors (RE-5316A-D) indicate higher--incorrect, the area monitors would not change if Purge is lost.

C. Refueling pool level increases--Incorrect The Main Exhaust Fan tripping would cause Containment Purge to secure. This would cause containment pressure to rise slightly, with the transfer tube gate valve open, refueling pool level will decrease (Not Increase) accordingly due to the differential pressure between the SFP area and containment. (SFP is maintained at a slight negative pressure)

D. Refueling pool level increases--**Is Correct.** The Main Exhaust Fan tripping would cause Containment Purge to secure. This would cause containment pressure to rise slightly, with the transfer tube gate valve open, refueling pool level will decrease accordingly due to the differential pressure between the SFP area and containment. (SFP is maintained at a slight negative pressure)Continue refueling operations since no loss of RFP level.

per OI-36 general precaution F. The Main Exhaust Fan tripping would cause Containment Purge to secure which would cause a change in the differential pressure between the SFP and the RFP



# EXAMINATION ANSWER KEY

CCNPP 2008 NRC SRO Exam

Question 24 Info				
Question Type:	Multiple Choice			
Status:	Active			
Always select on test?	No			
Authorized for practice?	No			
Points:	1.00			
Time to Complete:	3			
Difficulty:	3.00			
System ID:	50497			
User-Defined ID:	Q20602			
Cross Reference Number:	CRO-134-1-5-44			
Topic:	Containment parameter changes on loss of Purge			
RO Importance:	2.8			
SRO Importance:	3.7			
KA Number:	029A201			
Comments:	<p>Modified from Bank Question Used 7/2002 NRC exam :  <b>Comprehensive/Analysis</b></p> <p>References: OI-36, page 5</p> <table border="1" data-bbox="685 925 1395 1298"> <tr> <td>029 Containment Purge</td> <td>A2.01-Ability to (a) predict the impacts of the following malfunctions or operations on the Containment Purge System; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: (CFR: 41.5 / 43.5 / 45.3 / 45.13)Maintenance or other activity taking place inside containment</td> <td>3.6</td> </tr> </table>	029 Containment Purge	A2.01-Ability to (a) predict the impacts of the following malfunctions or operations on the Containment Purge System; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: (CFR: 41.5 / 43.5 / 45.3 / 45.13)Maintenance or other activity taking place inside containment	3.6
029 Containment Purge	A2.01-Ability to (a) predict the impacts of the following malfunctions or operations on the Containment Purge System; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: (CFR: 41.5 / 43.5 / 45.3 / 45.13)Maintenance or other activity taking place inside containment	3.6		

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC SRO Exam

25

ID: Q20588

Points: 1.00

Unit-2 is operating at 100% power with:

- 2-LT-110X, PZR Level transmitter selected
- 2-HS-100-3, PZR Heater Low Level Cutout Switch in the X+Y position

If a leak on 2-LT-110X variable leg developed, what is one of the operator actions that must be directed by the CRS to restore pressurizer control system functions to automatic?

- A. Shut Letdown Stop Valves, 2CVC-515 and 516
- B. Place 2-HS-100-3, PZR Heater Low Level Cutout Switch to channel Y
- C. Adjust Pressurizer Level Controller, 2-LIC-110X, setpoint to shut the letdown control valve
- D. Place Pressurizer Level Controller, 2-LIC-110Y, in AUTO-LOCAL

Answer: B

### Answer Explanation:

Place 2-HS-100-3, PZR Heater Low Level Cutout Switch to channel Y--correct per Alarm Response Manual.

Shut Letdown Stop Valves, 2CVC-515 and 516--incorrect, this may be necessary for a large leak, but would not allow automatic level control.

Adjust Pressurizer Level Controller, 2-LIC-110X, setpoint to shut the letdown control valve--incorrect, not supported by procedures and would take continuous operator monitoring to maintain level.

Place Pressurizer Level Controller, 2-LIC-110Y, in AUTO-LOCAL--incorrect, the remote setpoint function is still available, the proper action would be to place LIC-110-Y in service

Question 25 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	3.00
System ID:	50670
User-Defined ID:	Q20588
Cross Reference Number:	
Topic:	Identify effects and actions for a LT-110 X variable leg leak
RO Importance:	2.8
SRO Importance:	3.3
KA Number:	028AA203
Comments:	Bank Question Used 7/2002 NRC exam : <b>Comprehensive/Analysis</b> References: 55.41.7, 55.43.5

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC SRO Exam

	000028 Pressurizer Level Malfunction/2						X	2.1 Knowledge of conduct of operations requirements.	4 . 2
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# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

1

ID: Q50230

Points: 1.00

Unit 1 was operating at 100% power MOC when an event occurred. The appropriate AOP was entered, appropriate actions were taken and the reactor was manually tripped. No other actions have been taken. The following conditions now exist:

1. Pressurizer pressure is 1724 PSIA and lowering
2. RCS Tcold is 530°F and steady
3. S/G Press is ~880 PSIG in both S/Gs
4. Pressurizer level is 185" and rising
5. All CHG pumps are operating
6. Letdown is isolated
7. CNTMT Pressure is 1.7 PSIG and slowly rising

Which of the following actions and reasoning are correct for the conditions given:

- A. TRIP 11A & 12B RCPs to minimize heat input into the RCS
- B. TRIP 11B & 12B RCPs to minimize coolant inventory loss from the RCS
- C. TRIP 11A & 12B RCPs to minimize coolant inventory loss from the RCS
- D. TRIP 11B & 12A RCPs to minimize heat input into the RCS

Answer: C

## Answer Explanation:

Choice C is correct based on EOP-5 Basis Step IV.E. The EOP basis says that the RCP trip strategy ensures RCPs are secured for a small break LOCA (the hot leg case being more restrictive), while at the same time allowing two or more RCPs to remain running in the event of a non-LOCA. The incentive for stopping all RCPs during a LOCA is to minimize coolant inventory loss from the RCS. Further, it states that if RCS pressure drops to 1725 PSIA, as a result of the event, then trip RCPs so that either of the following pairs of RCPs remain running: 11A and 12B (21A and 22B) RCPs, or 11B and 12A (21B and 22A) RCPs, and to trip all RCPs if CIS has actuated, Component Cooling flow can not be verified to the RCPs, or if RCS temperature and pressure are less than the minimum pump operating limits.

The conditions given support the conclusion that the trip strategy should be implemented.

Distractor A is incorrect since it states an incorrect basis for the trip two leave two strategy, the strategy is not based on minimizing heat input into the reactor.

Distractor B is incorrect since it lists an incorrect pair of RCPs to trip

Distractor D is incorrect since it lists an incorrect Basis for the trip two leave two strategy

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

Question 1 Info				
Question Type:	Multiple Choice			
Status:	Active			
Always select on test?	No			
Authorized for practice?	No			
Points:	1.00			
Time to Complete:	3			
Difficulty:	3.00			
System ID:	50230			
User-Defined ID:	Q50230			
Cross Reference Number:				
Topic:	Correct Actions , RCP Trip Strategy			
RO Importance:	4.2			
SRO Importance:	4.6			
KA Number:	42008AK304			
Comments:	<p>New Question : <b>Comprehensive/Analysis</b></p> <p>Reference EOP-5 Basis page 27 &amp; 28 ( Basis for step IV.E EOP-5 Unit 1 page 11</p> <table border="1" data-bbox="764 946 1473 1225"> <tbody> <tr> <td>000008 Pressurizer Vapor Space Accident / 3</td> <td>AK3.04 Knowledge of the reasons for the following responses as they apply to the Pressurizer Vapor Space Accident (CFR 41.5,41.10 / 45.6 / 45.13); RCP tripping requirements</td> <td>4. 2</td> </tr> </tbody> </table> <p>This question gives indications typical of a pressurizer vapor space accident in the stem, along with a RCS pressure which should be interpreted to conclude that a SIAS has or should have occurred. Based on this the RCP trip strategy should be implemented. The candidate must determined which two RCPs should be tripped for the trip strategy , and recall the basis for this action.</p>	000008 Pressurizer Vapor Space Accident / 3	AK3.04 Knowledge of the reasons for the following responses as they apply to the Pressurizer Vapor Space Accident (CFR 41.5,41.10 / 45.6 / 45.13); RCP tripping requirements	4. 2
000008 Pressurizer Vapor Space Accident / 3	AK3.04 Knowledge of the reasons for the following responses as they apply to the Pressurizer Vapor Space Accident (CFR 41.5,41.10 / 45.6 / 45.13); RCP tripping requirements	4. 2		

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

2

ID: Q50231

Points: 1.00

Unit 2 was operating at 100% power when the following conditions were noted:

1. Pressurizer level is 195" and slowly lowering
2. RCS Tavg is 570°F and steady
3. 21 & 22 CHG pumps are operating
4. Letdown is at minimum
5. Pressurizer pressure is 2100 PSIA and slowly lowering

The appropriate AOP was entered, and then a reactor trip was manually initiated and EOP-0 was entered. The appropriate optimal EOP has been entered and now the following conditions exist:

1. 21 SG Level is - 115" and steady
2. 22 S/G level is - 90" and steady
3. 23 AFW pump is operating, feeding both S/Gs
4. Pressurizer pressure is 1340 PSIA and slowly lowering
5. 21 & 23 HPSI pumps are running
6. Tcold is 526°F and steady
7. S/G Blowdown and Main Steam N-16 radiation Monitors are reading normal

Which of the following is correct based on the conditions listed above

- A. Heat removal is adequate based on 22 S/G level only
- B. Heat removal is adequate based on 21 or 22 S/G
- C. Heat removal is inadequate based on 21 & 22 S/G levels
- D. Heat removal is inadequate based on 21 S/G only

Answer: C

## Answer Explanation:

Distractor A, B, D are incorrect since neither S/G has enough inventory, both 21 and 22 S/G levels are below the top of the tube bundle (-72"). Per the EOP-5 basis for Step IV. L on page 45, the safety analysis for small break LOCA assumes the S/G tubes are covered during recovery to permit adequate HPSI flow. See OI 12A Figure 3.

Adequate RCS heat removal will be maintained as long as at least one S/G has feedwater capability (so its level can be maintained) and has steaming capability (so energy can be removed from the S/G). The S/Gs are checked to ensure either main or auxiliary feedwater is maintaining adequate S/G water level.

Maintaining at least one S/G as a heat sink available for RCS heat removal and cooldown is especially important in the case of a small break LOCA where RCS coolant leaking from the rupture is insufficient to remove the decay heat being produced. The Safety Analysis for Small Break LOCA assumes that the S/G tubes are covered during recovery to permit adequate HPSI flow. In addition, maintaining S/G water level above the top of the U-tubes provides sufficient static pressure head to prevent migration of containment radioactivity to the S/G secondary side.

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

Question 2 Info				
Question Type:	Multiple Choice			
Status:	Active			
Always select on test?	No			
Authorized for practice?	No			
Points:	1.00			
Time to Complete:	3			
Difficulty:	3.00			
System ID:	50231			
User-Defined ID:	Q50231			
Cross Reference Number:				
Topic:	With a SBLOCA, determine if heat removal via S/G is adequate			
RO Importance:	3.0			
SRO Importance:	3.3			
KA Number:	41009EK203			
Comments:	<p>New question : <b>Comprehensive/Analysis</b></p> <p>Reference EOP-5 Basis EOP 5 basis block step IV.L for restoring S/G level</p> <table border="1" data-bbox="761 981 1400 1136"> <tr> <td>000009 Small Break LOCA / 3</td> <td>EK2.03 Knowledge of the interrelations between the small break LOCA and the following: (CFR 41.7 / 45.7) ;S/Gs</td> <td>3.0</td> </tr> </table>	000009 Small Break LOCA / 3	EK2.03 Knowledge of the interrelations between the small break LOCA and the following: (CFR 41.7 / 45.7) ;S/Gs	3.0
000009 Small Break LOCA / 3	EK2.03 Knowledge of the interrelations between the small break LOCA and the following: (CFR 41.7 / 45.7) ;S/Gs	3.0		

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

3

ID: Q50232R

Points: 1.00

Unit 1 has been in a Station Blackout for the last hour. Power has just been restored to 11 4KV Bus via high line 5051. The crew is evaluating restoring CCW and restarting RCPs. 11A RCP temperatures were hotter than 11B, 12A and 12B RCP temperatures by 5°F. Given 11A RCP lower seal temperature reached 284°F and Controlled Bleed-off (CBO) temperature of 260°F, which one of the following actions is acceptable?

- A. Reestablish CCW flow to all RCPs by manually throttling 1-CC-284, CC CNTMT SUPPLY HDR ISOL valve, and NO RCPs should be restarted.
- B. Reestablish CCW flow to all RCPs by manually throttling 1-CC-284, CC CNTMT SUPPLY HDR ISOL valve, and start 11B, 12A, OR 12B RCPs.
- C. Reestablish CCW flow to all RCPs by opening 1-CC-3832-CV, CC CNTMT SUPPLY valve, and NO RCPs can be started.
- D. Reestablish CCW flow to all RCPs by opening 1-CC-3832-CV, CC CNTMT SUPPLY valve, and start 11B, 12A, OR 12B RCPs.

Answer: A

### Answer Explanation:

B. is incorrect, since lower seal temperature reached 284°F, CCW must be throttled on reinitiation.

A. is correct per EOP-7.

C. & D. are incorrect because with CBO temperature exceeding 250°F, the seals must be rebuilt.

NO-1-200 recommends that if CCW can be restored it should, even though you may not be able to run RCPs

Based on AOp7C block step VI. E.4 on page 30

Question 3 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	2.00
System ID:	50554
User-Defined ID:	Q50232R
Cross Reference Number:	LOR-0201-001
Topic:	Evaluate conditions for restarting RCPs per procedure.
RO Importance:	2.6
SRO Importance:	2.6
KA Number:	42015AK208
Comments:	Reference AOP7C Block step VI.E.4 page 30  Modified from bank question 201237S01 : <b>Comprehensive/Analysis</b>



# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

	000015/17 RCP Malfunctions / 4	<b>AK2.08 - Knowledge of the interrelations between the Reactor Coolant Pump Malfunctions (Loss of RC Flow) and the following: CCWS</b>	2.6
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# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

4

ID: Q50250R

Points: 1.00

Unit 1 is operating at 100% power with the following conditions:

- 11 Charging Pump is running.
- 13 Charging pump is tagged out for maintenance
- 12 Charging Pump hand switch in NORMAL.
- Backup Charging Pump Selector Switch is in the 12-13 position.

A loss of offsite power occurs. 1A D/G starts and energizes 11 4KV Bus. 1B D/G trips immediately upon starting. ~ 20 minutes later RCS temperatures are being maintained constant by the ADVs. Which of the following describes the response of the pressurizer ? ( Assume No other operator actions)

- A. Pressurizer level will be slowly rising with charging flow but NO letdown flow.
- B. Pressurizer level will be constant with charging and letdown at minimum
- C. Pressurizer level will be lowering with letdown but NO charging flow.
- D. Pressurizer level will be slowly lowering with NO charging flow OR letdown flow.

Answer: D

### Answer Explanation:

A. Incorrect, Charging pumps will not start and will not operate without operator action under these conditions

B. Incorrect, Charging pumps will not start and will not operate without operator action under these conditions.

C. Incorrect, Letdown would have isolated due to the loss of power effects

D. Correct, with no operator actions no charging pumps will be running and pZR level will be slowly lowering due to ~ 6 GPM seal leakage.

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

Question 4 Info				
Question Type:	Multiple Choice			
Status:	Active			
Always select on test?	No			
Authorized for practice?	No			
Points:	1.00			
Time to Complete:	3			
Difficulty:	2.00			
System ID:	50530			
User-Defined ID:	Q50250R			
Cross Reference Number:				
Topic:	Given a malfunction of the CVCS system, identify the effects on pwr level and determine the actions			
RO Importance:	3.0			
SRO Importance:	3.4			
KA Number:	42022AK103			
Comments:	<p>New Question : <b>Comprehensive/Analysis</b></p> <p>Reference RCS Lesson Plan Alarm Manual for 1C07 F-01 ( Page 6), F-05 (Page014), F-06 (Page16)</p> <table border="1" data-bbox="763 1010 1473 1259"> <tbody> <tr> <td>000022 Loss of Rx Coolant Makeup / 2</td> <td>AK1.03 – Knowledge of the operational implications of the following concepts as they apply to Loss of Reactor Coolant Makeup [(CFR 41.8 / 41.10 / 45.3): Relationship between charging flow and PZR level</td> <td>3.0</td> </tr> </tbody> </table>	000022 Loss of Rx Coolant Makeup / 2	AK1.03 – Knowledge of the operational implications of the following concepts as they apply to Loss of Reactor Coolant Makeup [(CFR 41.8 / 41.10 / 45.3): Relationship between charging flow and PZR level	3.0
000022 Loss of Rx Coolant Makeup / 2	AK1.03 – Knowledge of the operational implications of the following concepts as they apply to Loss of Reactor Coolant Makeup [(CFR 41.8 / 41.10 / 45.3): Relationship between charging flow and PZR level	3.0		

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

5

ID: Q50610

Points: 1.00

Unit-1 in mode 5 on SDC with the RCS capable of being pressurized. The following conditions exist:

- RCS Temperature is 180°F
- RCS Pressure is 180 psia
- 11 & 12 SGFP are secured and tagged out
- Main & Auxiliary Feedwater is tagged out to 11 S/G for maintenance

A loss of both LPSI pumps occurs. Due to a malfunction, no charging pumps are available. Which of the following is the next course of actions for these conditions?

- A. Feed and bleed the RCS using the HPSI pumps and pressurizer PORVs.
- B. Align condensate to 12 S/G and bleed steam from 12 steam generator.
- C. Align a containment spray pump to provide flow through the shutdown cooling heat exchanger.
- D. Feed and bleed the RCS using the CS pumps and pressurizer PORVs.

Answer: B

## Answer Explanation:

In this condition, with a loss of both LPSI pumps the preferred order would be to align a Containment spray pump, followed by steaming using available S/Gs, then followed by once through core cooling. However RCS pressure needs to be reduced to less than 170 PSIA to use the CS pumps. Since without Auxiliary Spray ( No charging pumps) this is not possible, other means must be used.

A. Feed and bleed the RCS using the HPSI pumps and pressurizer PORVs. **is incorrect** since the RCS is capable of being pressurized. This would be the last course of action of the available choices. A candidate might think that the other methods are not available since both S/Gs are not available and main feedwater is not available. A candidate might think that you need both S/Gs available for H/R.

B. Align condensate to 12 S/G and bleed steam from the 12 steam generator. **is correct.** Since you have one S/G available for heat removal, and RCS pressure is too high for Containment spray pumps, and without a charging pump auxiliary spray is not available this is the next course of action.

C. Align a containment spray pump to provide flow through the shutdown cooling heat exchanger. **is incorrect.** Since RCS pressure is greater than 170 PSIA, and auxiliary spray is not available to lower pressure ( No charging pumps), this course of action is not correct for the conditions given. A candidate might not realize that RCS pressure is too high to use the CS pumps.

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

D. Feed and bleed the RCS using the CS pumps and pressurizer PORVs. **is incorrect** since the RCS is capable of being pressurized. This would be the last course of action of the available choices. A candidate might think that the other methods are not available since both S/Gs are not available and main feedwater is not available, and may believe that since a CS pump is the first alternative to a LPSI pump, that the CS pumps should be used first for OTCC

Question 5 Info			
Question Type:	Multiple Choice		
Status:	Active		
Always select on test?	No		
Authorized for practice?	No		
Points:	1.00		
Time to Complete:	4		
Difficulty:	4.00		
System ID:	50610		
User-Defined ID:	Q50610		
Cross Reference Number:	202-3B-S-1		
Topic:	Action for Loss of SDC due to loss of LPSI pumps		
RO Importance:	3,2		
SRO Importance:	3.2		
KA Number:	42025AK202		
Comments:	Basis: SDC References: Modified from 202-3B-S-1 : <b>Comprehensive/Analysis</b>  References AOP-3B Section IV page 22-25, section VI pages 42 - 57		
	000025 Loss of RHR System / 4	AK2.02 – Knowledge of the interrelations between the Loss of Residual Heat Removal System and the following: LPI or Decay Heat Removal RHR pumps	3.2*

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

6

ID: Q15864R

Points: 1.00

Unit 1 is operating at 100% power when the following indications are observed:

CC Head Tank Level is 42 inches and steady  
RCP CCW TEMP HI Alarm  
CCW PP RM LVL HI Alarm  
11/12 CC HX CC TEMP HI Alarm  
13 SW PP Bkr L/U IMPR Alarm

Which of the following is occurring?

- A. A loss of CCW due to a Salt Water Leak
- B. A loss of CCW due to CCW leak
- C. A loss of CCW due to a CCW Pump loss
- D. A loss of CCW due to a SW pump trip

Answer: A

**Answer Explanation:**

A. Correct - Saltwater leak in the CCW PP room CCHX heatup

B. Incorrect, CCW head tank is steady. This distractor is plausible since a person could misconstrue the alarm for CCW pump room level, to indicate that CCW leakage is causing this alarm. They must combine this information with the other information in the stem, such as head tank level, to rule out a leak in the CCW header.

C. Incorrect, Alarms/Info given do not support loss of 11 or 12 CCW PPS. This distractor is plausible if a person misconstrues the meaning of the 13 CCW pump bkr alignment alarm to imply that they have lost a CCW pump. The alarm comes in on an improper bkr lineup, but is not the alarm you would get if a pump tripped, you would get

D. Incorrect, A SW pump trip is not indicated based on parameters shown

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

Question 6 Info				
Question Type:	Multiple Choice			
Status:	Active			
Always select on test?	No			
Authorized for practice?	No			
Points:	1.00			
Time to Complete:	3			
Difficulty:	2.00			
System ID:	50550			
User-Defined ID:	Q15864R			
Cross Reference Number:				
Topic:	Interpret and predict loss of CCW			
RO Importance:	2.9			
SRO Importance:	3.6			
KA Number:	42026AA202			
Comments:	<p>Modified version of 15864 : <b>Comprehensive/Analysis</b></p> <p>References CCW Lesson Plan Slide 20</p> <table border="1" data-bbox="761 946 1466 1136"> <tr> <td>000026 Loss of Component Cooling Water / 8</td> <td>AA2.02 –Ability to determine and interpret the following as they apply to the Loss of Component Cooling Water: (CFR: 43.5 / 45.13): The cause of possible CCW loss</td> <td>2.9</td> </tr> </table>	000026 Loss of Component Cooling Water / 8	AA2.02 –Ability to determine and interpret the following as they apply to the Loss of Component Cooling Water: (CFR: 43.5 / 45.13): The cause of possible CCW loss	2.9
000026 Loss of Component Cooling Water / 8	AA2.02 –Ability to determine and interpret the following as they apply to the Loss of Component Cooling Water: (CFR: 43.5 / 45.13): The cause of possible CCW loss	2.9		

## Question 6 Table-Item Links

### A / O Training Program

License Operator Initial Training (LOIT)

### System Designations

Electrical 480V Motor Control Centers

Electrical 480V Transformers and Buses

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

7

ID: Q50251

Points: 1.00

Given the following conditions:

Unit-1 is at 100% power  
Pressurizer pressure is 2250 PSIA  
PZR backup and proportional heater control is in AUTO  
1-HS-100 (PZR pressure control) is in the "Y" position  
1-HS-100-3 (PZR htr cutoff) is in the "X+Y" position  
1-PT-100Y fails high

Select the expected PROPORTIONAL HEATER & Pressurizer Spray response. Assume no operator action

- A. Proportional heaters will operate at approximately 1/3 higher power level than before the failure, and the red lights will be illuminated. Pressurizer Spray will be at 50% of maximum flow.
- B. Proportional heaters will operate at approximately 1/3 lower power level than before the failure, and the green lights will be illuminated. Pressurizer Spray will be at maximum flow.
- C. Proportional heaters will be at minimum power level, and the red lights will be illuminated. Pressurizer Spray will be at maximum flow.
- D. Proportional heaters will be at minimum power level, and the green lights will be illuminated. Pressurizer Spray will be at 50% of maximum flow.

Answer: C

### Answer Explanation:

C. Proportional heaters will be at minimum power level, and the red lights will be illuminated. Pressurizer Spray will be at maximum value. --correct, heaters will respond as if RCS pressure were high. At +25 psia above the normal setpoint (2250) Minimum Power signal is applied to the heaters.

A. Proportional heaters will operate at approximately 1/3 higher power level than before the failure. Pressurizer Spray will be at 50% of maximum flow. --incorrect, power to the heaters lowers on high pressure.

B. Proportional heaters will operate at approximately 1/3 lower power level than before the failure. Pressurizer Spray will be at maximum flow. --incorrect, pressure difference will be outside the control band, causing minimum power to be sent to the heaters, and Pressurizer Spray to be at maximum.

D. Proportional heaters will be at minimum power level, and the green lights will be illuminated. Pressurizer Spray will be at 50% of maximum flow. --incorrect, green/red lights are function of breaker positions, supply breakers remain shut.

Modified from question used on 7/2002 NRC exam



# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

<b>Question 7 Info</b>				
Question Type:	Multiple Choice			
Status:	Active			
Always select on test?	No			
Authorized for practice?	No			
Points:	1.00			
Time to Complete:	4			
Difficulty:	2.00			
System ID:	50251			
User-Defined ID:	Q50251			
Cross Reference Number:				
Topic:	Predict response of Pzr htrs t& Spray o a PPCS Malfunction			
RO Importance:	4.0			
SRO Importance:	3.9			
KA Number:	42027AA101			
Comments:	<p>Bank question used on 2002 NRC Exam :  <b>Comprehensive/Analysis</b></p> <p>Reference RCS- Instrumentation Lesson LOI-064A2 Slides 69-77, 110 -116</p> <table border="1" data-bbox="756 1010 1458 1198"> <tr> <td>000027 Pressurizer Pressure Control System Malfunction / 3</td> <td>AA1.01 – Ability to operate and / or monitor the following as they apply to the Pressurizer Pressure Control Malfunctions: PZR heaters, sprays, and PORVs</td> <td>4.0</td> </tr> </table>	000027 Pressurizer Pressure Control System Malfunction / 3	AA1.01 – Ability to operate and / or monitor the following as they apply to the Pressurizer Pressure Control Malfunctions: PZR heaters, sprays, and PORVs	4.0
000027 Pressurizer Pressure Control System Malfunction / 3	AA1.01 – Ability to operate and / or monitor the following as they apply to the Pressurizer Pressure Control Malfunctions: PZR heaters, sprays, and PORVs	4.0		

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

8

ID: Q50712

Points: 1.00

A loss of load event occurred from 100% power and the reactor did not trip. Which of the following is correct?

- A. Diverse Scram System (DSS) will trip the Reactor by opening the MG Set Output breakers.
- B. Diverse Scram System (DSS) will trip the Reactor by opening the load contactors from the MG sets.
- C. Diverse Scram System (DSS) will trip the Reactor by energizing the RPS Matrix trip relays
- D. Diverse Scram System (DSS) will trip the Reactor by de-energizing the RPS Matrix Relays.

Answer: B

## Answer Explanation:

DSS Trip from ESFAS will trip the Reactor on 2 out of 4 High Pressurizer Pressures by opening the load contactors from the MG sets. This is an Anti-ATWS trip feature in the event of an RPS failure.

The MG sets are started and stop from the local control panel in the 45' or 27' switchgear room ( either location can control both MG sets). The local panels have controls to close and open the MG set Output breakers as well as the load contactor which sends the output of the MG set to the CEDMs. DSS performs its function by opening the load contactor. The output breakers are manually opened. When DSS actuates it opens the MG set load contactor which removes power from the CEDM and they insert via gravity.

- A. Diverse Scram System (DSS) will trip the Reactor by opening the MG Set Output bkr .-- **Is Incorrect** ,the output breaker is not opened by DSS, only the load contactors.
- B. Diverse Scram System (DSS) will trip the Reactor by opening the load contactors from the MG sets.-- **Is correct**
- C. Diverse Scram System (DSS) will trip the Reactor by energizing the RPS Matrix Relays .-- **Is Incorrect** because DSS does not use the Matrix Relays it uses the MG set load contactor.
- D. Diverse Scram System (DSS) will trip the Reactor by de- energizing the RPS Matrix Relays.-- **Is Incorrect** since DSS does not use the Matrix trip Relays.

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

Question 8 Info				
Question Type:	Multiple Choice			
Status:	Active			
Always select on test?	No			
Authorized for practice?	No			
Points:	1.00			
Time to Complete:	3			
Difficulty:	2.00			
System ID:	50712			
User-Defined ID:	Q50712			
Cross Reference Number:	CRO-59-1-5-55			
Topic:	Which condition will cause the ATWS alarm on SPDS?			
RO Importance:	4.2			
SRO Importance:	4.1			
KA Number:	2431			
Comments:	<p>NEW question: <b>Memory/Fundamentals</b></p> <table border="1" data-bbox="763 885 1463 1012"> <tr> <td>029 ATWS/1</td> <td>2.4.31 Knowledge of annunciator alarms, indications, or response procedures.</td> <td>4.2</td> </tr> </table> <p>References : RPS Lesson Plan Slides 92 and 93</p>	029 ATWS/1	2.4.31 Knowledge of annunciator alarms, indications, or response procedures.	4.2
029 ATWS/1	2.4.31 Knowledge of annunciator alarms, indications, or response procedures.	4.2		

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

9

ID: Q50252

Points: 1.00

When responding to a SGTR which of the following set of parameters should be used to identify the most affected S/G in accordance with the EOP-6 basis document?

- A. Steam Flow-Feed Flow Mismatch, Main Steam Line RMS
- B. S/G Level Trends, S/G blowdown RMS
- C. Steam Flow-Feed Flow Mismatch, S/G blowdown RMS
- D. S/G Level Trends, post trip bypass feed regulating valve position

Answer: A

**Answer Explanation:**

Choice A is correct per EOP-6 Basis

Choice B is incorrect since per EOP-5 basis the blowdown RMS cannot be used since it measures common RMS

Choice C is incorrect since it also uses S/G Blowdown monitor which is common

Choice D is incorrect since post trip the bypass valve goes to 56%

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

Question 9 Info				
Question Type:	Multiple Choice			
Status:	Active			
Always select on test?	No			
Authorized for practice?	No			
Points:	1.00			
Time to Complete:	3			
Difficulty:	3.00			
System ID:	50252			
User-Defined ID:	Q50252			
Cross Reference Number:				
Topic:	Given conditions, parameter values associated with the Steam Flow indicators, determine that a SGTR			
RO Importance:	3.7			
SRO Importance:	3.6			
KA Number:	41038EA113			
Comments:	<p>New Question: <b>Fundamental/Memory</b></p> <p>References : EOP-6 basis for step IV.J on page 36, EOP-6 Lesson Plan -Slide 43 Main Steam and Blowdown LP Slide 86 , LOI-083-1</p> <table border="1" data-bbox="768 1010 1478 1138"> <tr> <td>000038 Steam Gen. Tube Rupture / 3</td> <td><b>EA1.13 –Ability to operate and monitor the following as they apply to a SGTR:</b> Steam flow indicators</td> <td>3.7*</td> </tr> </table> <p>LOIT Learning Objective for ROs and SROs # 2.0</p> <p>Recall the strategy and basis for the major actions performed in EOP-6, SGTR and what actions are required and safety functions are in jeopardy of being lost.</p>	000038 Steam Gen. Tube Rupture / 3	<b>EA1.13 –Ability to operate and monitor the following as they apply to a SGTR:</b> Steam flow indicators	3.7*
000038 Steam Gen. Tube Rupture / 3	<b>EA1.13 –Ability to operate and monitor the following as they apply to a SGTR:</b> Steam flow indicators	3.7*		

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

10

ID: Q50253

Points: 1.00

A manual reactor trip from 100% power was initiated due to an event in progress. Upon entry into the appropriate optimal recovery procedure the following parameters are observed:

11 S/G level is -50 inches and lowering  
12 S/G level is - 30 inches and lowering  
CNTMT pressure is 4.25 psig and rising  
All electrical busses are energized from their normal power supplies.  
Pressurizer level is 160 inches and rising slowly  
Pressurizer pressure is 2250 psia and rising slowly  
Tavg is 545°F and rising slowly  
RCS subcooling is 40°F and lowering slowly

Based on these conditions, which of the following has occurred?

- A. A steam line rupture on 11 S/G has occurred
- B. A steam line rupture on 12 S/G has occurred
- C. A condensate header rupture has occurred
- D. A feed line rupture has occurred

Answer: D

## Answer Explanation:

Lowering levels are caused by loss of feedwater to the S/Gs

A steam header rupture would result in an excessive cooldown and Subcooling would be higher than 40°F and increasing. A condensate header rupture would not result in containment pressure increasing.

A. A steam line rupture on 11 S/G has occurred. **Is incorrect.** A steam line rupture will have some of the same symptoms as a feedline rupture including, lowering S/G levels due to the increased rate of mass removal, and if in containment it will cause an increase in containment pressure. However a steam line rupture will cause a lowering of RCS temperature, Pzr level and an increase in subcooling. Because 11 & 12 S/G have different levels a candidate might choose the one with the lowest or highest level believing that a steam rupture exist on one or the other due to shrink or swell effects.

B. A steam line rupture on 12 S/G has occurred. **Is incorrect.** A steam line rupture will have some of the same symptoms as a feedline rupture including, lowering S/G levels due to the increased rate of mass removal, and if in containment it will cause an increase in containment pressure. However a steam line rupture will cause a lowering of RCS temperature, Pzr level and an increase in subcooling. Because 11 & 12 S/G have different levels a candidate might choose the one with the lowest or highest level believing that a steam rupture exist on one or the other due to shrink or swell effects.

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

C. A condensate header rupture has occurred. **Is Incorrect.** A condensate header will give some of the same symptoms as a feedwater line rupture outside of containment, including a lowering of S/G levels due to reduction of feedwater available to the S/Gs. Also due to the lowering of S/G levels RCS temperature will increase causing Pzr level to increase. The temperature increase will cause subcooling to lower. However, a condensate header rupture will not cause an increase in containment pressure.

D. A feed line rupture has occurred - **Is correct.** A feedwater line rupture will result in a lowering of S/G levels due to reduction of feedwater available to the S/Gs. Also due to the lowering of S/G levels RCS temperature will increase causing Pzr level to increase. The temperature increase will cause subcooling to lower. A FW rupture in cntmt will cause containment pressure to rise

Question 10 Info			
Question Type:	Multiple Choice		
Status:	Active		
Always select on test?	No		
Authorized for practice?	No		
Points:	1.00		
Time to Complete:	2		
Difficulty:	2.00		
System ID:	50253		
User-Defined ID:	Q50253		
Cross Reference Number:			
Topic:	Discriminate between Main Steam Line Break and Feed Break event		
RO Importance:	4.1		
SRO Importance:	4.3		
KA Number:	42054AK101		
Comments:	New Question : <b>Comprehensive/Analysis</b> References EOP-4 basis page 9 & 10 AOP3G Basis page 3		
	000054 (CE/E06) Loss of Main Feedwater / 4	AK1.01 – <b>Knowledge of the operational implications of the following concepts as they apply to Loss of Main Feedwater (MFW):</b> MFW line break depressurizes the S/G(similar to a steam line break)	4.1

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

11

ID: Q50254

Points: 1.00

A station blackout has occurred on Unit 1. After the appropriate Optimal Recovery Procedure has been entered, AFW flow is established to 11 & 12 S/Gs and steaming has commenced via the ADVs. The CRS has directed you to verify natural circulation flow. Which of the following groups of parameters/indications indicates that natural circulation flow has been established?

- A. Tcold 525°F and constant  
Thot 580°F and constant  
CET 585°F and constant
- B. Tcold 535°F and constant  
Thot 585°F and constant  
CET 580°F and constant
- C. Tcold 535°F and lowering  
Thot 580°F and lowering  
CET 585°F and constant
- D. Tcold 535°F and constant  
Thot 580°F and constant  
CET 585°F and constant

Answer: D

### Answer Explanation:

D is correct since per EOP-7 Basis CET should be consistent with Th , if Th is constant CET temperature should be constant

A is incorrect since the delta T between Th and Tc is higher than 50°F

B is incorrect since CET is not consistent with Th it is lower

C is incorrect since CET is not consistent with Th

Question 11 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	4
Difficulty:	3.00
System ID:	50254
User-Defined ID:	Q50254
Cross Reference Number:	
Topic:	Evaluate parameters to determine if adequate natural circulation flow exists per EOPs.
RO Importance:	4.1
SRO Importance:	4.4
KA Number:	41055EK102
Comments:	New Question : <b>Comprehensive/Analysis</b>  References : EOP-7 Step IV.K Page 26 EOP-7 Basis for IV.K. page 30 and 31



# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

	000055 Station Blackout / 6	<b>EK1.02 – Knowledge of the operational implications of the following concepts as they apply to the Station Blackout : Natural circulation cooling</b>	4.1
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# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

12

ID: Q50255

Points: 1.00

Upon entry into EOP-2 for LOOP, #23 AFW pump is started (due to problems with the steam driven AFW pumps) to establish feedwater flow to #21 and #22 S/Gs with the following flow values:

- #21 S/G 1-FIC-4525A indicates 290 GPM
- #22 S/G 1-FIC-4535A indicates 300 GPM

Based on these flow values which statement below is the correct operator response?

- A. Maintain flow values ensuring that RCS cooldown rate is  $< 100^{\circ}\text{F}$  per hour.
- B. Reduce AFW flow as the common suction flow limit is exceeded.
- C. Reduce AFW flow to 300 GPM to protect the 2B DG from overloading.
- D. Maintain flow values ensuring as CST level lowers pump cavitation does not occur.

Answer: C

### Answer Explanation:

A & B are incorrect because EOP-2 basis states to limit flow to 300 gpm when 23 AFW pp powered from DG to protect DG from overloading and 575 gpm all other times  
D is incorrect because suction line limit of 1200 gpm is not being violated  
C is correct because flow limited to 300 gpm when on DG per EOP 2 Basis Step IV G.2

Question 12 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	2
Difficulty:	2.00
System ID:	50255
User-Defined ID:	Q50255
Cross Reference Number:	
Topic:	Identify the basis for actions in EOP associated with loss of offsite power.
RO Importance:	4.4
SRO Importance:	4.7
KA Number:	42056AK302
Comments:	New Question : <b>Comprehensive/Analysis</b>  References EOP-2 pages 13 -15- Step IV G.2 EOP-2 page 24- Basis for IV.G.2

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

	000056 Loss of Off-site Power / 6	AK3.02- <b>Knowledge of the reasons for the following responses as they apply to the Loss of Offsite Power:</b> Actions contained in EOP for loss of offsite power	4.4
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# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

13

ID: Q50256

Points: 1.00

Unit one is operating at 100% power when the following indications are noted:

Pressurizer pressure is 2250 PSIA  
Pressurizer level is rising  
All B/u Htrs are ON  
AFAS Loss of Power Alarm  
Actuation SYS loss of Power alarm  
RAS Actuation Sys tripped alarm  
SIAS Actuation Sys tripped alarm  
CSAS Actuation Sys tripped alarm  
11, 12, & 13 Charging pumps are operating  
Letdown is at minimum

Based on these indications which of the following is correct:

- A. 1Y01 has been lost
- B. 1Y02 has been lost
- C. 1Y03 has been lost
- D. 1Y04 has been lost

*Deleted*

Answer: A

**Answer Explanation:**

A is correct. Based on the indications listed in AOP -7J. All others are not consistent with the indications of AOP 7J

Question 13 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	2
Difficulty:	1.00
System ID:	50256
User-Defined ID:	Q50256
Cross Reference Number:	
Topic:	Determine by indications which vital AC instr bus is lost.
RO Importance:	3.7
SRO Importance:	4.0
KA Number:	42057AA204
Comments:	New Question: <b>Comprehensive/Analysis</b>  Reference AOP 7J Section V actions for a loss of 1Y01- Pages 12 -15

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

	000057 Loss of Vital AC Inst. Bus / 6	AA2.04 – Ability to determine and interpret the following as they apply to the Loss of Vital AC <b>Instrument Bus:</b> ESF system panel alarm annunciators and channel status indicators	3.7
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# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

14

ID: Q50474

Points: 1.00

Unit 1 is operating at 100% power with the following conditions:

- Outside Air Temperature = 100°F
- Bay Temperature = 80°F

The following are noted

- TURB BLDG SRW HDR PRESS LO - Alarm
- 11 SRW HDR PRESS LO- Alarm
- 12 SRW HDR PRESS LO- Alarm
- 11 SRW HEAD TK LVL- Alarm
- 12 SRW HEAD TK LVL- Alarm
- STEAM LINE DRAIN PANEL - Alarm

(a) Which of the following caused these indications? (b) What actions are required?

- A. (a) A leak/rupture of the Service water header in the Turbine Building, (b) Shut the Turbine Building isolation valves, and ensure SRW pressure returns to normal.
- B. (a) A leak/rupture of the Service water header in the Turbine Building, (b) Shut the Turbine building isolation valves, trip the reactor and implement EOP-0,
- C. (a) A leak/rupture of 11 or 12 Service water header in the Auxiliary building (b) Shut the Turbine Building isolation valves and ensure that one header pressure restores to normal.
- D. (a) A leak/rupture of 11 or 12 Service water header in the Auxiliary building,(b) Shut the Turbine Building isolation valves,trip the reactor implement EOP-0.

Answer: B

## Answer Explanation:

B. A rupture of the Service water system in the Turbine Building as evidenced by HDR and tank alarms, location is turbine building as indicated by 1T22 alarms, Trip the reactor and turbine, shut the turbine building isolation valves is the correct answer per AOP-7B basis.

A. Incorrect because it does not say to trip the reactor as is required by AOP7B

C. Incorrect because of no reactor trip and steam line drain panel alarm which means the leak is in the turbine building

D. Incorrect because leak is in the turbine building not auxiliary building because of 1T22 alarms

Plausibility analysis

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

C. A candidate could choose distractor C or D since a leak or rupture of the Service Water header in the Auxiliary building would give a majority of the same symptoms as a leak/rupture in the turbine building, including All SRW HDR Press lo alarms. This is because the SRW system in the auxiliary building and the turbine building are normally cross connected on the supply and return side. They are isolated from each other either on SIAS or manually by the operator. This means a rupture in either Turbine building or Auxiliary building header will result in lowering pressure and head tank levels. In order to eliminate the Auxiliary building header as a source, the candidate must recognize that the steam drain panel alarm will come in on high level in any of the turbine building sumps. A high level in the turbine building sump means that the leak is in the turbine building. If a candidate did not recall that that this alarm is associated with a turbine building sump being high, then he will not be able to eliminate distractor C or D

Question 14 Info					
Question Type:	Multiple Choice				
Status:	Active				
Always select on test?	No				
Authorized for practice?	No				
Points:	1.00				
Time to Complete:	3				
Difficulty:	4.00				
System ID:	50474				
User-Defined ID:	Q50474				
Cross Reference Number:					
Topic:	Identify via indications and alarms the cause of loss of Service Water				
RO Importance:	2.9				
SRO Importance:	3.6				
KA Number:	42062AA202				
Comments:	<p>New Question : <b>Comprehensive/Analysis</b></p> <p>References  AOP 7B basis page 4  Alarm manual for 1C-13 pages 11, 16, 34 and 42.  Alarm manual for 1C 03 page 93  Alarm manual for 1T22, page 8 and 9</p> <table border="1"> <tr> <td>000062 Loss of Nuclear Svc Water / 4</td> <td>AA2.02- Ability to determine and interpret the following as they apply to the Loss of Nuclear Service Water: The cause of possible SWS loss</td> <td>2.9</td> </tr> </table>		000062 Loss of Nuclear Svc Water / 4	AA2.02- Ability to determine and interpret the following as they apply to the Loss of Nuclear Service Water: The cause of possible SWS loss	2.9
000062 Loss of Nuclear Svc Water / 4	AA2.02- Ability to determine and interpret the following as they apply to the Loss of Nuclear Service Water: The cause of possible SWS loss	2.9			

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

15

ID: Q50258

Points: 1.00

AOP 7D, "Loss of Instrument Air", requires a reactor trip if IA pressure lowers to 50 PSIG in MODE 1. Which of the following is the reason for this?

- A. Protect the Turbine/Generator from damage due to the loss of Service Water cooling
- B. Protect the RCS from overfeeding effects due to S/G level control concerns
- C. Protect the RCPs from damage due to CCW Containment CVs failing shut.
- D. Protect the SGFP from damage due to miniflow valves failing shut

Answer: B

### Answer Explanation:

Per the AOP 7D basis Step VA, B is the correct answer

The FRVs fail as is at 40 psig. This would prevent S/G level control The 50 PSIG trip value was chosen to enable FRV's and TBV's response post trip. The objective is to allow the FRVs to ramp shut, removing the immediate need to trip the SGFPs due to overfeeding effects on the RCS.

A is incorrect since the SRW valves do not fail shut until a complete loss of IA occurs. Since at 50 PSIG we have not completely loss IA the SRW turbine building isolation valves will be open.

C is incorrect since the Containment CCW valves are 50% open at 40 PSIG which supplies sufficient flow. Per AOP7D these valves do not go full shut until you get to 13 psig IA pressure. The steps for addressing the effects of loss of CCW are in the section for Modes 3, 4, 5, 6.

D is not correct since the S/G miniflow valves fail open on loss of air.

Question 15 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	4
Difficulty:	2.00
System ID:	50258
User-Defined ID:	Q50258
Cross Reference Number:	
Topic:	Identify basis for actions for loss of instrument Air system
RO Importance:	3.7
SRO Importance:	3.9
KA Number:	42065AK308
Comments:	New Question : <b>Fundamental/Memory</b>  References : AOP7D Basis page 7



# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

	000065 Loss of Instrument Air / 8	AK3.08 – <b>Knowledge of the reasons for the following responses as they apply to the Loss of Instrument Air:</b> Actions contained in EOP for loss of instrument air	3. 7
This question is a basis question for AOP actions. As such it is reasonable to expect RO candidates to know the basis for the trip.			

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

16

ID: Q50690

Points: 1.00

1A DG is paralleled on 11.4 KV bus for routine surveillance testing when a major grid disturbance occurs and the following alarms annunciate:

- 1A POTVOLT FREQ LO
- GENERATOR LOW FREQUENCY

Which of the following system responses or operator actions is correct ?

- A. 1A Diesel Generator Trips on underfrequency
- B. Reduce 1A generator load until the alarm clears.
- C. 1A Diesel output breaker trips on underfrequency.
- D. Raise 1A Diesel Generator speed to clear the alarm.

Answer: C

## Answer Explanation:

Candidate should recognize from the stem that with the D/G running paralleled to the bus that it is not in reset mode.

- A. 1A Diesel Generator Trips on underfrequency -- **Is Incorrect**, because the D/G output breaker trips but 1A D/G does not trip on low frequency.
- B. Reduce 1A generator load until the alarm clears.-- **Is Incorrect** since the D/G output breaker will trip. If the D/G was in the reset mode (Emergency) then this would be correct.
- C. 1A Diesel output breaker trips on underfrequency.-- **Is Correct** the D/G breaker will trip
- D. Raise 1A Diesel Generator speed to clear the alarm.-- **Is Incorrect**. since the D/G output breaker will trip.

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

Question 16 Info				
Question Type:	Multiple Choice			
Status:	Active			
Always select on test?	No			
Authorized for practice?	No			
Points:	1.00			
Time to Complete:	3			
Difficulty:	2.00			
System ID:	50690			
User-Defined ID:	Q50690			
Cross Reference Number:	FAIRBANKS			
Topic:	Actions required for grid disturbance per AOP 7M			
RO Importance:	4.1			
SRO Importance:	4.3			
KA Number:	2445			
Comments:	<p>New Question : <b>Comprehensive/Analysis</b></p> <p>Ref. AOP 7M, Alarm manual for 1C18A and 1C62/2C62/2C61</p> <table border="1" data-bbox="764 981 1473 1076"> <tr> <td>000077 Generator Voltage and Electric Grid Disturbances / 6</td> <td>2.4.45 Ability to prioritize and interpret the significance of each annunciator or alarm.</td> <td>4.1</td> </tr> </table>	000077 Generator Voltage and Electric Grid Disturbances / 6	2.4.45 Ability to prioritize and interpret the significance of each annunciator or alarm.	4.1
000077 Generator Voltage and Electric Grid Disturbances / 6	2.4.45 Ability to prioritize and interpret the significance of each annunciator or alarm.	4.1		

## Question 16 Table-Item Links

### A / O Training Program

Licensed Operator Requal Training (LOR)

### System Designations

Abnormal Operating Procedures (AOPs)

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

17

ID: Q20628

Points: 1.00

A loss of load transient resulted in a plant trip with PORVs lifting. What would indicate that the quench tank rupture disk has ruptured?

- A. "CNTMT NORMAL SUMP LVL HI" alarm actuates
- B. "QUENCH TK TEMP LVL PRESS" alarm clears
- C. "QUENCH TK LVL PRESS" alarm actuates
- D. Indicated rate at which RCS pressure lowers will decrease.

Answer: A

### Answer Explanation:

A."CNTMT NORMAL SUMP LVL HI" alarm actuates--correct. The sump alarm along with quench tank pressure lowering are indications that the rupture disk has ruptured.

B. "QUENCH TK TEMP LVL PRESS" alarm clears--incorrect, level and temperature would remain high if the rupture disk blows.

C."QUENCH TK LVL PRESS" alarm actuates- Is Incorrect, since the alarm will not re-actuate due to a possible high level situation in the Quench Tank.

D. Rate at which RCS pressure lowers - decreases.----incorrect, the small range of back pressure associated with the intact or open quench tank would have little effect of PORV relief capacity.

Question 17 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	5
Difficulty:	2.00
System ID:	50260
User-Defined ID:	Q20628
Cross Reference Number:	
Topic:	Identify indications of a ruptured quench tank rupture disk.
RO Importance:	3.7
SRO Importance:	3.7
KA Number:	44E02EA11
Comments:	Bank Question Used 7/2002 NRC exam : <b>Comprehensive/Analysis</b>  References: Alarm Response Manual for 1C10 page 49 and 50 Alarm response manual for 1C06 page48 -50  CFR 55.41.3, 55.41.7

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

	CE/E02 Reactor Trip-Stabilization – Recovery/1	EAI.1 – Ability to operate and / or monitor the following as they apply to the (Reactor Trip Recovery) Components, and functions of control and safety systems, including instrumentation, signals, interlocks, failure modes, and automatic and manual features	3.7
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## Question 17 Table-Item Links

### System Designations

Reactor Coolant

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

18

ID: Q50711

Points: 1.00

Unit 1 is operating at 90% power preparing for Main Turbine Valve testing when the following indications are observed:

- Tavg/Tref alarm
- Hi POWER TRIP RESET DEMAND alarm
- 11 S/G Pressure is 810 PSIA and lowering
- 12 S/G Pressure is 805 PSIA and lowering
- Tcold is 515° F and lowering
- Generator MegaWatts are lowering

Which of the following set of actions is correct?

- A. Lower turbine load to restore Tcold to program and implement AOP 7K, Overcooling Event
- B. Insert CEAs OR Borate the RCS to lower power and implement AOP 7K, Overcooling Event
- C. Adjust the setpoint on TBV controller to maintain S/G pressure and Tcold and implement AOP 7K
- D. Implement AOP-7K, Overcooling Event, trip the Reactor and implement EOP-0

Answer: D

## Answer Explanation:

Lower turbine load to restore Tcold to program and implement AOP 7K, Overcooling Event - **Is incorrect**, Tcold has lowered to the trip setpoint of 515° per AOP7K the reactor should be tripped. These actions would be correct if Tcold were not at trip criteria for AOP- 7K.

Insert CEAs OR Borate the RCS and implement AOP 7K, Overcooling Event.-- **Is incorrect**, Tcold has lowered to the trip setpoint of 515° per AOP-7K the reactor should be tripped. These actions would be correct if Tcold were not at trip criteria for AOP-7K.

Adjust the setpoint on TBV controller to maintain S/G pressure and Tcold and implement AOP 7K. -- **Is incorrect**, these actions are associated with a loss of load event in which Tcold is lowering and are actions per AOP-7F. AOP-7F shares some symptoms with AOP-7K such as lowering megawatts, Tavg/Tref alarm and abnormal S/G pressure. However the lowering Tcold should indicate this is an excess stream demand and not a loss of load.

Implement AOP-7K, Overcooling event, trip the Reactor and implement EOP-0.-- **Is correct**, from the symptoms given with Tavg/Tref alarm and the High Power demand reset alarm, an excess steam demand is causing overcooling of the RCS, increasing reactor power, and since Tcold has reached the trip criteria, a reactor trip should be initiated.

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

Question 18 Info				
Question Type:	Multiple Choice			
Status:	Active			
Always select on test?	No			
Authorized for practice?	No			
Points:	1.00			
Time to Complete:	4			
Difficulty:	3.00			
System ID:	50711			
User-Defined ID:	Q50711			
Cross Reference Number:				
Topic:	Evaluate alarms and conditions for AOP-7K entry criteria			
RO Importance:	4.0			
SRO Importance:	4.3			
KA Number:	244			
Comments:	<p>New Question: <b>Comprehensive/Analysis</b></p> <p>References: AOP 7K Entry condition and step IV B actions</p> <table border="1"> <tr> <td><b>CE/E05 - Steam Line Rupture - Excess Heat Transfer</b></td> <td>2.4.4 – Ability to recognize abnormal indications for system operating parameters that are entry-level conditions for emergency and abnormal operation procedures</td> <td>4.5</td> </tr> </table>	<b>CE/E05 - Steam Line Rupture - Excess Heat Transfer</b>	2.4.4 – Ability to recognize abnormal indications for system operating parameters that are entry-level conditions for emergency and abnormal operation procedures	4.5
<b>CE/E05 - Steam Line Rupture - Excess Heat Transfer</b>	2.4.4 – Ability to recognize abnormal indications for system operating parameters that are entry-level conditions for emergency and abnormal operation procedures	4.5		

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

19

ID: Q50262

Points: 1.00

Due to continuous CEA withdrawal event, a reactor trip has occurred on Unit-1. Immediately after the reactor trip occurs, MCC 104R feeder breaker trips. While implementing EOP-0 the following indications are noted:

- 2 stuck CEAs.
- 11 Boric acid pump trips when started
- Main Turbine and Generator are tripped.
- Pressurizer level indication is 40 inches and slowly rising
- RCS subcooling is 0 °F.
- RCS pressure is 1600 psia and dropping.
- S/G levels are both -40" and stable.
- S/G pressures are both 880 psia.
- Containment press. is 2.0 psig and rising.
- Containment temp is 215 °F and rising.
- All electrical buses are energized.

So far, no actions (other than the actions for reactivity control) have been taken. Which one of the following groups of safety functions should be reported as "cannot be met"?

- A. Reactivity Control and RCS Pressure/Inventory Control.
- B. RCS Pressure/Inventory Control and Containment Environment.
- C. Core/RCS Heat Removal and RCS Pressure/Inventory Control.
- D. Containment Environment and Reactivity Control.

Answer: B

### Answer Explanation:

Candidate needs to recognize that even with both boric acid pumps not operating ( Loss of MCC 104R loses 12 boric acid pump) there is boric acid flow available via gravity feed valves

A is incorrect, Boration is in progress means Reactivity is complete.

B is correct, PRZ level is low, RCS pressure is decreasing and SC is unsat, CNTMT temp. and pressure exceeding limits and increasing.

C is incorrect, HR is complete.

D is incorrect, Boration is in progress means Reactivity is complete.



# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

Question 19 Info				
Question Type:	Multiple Choice			
Status:	Active			
Always select on test?	No			
Authorized for practice?	No			
Points:	1.00			
Time to Complete:	5			
Difficulty:	2.00			
System ID:	50262			
User-Defined ID:	Q50262			
Cross Reference Number:	201-0-8-S-02			
Topic:	Determine Safety Function Reports			
RO Importance:	3.5			
SRO Importance:	3.6			
KA Number:	2117			
Comments:	<p>Modified from Q25093 : <b>Comprehensive/Analysis</b></p> <p>References EOP-0 pages 6 -17 AOP 7I page 148 and 149</p> <table border="1" data-bbox="786 965 1495 1030"> <tr> <td>000001 Continuous Rod Withdrawal / 1</td> <td>2.4.14 Knowledge of general guidelines for EOP usage.</td> <td>3.8</td> </tr> </table>	000001 Continuous Rod Withdrawal / 1	2.4.14 Knowledge of general guidelines for EOP usage.	3.8
000001 Continuous Rod Withdrawal / 1	2.4.14 Knowledge of general guidelines for EOP usage.	3.8		

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

20

ID: Q50264

Points: 1.00

Given the following initial conditions:

- Unit 2 is at 100% power.
- All CEAs are fully withdrawn.
- CEDS Control System is in OFF
- Turbine Control is in OPER AUTO
- 21& 22 Digital Feedwater Control Systems (DFWCS) are in AUTO

The following events occur:

- ONE Reg Group 2 CEA drops to the bottom of the core.
- The reactor does NOT trip.
- TM/LP Pre-Trip is received on 1 channel
- The crew enters AOP1B, CEA Malfunction.

Which ONE of the following describes a correct action for the conditions listed above in accordance with AOP 1B?

- A. Decrease Turbine load by momentarily depressing the "DOWN" Button to restore Tcold within 2°F of program value.
- B. Decrease Turbine load by depressing the Turbine Manual Button, then depress the "DOWN" button to restore Tcold within 2°F of program value.
- C. Decrease Turbine load by depressing the Turbine Manual Button, then depress the "DOWN" button to restore Tcold within 5°F of program value.
- D. Decrease Turbine load by momentarily depressing the Reference Signal Decrease Button, then depress the "GO" button to restore Tcold within 5°F of program value.

Answer: B

## Answer Explanation:

A. Decrease Turbine load by momentarily depressing the "DOWN" Button to restore Tcold within 2°F of program value. This is not correct since the turbine is in OPER AUTO mode, pressing the Down button will have NO effect.

B. Decrease Turbine load by depressing the Turbine Manual Button, then depress the "DOWN" button to restore Tcold within 2°F of program value. This is correct since placing the unit in manual and using the down button is acceptable and by procedure 2°F of program is the correct Tcold value

C. Decrease Turbine load by depressing the Turbine Manual Button, then depress the "DOWN" button to restore Tcold within 5°F of program value.. This is incorrect since Tcold should be brought within 2°F of program value.

D. Decrease Turbine load by momentarily depressing the Reference Signal Decrease Button, then depress the "GO" button to restore Tcold within 5°F of program value. This is incorrect since Tcold should be brought within 2°F of program value.

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

Question 20 Info					
Question Type:	Multiple Choice				
Status:	Active				
Always select on test?	No				
Authorized for practice?	No				
Points:	1.00				
Time to Complete:	4				
Difficulty:	2.00				
System ID:	50264				
User-Defined ID:	Q50264				
Cross Reference Number:					
Topic:	Given a drop rod event determine if turbine actions correct				
RO Importance:	4.1				
SRO Importance:	4.1				
KA Number:	42003AA105				
Comments:	<p>New Question : <b>Comprehensive/Analysis</b></p> <p>Reference OI-43A page 50 -52                      AOP 1B page 7 section IV. A.2,                      OP-3 page 35</p> <table border="1" data-bbox="795 1011 1501 1168"> <tr> <td>000003 Dropped Control Rod / 1</td> <td>AA1.05 –Ability to operate and / or monitor the following as they apply to the Dropped Control Rod: Reactor power – turbine power</td> <td>4. 1</td> </tr> </table>		000003 Dropped Control Rod / 1	AA1.05 –Ability to operate and / or monitor the following as they apply to the Dropped Control Rod: Reactor power – turbine power	4. 1
000003 Dropped Control Rod / 1	AA1.05 –Ability to operate and / or monitor the following as they apply to the Dropped Control Rod: Reactor power – turbine power	4. 1			

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

21

ID: Q50265

Points: 1.00

Given the following:

Unit 1 is operating at 100% power.

A group 5 CEA (#34) drops to bottom of the core. The appropriate AOP was entered and stabilizing actions are completed. It has been determined that the CEA # 34 is inoperable. Power has been reduced to 69% power.

Which ONE of the following describes the correct actions and reasons based on the conditions above?

- A. ASI is monitored using Excore NIs which limits are more conservative than the Incore detectors
- B. ASI is monitored using Excore NIs because the DAS must be declared inoperable under these conditions
- C. ASI is monitored using Incore NIs because the Excore detectors are not reliable under these conditions
- D. ASI is monitored using Incore NIs which limits are more conservative than the excore detectors

Answer: A

## Answer Explanation:

Per AOP 1B Basis for step VI.C1. the Better Axial Shaping Selection System (BASS) is declared inoperable when any CEA is mispositioned by more than 15 inches from its respective group. With BASS operable, ASI monitoring is performed by BASS using the incore detectors which are able to provide a more accurate picture of the core power distribution. When we must use the excore detectors to monitor ASI, because of their conservatism, if we were close to the ASI limit prior to the event, a power reduction may be necessary to stay within the limits of the excore detectors.

With BASS inoperable the AOP directs ASI monitoring using Excore and it states that these limits are more conservative than those associated with the incores which are normally used for ASI monitoring

A. ASI is monitored using Excore NIs which limits are more conservative than the Incore detectors -- is correct per AOP 1B basis, the limits are more conservative since the Excore detectors monitor a limited area of the core.

B. ASI is monitored using Excore NIs because the DAS must be declared inoperable under these conditions-- Is incorrect per AOP 1B basis. DAS is not declared inoperable under these conditions. No alarms or indications that ( Data Acquisition System). DAS should be declared inoperable were provided. A candidate might mistakenly assume that DAS should be declared inoperable instead of BASS.

C. ASI is monitored using Incore NIs because the Excore detectors are not reliable under these conditions-- Is incorrect. Since BASS must be declared inoperable under the given conditions, The incore detectors are not used to monitor ASI. Under these conditions the Incore detectors are less reliable than the Excores.

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

D. ASI is monitored using Incore NIs which limits are more conservative than the excore detectors-- Is incorrect. ASI is monitored using the Excore detectors since with a CEA inserted more than 15" from its group position, BASS is declared inoperable and the excore detectors are used, and the Excore detectors are more conservative than the incores

Question 21 Info				
Question Type:	Multiple Choice			
Status:	Active			
Always select on test?	No			
Authorized for practice?	No			
Points:	1.00			
Time to Complete:	2			
Difficulty:	3.00			
System ID:	50265			
User-Defined ID:	Q50265			
Cross Reference Number:				
Topic:	Evaluate conditions when a CEA is inoperable and BASS is inoperable			
RO Importance:	3.9			
SRO Importance:	4.2			
KA Number:	42005AK306			
Comments:	<p>New Question : <b>Comprehensive/Analysis</b></p> <p>AOP-1B Basis for IV. C page 14            1C06 alarm manual page 80-83            Loss of Plant Computer Lesson Plan LOI-202-7HR13 slide 28</p> <table border="1" data-bbox="794 1267 1501 1455"> <tr> <td>000005 Inoperable/Stuck Control Rod / 1</td> <td>AK3.06 – <b>Knowledge of the reasons for the following responses as they apply to the Inoperable / Stuck Control Rod:</b> Actions contained in EOP for inoperable/stuck control rod</td> <td>3.9</td> </tr> </table>	000005 Inoperable/Stuck Control Rod / 1	AK3.06 – <b>Knowledge of the reasons for the following responses as they apply to the Inoperable / Stuck Control Rod:</b> Actions contained in EOP for inoperable/stuck control rod	3.9
000005 Inoperable/Stuck Control Rod / 1	AK3.06 – <b>Knowledge of the reasons for the following responses as they apply to the Inoperable / Stuck Control Rod:</b> Actions contained in EOP for inoperable/stuck control rod	3.9		

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

22

ID: Q50266R

Points: 1.00

Unit 1 is at  $10^{-6}$  % power conducting a S/U after a shutdown to repair a steam leak. Which of the following correctly describes the response of Wide Range Channel A outputs on 1C05 if its high voltage power supply degrades slightly (~ 10%) over 5 minutes?

- A. Source Range Counts per second (CPS) ONLY will decrease in proportion to the decrease in voltage
- B. Source Range Counts per second (CPS) And Wide Range % power will remain the same.
- C. Wide Range % power ONLY will decrease in proportion to the decrease in voltage.
- D. Source Range Counts per second (CPS) And Wide Range % power will decrease in proportion to the decrease in voltage.

Answer: B

## Answer Explanation:

The Wide range (WR) Logarithmic nuclear instruments consist of four redundant channels that provide reactor power level indication from the source range (CPS) to full power (% power). The wide range Log channels use fission chambers that operate in the ionization chamber region of the gas filled detector curve. This provides a constant output over varying voltages. In this region there is no appreciable increase in the number of ion pairs collected as voltage is increased. The operating range of the Wide Range detectors is from .1 CPS to 200 % power. The displays on 1C05 indicate Source range counts per second (CPS) on the left side of the indicator and % power on the right side of the indicator. Both the CPS and % power outputs are driven from the same circuitry. The candidate must recall the region of the gas filled detector curve that the Wide Range detectors operate in, and recall that in this region the ion pairs collected is not a function of applied voltage. The candidate must also recall that the Wide range detectors produces two output indicators (CPS & % Power) and that both of these are driven by the same detector output, even though the circuitry operates under two different principles. The effect of voltage change is the same for both outputs.

A. Source Range Counts per second (CPS) ONLY will decrease in proportion to the decrease in voltage -- is incorrect since these detectors operate (Both CPS and % power mode) in the ionization chamber region where small changes in voltage will have little effect on the detector out.

B. Source Range Counts per second (CPS) And Wide Range % power will remain the same.-- is correct since the detectors operate in the ionization region of the gas filled detector curve both CPS and % power indication will not be affected by small changes in high voltage.

C. Wide Range % power ONLY will decrease in proportion to the decrease in voltage.-- Is incorrect since the detectors operate in the ionization region of the gas filled detector curve both CPS and % power indication will not be affected by small changes in high voltage.

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

D. Source Range Counts per second (CPS) And Wide Range % power will decrease in proportion to the decrease in voltage. -- is incorrect since the detectors operate in the ionization region of the gas filled detector curve both CPS and % power indication will not be affected by small changes in high voltage.

Question 22 Info				
Question Type:	Multiple Choice			
Status:	Active			
Always select on test?	No			
Authorized for practice?	No			
Points:	1.00			
Time to Complete:	4			
Difficulty:	3.00			
System ID:	50612			
User-Defined ID:	Q50266R			
Cross Reference Number:				
Topic:	Evaluate effects of voltage change on Source Range			
RO Importance:	2.5			
SRO Importance:	3.1			
KA Number:	42032AK101			
Comments:	<p>New Questions : <b>Fundamental/Memory</b></p> <p>Reference Excore NI Lesson Plan LOI-78A-1-2 slides 24-30 also alarm manual 1C05- page 36</p> <table border="1"> <tr> <td>000032 Loss of Source Range NI / 7</td> <td>AKI.01 – Knowledge of the operational implications of the following concepts as they apply to Loss of Source Range Nuclear Instrumentation: Effects of voltage changes on performance</td> <td>2.5</td> </tr> </table>	000032 Loss of Source Range NI / 7	AKI.01 – Knowledge of the operational implications of the following concepts as they apply to Loss of Source Range Nuclear Instrumentation: Effects of voltage changes on performance	2.5
000032 Loss of Source Range NI / 7	AKI.01 – Knowledge of the operational implications of the following concepts as they apply to Loss of Source Range Nuclear Instrumentation: Effects of voltage changes on performance	2.5		

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

23

ID: Q50713

Points: 1.00

Which of the following events would require that AOP-6D, Fuel Handling Incident be entered?

- A. A piece of wire from the refueling machine drops into the Refueling Pool.
- B. A new fuel assembly is dropped during insertion in the Spent Fuel Pool.
- C. Dropping the dry transfer Cask in the Auxiliary Building on its way to the Spent Fuel Pool.
- D. A new fuel assembly is dropped in the New Fuel Storage Area

Answer: B

### Answer Explanation:

- A. A piece of wire from the refueling machine drops into the Refueling Pool.-- **Is not correct**, per AOP6D basis an item such as a piece of wire falls the AOP is not entered, the wire is retrieved but the AOP nor the ERPIP are entered for this incident.
- B. A new fuel assembly is dropped during insertion in the Spent Fuel Pool --Is correct.since the dropped fuel assembly has the potential to damage irradiated fuel in the Spent Fuel pool.
- C. Dropping the dry transfer Cask in the Auxiliary Building on its way to the Spent Fuel Pool.-- Is Incorrect, Since the dry Transfer Cask would not have a fuel assembly in it at this time, per the AOP 6D basis , although it is heavy , since it does not have a fuel assembly in it it is not classified as a Fuel Handling incident, the response will be per the AOP of any system that is damaged.
- D. A new fuel assembly is dropped in the New Fuel Storage Area-- Is Incorrect. Per AOP6D, if a new fuel assembly is damaged in the New Fuel Storage area, and only Alpha being a concern, a Fuel Handling Incident has not occurred.

Question 23 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	4
Difficulty:	2.00
System ID:	50713
User-Defined ID:	Q50713
Cross Reference Number:	
Topic:	Determine if AOp 6D should be entered
RO Importance:	3.5
SRO Importance:	3.6
KA Number:	GEN 2.1.21
Comments:	New Question : <b>Memory/Fundamentals</b>  Reference Per AOP 6D and AOP6D basis page 5



# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

	036 Fuel Handling Accident	2.4.4 Ability to recognize abnormal indications for system operating parameters that are entry-level conditions for emergency and abnormal operating procedures.	4.5
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## **Question 23 Table-Item Links**

A / O Training Program

Licensed Operator Requal Training (LOR)

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

24

ID: Q50268

Points: 1.00

Unit 1 was operating at 100% power when a tube leak in 11 Steam Generator occurred. The appropriate AOP was entered, the reactor was manually tripped and the appropriate EOP has been entered. At 100% Power the following indications were noted:

11 S/G Pressure 860 PSIA  
12 S/G Pressure 860 PSIA  
Calculated leakage 60 GPM

11 S/G has been isolated and the RCS cooled down to 500°F. Due to problems with the TBVs the temperature is holding at 500° F.

Per the applicable optimal recovery procedure the pressure differential between RCS and the S/G should be minimized. Approximately what pressure does the RCS need to be depressurized to reduce the leak rate to 25 GPM?

- A. 1261 PSIA
- B. 1252 PSIA
- C. 921 PSIA
- D. 901 PSIA

Answer: C

### Answer Explanation:

$$\frac{m_1}{m_2} = \frac{\sqrt{\text{Diff Press}_1}}{\sqrt{\text{Diff Press}_2}}$$

m1 = 60 GPM, m2 = 25 GPM

Diff Press1 = 2250 PSI - 860 psi

Diff Press 2 = desired RCS pressure - Sat press for 500°F

A. 1261 is incorrect. This is answer you get if you do not take the square root of the pressure differential

B. 1252 is incorrect. This is answer you get if you do not use square roots and use gauge instead of absolute pressure for S/G pressure ( 875 instead of 860)

C. 921 is correct

D. 901 is what you get if you take the square roots of the flow rates and don't add the SG pressure to DP calculation and subtract 15 for absolute pressure.

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

Question 24 Info				
Question Type:	Multiple Choice			
Status:	Active			
Always select on test?	No			
Authorized for practice?	No			
Points:	1.00			
Time to Complete:	3			
Difficulty:	4.00			
System ID:	50268			
User-Defined ID:	Q50268			
Cross Reference Number:				
Topic:	What pressure to depressurize RCs for SGTR			
RO Importance:	3.5			
SRO Importance:	3.9			
KA Number:	42037AK102			
Comments:	<p>New Question : <b>Fundamental/Memory</b></p> <p>Reference Steam tables and knowledge of relationship between DP and flow</p> <table border="1" data-bbox="778 949 1480 1136"> <tbody> <tr> <td>000037 Steam Generator Tube Leak / 3</td> <td>AK1.02 – Knowledge of the operational implications of the following concepts as they apply to Steam Generator Tube Leak: Leak rate vs pressure drop</td> <td>3.5</td> </tr> </tbody> </table>	000037 Steam Generator Tube Leak / 3	AK1.02 – Knowledge of the operational implications of the following concepts as they apply to Steam Generator Tube Leak: Leak rate vs pressure drop	3.5
000037 Steam Generator Tube Leak / 3	AK1.02 – Knowledge of the operational implications of the following concepts as they apply to Steam Generator Tube Leak: Leak rate vs pressure drop	3.5		

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

25

ID: Q50475

Points: 1.00

A fire in the Unit1 Cable Spreading room has occurred. The SM has determined that a Control Room evacuation is necessary and AOP-9A should be implemented. Which of the following sets of actions are required to be completed within the first 30 minutes of CR Evacuation to prevent damage to plant equipment?

- A. Trip the RCPs AND start the 0C Diesel Generator
- B. Start the 0C Diesel Generator AND Establish Charging flow
- C. Trip the RCPs AND Trip MCC-104 load center
- D. Establish AFW flow AND Establish Charging flow

Answer: A

### Answer Explanation:

Trip the RCPs AND start the 0C Diesel Generator - correct per AOP9A basis IV.C and notes III C. 2

Start the 0C Diesel Generator AND Establish Charging flow - Not correct, Charging flow not required until 60 minutes

Trip the RCPs AND Trip MCC-104 load center - Not correct, trip MCC-104 load center does not have a time limit

Establish AFW flow AND Trip MCC-104 load center - Not correct, charging flow not required for 60 minutes

*Deleted*

Question 25 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	50475
User-Defined ID:	Q50475
Cross Reference Number:	
Topic:	Given a fire in the plant, identify the effects on important plant equipment
RO Importance:	3.1
SRO Importance:	4.3
KA Number:	42067AA204
Comments:	New Question : <b>Fundamental/Memory</b> Reference AOP9A Basis page 1 AOP9A page 5

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

	000067 Plant Fire On-site / 8	AA2.04 - Ability to determine and interpret the following as they apply to the Plant Fire on Site: The fire's extent of potential operational damage to plant equipment	3.1
<p>K/A Match Analysis</p> <p>This question matches the important aspect of this K/A since a fire in the cable spreading room at CCNPP could result in damage to the RCPs due to the potential loss of CCW due to the fire effecting the close circuitry for the CCW containment isolation valves. the RCPs are tripped to prevent the damage. Also, the OC Diesel Generator can be potentially damaged since with a loss of the 07 bus the OC D/G will loose its pre-lubrication and can be potentially damaged if its is not started within 30 minutes, or air bottles connected to perform a pneumatic prelubrication. MCC 104 is stripped due to the potential damage to the PORV control circuitry which could result in a loss of RCS inventory.</p>			

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

26

ID: Q50270

Points: 1.00

A loss of offsite power has occurred and 1A Diesel Generator has failed to start, followed by a complete loss of all feedwater. Once Through Core Cooling (OTCC) was initiated due to a loss of all feedwater. Which of the following is true concerning OTCC?

- A. OTCC will be successful
- B. OTCC will not be successful
- C. OTCC will only be successful if 13 CHG pp is aligned to 14B 480V Bus
- D. OTCC will only be successful if 12 HPSI pump is started

Answer: B

### Answer Explanation:

PORV 1-RC-402-ERV will not operate on high RCS pressure, its "manual open" handswitch position will not function to open the PORV--correct, power from MCC-114 is required to allow the PORV to open automatically or manually. With only one PORV available, OTCC will not be successful per attachment 17 even with all HPSI and Chg pumps.

All other answers are incorrect based on the need to have both PORVS operational for OTCC to be successful

Question 26 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	2.00
System ID:	50270
User-Defined ID:	Q50270
Cross Reference Number:	
Topic:	Effect of PORVs on OTCC with failure
RO Importance:	3.4
SRO Importance:	3.4
KA Number:	42056AA132
Comments:	Modified from Q 20589 used on 2002 NRC Exam : <b>Comprehensive/Analysis</b>  References: EOP Attachments - Attachment 17 AOP-7I pages 18 , 50

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

	000074 (W/E06&E07) Inad. Core Cooling / 4	EK2.02 – Knowledge of the interrelations between the PORV and the following : <b>Inadequate Core Cooling</b>	3.9
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## Question 26 Table-Item Links

### Operations Procedure References (from Nucleis)

EOP EOP-02-1 LOSS OF OFFSITE POWER

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

27

ID: Q50273

Points: 1.00

Unit one is operating at 100% power with the following conditions:

- 13 SRW Pump tagged out for maintenance

A large Loss of Coolant Accident (LOCA) occurred on Unit-1, followed by a loss of feedwater. The following conditions are noted:

- 12 SRW PMP - Tripped
- CNTMT PRESS - 15 PSIG

Approximately 30 minutes later it was determined that 12 SRW Pump trip was caused by a blown fuse and has been replaced.

The CRS has directed you to restore SRW.

Which of the following sets of actions is correct based on the conditions listed?

- A. Isolate SRW to CACs on 12 SRW SUBSY and start 12 SRW Pump.
- B. Isolate SRW to CACs on 12 SRW SUBSY and start 12 SRW Pump, then throttle SRW to 13 & 14 CACs
- C. Place 12 SRW Pump in PTL, do not start 12 SRW until Technical support has provided guidance..
- D. Place 12 SRW Pump in PTL, place 1B D/G OUT BKR in PTL, locally trip 1B D/G

Answer: A

## Answer Explanation:

### Reference

Reference EOP-8 appendix 2, Vital Auxiliaries.

Isolate SRW to CACs on 12 SRW SUBSY and start 12 SRW Pump to support 1B D/G operation - correct per EOP-8 and basis allows restarting 12 SRW pump with SRW to 13 & 14 CAC isolated.

Isolate SRW to CACs on 12 SRW SUBSY and start 12 SRW Pump, then throttle SRW to 13 & 14 CACs - incorrect per the basis restoration via throttling was not evaluated because these are butterfly valves

Place 12 SRW Pump in PTL, do not start 12 SRW until Technical support has provided guidance..- incorrect, EOP-8 allows you to attempt a start of 12 SUBSYS in this condition and later contact TSC for continued operation.

Place 12 SRW Pump in PTL, place 1B D/G OUT BKR in PTL, locally trip 1B D/G - incorrect, these actions are for the case that 12 SRW subsys cannot be restarted.



# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

Question 27 Info					
Question Type:	Multiple Choice				
Status:	Active				
Always select on test?	No				
Authorized for practice?	No				
Points:	1.00				
Time to Complete:	3				
Difficulty:	3.00				
System ID:	50273				
User-Defined ID:	Q50273				
Cross Reference Number:					
Topic:	Actions for idle CAC with high CNTM pressure				
RO Importance:	3.3				
SRO Importance:	3.7				
KA Number:	44A16AK33				
Comments:	<p>New Question : <b>Comprehensive/Analysis</b></p> <p>Reference EOP-8 appendix 2 Vital Auxiliaries and EOP-5 Basis page 33</p> <table border="1" data-bbox="776 934 1474 1186"> <tr> <td data-bbox="776 934 998 1186">CE/A16 Excess RCS Leakage</td> <td data-bbox="998 934 1409 1186">EK3.3 --Knowledge of the reasons for the following responses as they apply to the Excess RCS Leakage (CFR: 41.5 / 41.10, 45.6, 45.13): Manipulation of controls required to obtain desired operating results during abnormal and emergency situations</td> <td data-bbox="1409 934 1474 1186">3.2</td> </tr> </table>		CE/A16 Excess RCS Leakage	EK3.3 --Knowledge of the reasons for the following responses as they apply to the Excess RCS Leakage (CFR: 41.5 / 41.10, 45.6, 45.13): Manipulation of controls required to obtain desired operating results during abnormal and emergency situations	3.2
CE/A16 Excess RCS Leakage	EK3.3 --Knowledge of the reasons for the following responses as they apply to the Excess RCS Leakage (CFR: 41.5 / 41.10, 45.6, 45.13): Manipulation of controls required to obtain desired operating results during abnormal and emergency situations	3.2			

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

28

ID: Q50476

Points: 1.00

Using Provided Reference and given the following conditions on Unit-2

Pressurizer Pressure = 315 PSIA

RCS Tcold = 140°F

S/G Temperature = 90°F

Pressurizer Level = 160 inches

4KV Bus Voltage = 4130 V

13.8 KV Bus Voltage = 14.2 KV

Which of the following conditions would prevent starting RCP 21A per plant operating procedures

- A. A pressurizer level control malfunction causes pressurizer level to rise to 172 inches and stabilizes.
- B. A heatup causes RCS Temperature to rise to 155°F and stabilizes
- C. A voltage regulator perturbation causes 4 KV Bus voltage to lower to 4110 Volts and stabilizes.
- D. An electrical perturbation causes 13 KV Bus voltage to rise to 14.8 KV and stabilizes.

Answer:

A

or B

**Answer Explanation:**

Per OI-1A Section 6.1.B Starting requirements for an RCP, S/G Temp no more than 60°F below RCS temperature, Pressurizer level less than 170 inches, RCS Pressure and Temperature within the limits of Figure 17, 4KV Buss voltage is greater than 4100 Volts, and 13.8 KV bus voltage less than or equal to 14.8KV

A. A pressurizer level control malfunction causes pressurizer level to rise to 172 inches and stabilizes.-- Is Correct since pressurizer level has to be less than 170 inches

B. A heatup causes RCS Temperature to rise to 155°F and stabilizes-- Is Incorrect since RCS temperature has to be less than 60°F above S/G temperature  $90 + 60 = 150$ . 155°F is 55° less than RCS temperature and still within the limits

C. A voltage regulator perturbation causes 4 KV Bus voltage to lower to 4110 Volts and stabilizes.-- Is incorrect since bus voltage is greater than 4100 volts.

D. An electrical perturbation causes 13 KV Bus voltage to rise to 14.8 KV and stabilizes.-- Is incorrect since the limit is less than or equal to 14.8KV . 14.2 KV is less than 14.8 KV

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

Question 28 Info					
Question Type:	Multiple Choice				
Status:	Active				
Always select on test?	No				
Authorized for practice?	No				
Points:	1.00				
Time to Complete:	3				
Difficulty:	3.00				
System ID:	50476				
User-Defined ID:	Q50476				
Cross Reference Number:					
Topic:	Identify the effect on starting an RCP				
RO Importance:	2.6				
SRO Importance:	2.9				
KA Number:	34003K614				
Comments:	<p>New Question : <b>Comprehensive/Analysis</b></p> <p>OI-1A pages 5-13 OI-1A figure 17</p> <p>NOTE Figure 17 is provided as Reference</p> <table border="1" data-bbox="776 997 1477 1123"> <tr> <td>003 Reactor Coolant Pump</td> <td>K6.14 – <b>Knowledge of the effect of a loss or malfunction on the following will have on the RCPS: Starting requirements</b></td> <td>2.6</td> </tr> </table>		003 Reactor Coolant Pump	K6.14 – <b>Knowledge of the effect of a loss or malfunction on the following will have on the RCPS: Starting requirements</b>	2.6
003 Reactor Coolant Pump	K6.14 – <b>Knowledge of the effect of a loss or malfunction on the following will have on the RCPS: Starting requirements</b>	2.6			

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

29

ID: Q50275

Points: 1.00

The Letdown Backpressure Control Valves CV-110P and CV-110Q, prevent saturated conditions between the \_\_\_\_\_ and \_\_\_\_\_ to prevent erosion damage. The Letdown Backpressure Control Valves \_\_\_\_\_ to decrease pressure and \_\_\_\_\_ to increase pressure.

- A. LD Heat Exchanger, LD Flow control valves, close, open
- B. LD Heat Exchanger, LD Flow control valves, open, close
- C. Regenerative heat exchanger, Letdown Flow Control Valves, close, open
- D. Regenerative heat exchanger, Letdown Flow Control Valves, open, close

Answer: B

## Answer Explanation:

Per SD-41 ( CVCS), the purpose of the Backpressure Control Valves are to:  
Prevent flashing of hot liquid to steam between the Letdown Flow Control valves and the Letdown Heat Exchanger, Control letdown system pressure at 460 + 40 psi (NOT/NOP)  
Prevents erosion damage from the letdown control valve to the inlet of the heat exchanger. Valves open to decrease system pressure and close to increase system pressure

A. LD Heat Exchanger, LD Flow control valves, close, open --- Incorrect, valves open to decrease pressure and close to increase pressure.

B. LD Heat Exchanger, LD Flow control valve, open, close -- Correct

C. Regenerative heat exchanger, Letdown Flow Control Valves, close, open-- Incorrect, Prevent flashing of hot liquid to steam between the Letdown Flow Control valves and the Letdown Heat Exchanger.

D. regenerative heat exchanger, Letdown Flow Control Valves, open, close-- Incorrect, Prevent flashing of hot liquid to steam between the Letdown Flow Control valves and the Letdown Heat Exchanger, and valves open to decrease pressure and close to increase pressure

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

Question 29 Info				
Question Type:	Multiple Choice			
Status:	Active			
Always select on test?	No			
Authorized for practice?	No			
Points:	1.00			
Time to Complete:	3			
Difficulty:	2.00			
System ID:	50275			
User-Defined ID:	Q50275			
Cross Reference Number:				
Topic:	Backpressure control valves effect on subcooled conditions			
RO Importance:	3.6			
SRO Importance:	3.9			
KA Number:	32004K543			
Comments:	<p>New Question : <b>Fundamental/Memory</b></p> <p>References CVCS Lesson Plan LOI-041-1-1(LD) slides 72 - 74</p> <table border="1" data-bbox="776 932 1479 1087"> <tr> <td>004 Chemical and Volume Control</td> <td>K5.43 – Knowledge of the operational implications of the following concepts as they apply to the CVCS: Saturation subcooling, superheat in steam/water</td> <td>3.6</td> </tr> </table>	004 Chemical and Volume Control	K5.43 – Knowledge of the operational implications of the following concepts as they apply to the CVCS: Saturation subcooling, superheat in steam/water	3.6
004 Chemical and Volume Control	K5.43 – Knowledge of the operational implications of the following concepts as they apply to the CVCS: Saturation subcooling, superheat in steam/water	3.6		

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

30

ID: Q50276

Points: 1.00

Unit 1 is operating at 100% power when the following sequence of events occurs:

## Time 0

11 SG Pressure - P1013A, P1013B, P1013C, P1013D = 860 PSIA

12 SG Pressure - P1023A, P1023B, P1023C, P1023D = 860 PSIA

11 SG Level - LT114A, LT114B, LT114C, LT114D = 0 inches

12 SG Level - LT124A, LT124B, LT124C, LT124D = 0 inches

## Time 1 Min

11 SG Pressure - P1013A, P1013B, P1013C = 865 PSI , P1013D = 856 PSIA

12 SG Pressure - P1023A, P1023B, P1023C, P1023D = 740 PSIA

11 SG Level - LT114A, LT114B, LT114C = -180 inches , LT114D = -120 inches

12 SG Level - LT124A, LT124B, LT124C = -100 inches , LT124D = -110 inches

## Time 2 Min 30 seconds

11 SG Pressure - P1013A, P1013B, P1013C = 805 PSI , P1013D = 800 PSIA

12 SG Pressure - P1023A, P1023B, P1023C, P1023D = 740 PSIA

11 SG Level - LT114A, LT114B, LT114C = -180 inches , LT114D = -100 inches

12 SG Level - LT124A, LT124B, LT124C = -100 inches , LT124D = -180 inches

Based on these conditions which of the following is currently true:( Assume NO operator actions)?

- A. AFW is supplying 11 S/G ONLY
- B. AFW is supplying 12 S/G ONLY
- C. AFW is isolated to 11 & 12 S/Gs
- D. AFW is supplying 11 & 12 S/G

Answer: D

## Answer Explanation:

AFAS start signal is initiated when EITHER S/G has two of its four wide range level transmitters sensing < -170"(170 inches from normal level of 0 inches)

Starts AFW after a 20 second time delay to prevent spurious actuation.

If the S/G level rises above -170" prior to the 20 seconds the AFAS start signal will drop out. However, the sensors will have to reset.

Once initiated AFAS start stays locked in.

## AFAS BLOCK

Secures AFW flow to the SG that has been identified as RUPTURED by shutting four blocking valves (2 motor and 2 turbine) to the S/G

Monitors four pressure channels for each SG.

Differential pressures of sensors (one from each SG) provides input to two bistables which trip at 115 psid (TS setpoints are 135 and 130).

When there are 2 of 4 D/P signals from a SG the logic matrix from either SG sends a RUPTURE signal to BOTH actuation logic subsystems (ZA and ZB).

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

AFAS Block isolates the generator with the lowest pressure.

When the differential pressure condition clears the block valves will Reopen unless the handswitches have been taken to close.

Question 30 Info				
Question Type:	Multiple Choice			
Status:	Active			
Always select on test?	No			
Authorized for practice?	No			
Points:	1.00			
Time to Complete:	5			
Difficulty:	3.00			
System ID:	50276			
User-Defined ID:	Q50276			
Cross Reference Number:				
Topic:	Evaluate AFAS Logic Conditions to determine AFW Status			
RO Importance:	2.9			
SRO Importance:	3.3			
KA Number:	32013K502			
Comments:	<p>New Question: <b>Comprehensive/Analysis</b></p> <p>Reference AFAS Lesson plan LOI-036B-1-1 Slides 1-14, 37-39, 60-65</p> <table border="1" data-bbox="776 1102 1474 1261"> <tr> <td>013 Engineered Safety Features</td> <td>K5.02 – Knowledge of the operational implications of the following concepts as they apply to the ESFAS: Safety system logic and reliability</td> <td>2.9</td> </tr> </table>	013 Engineered Safety Features	K5.02 – Knowledge of the operational implications of the following concepts as they apply to the ESFAS: Safety system logic and reliability	2.9
013 Engineered Safety Features	K5.02 – Knowledge of the operational implications of the following concepts as they apply to the ESFAS: Safety system logic and reliability	2.9		

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

31

ID: Q50290

Points: 1.00

Which of the following is the most likely reason for this condition:

"SI PPS RECIRC MOV 659 CLOSED RAS BLOCKED" Alarm is ON

- A. MINI FLOW RETURN TO RWT ISOL , 1- SI-659 MOV, is shut with an inadvertent RAS present
- B. MINI FLOW RETURN TO RWT ISOL MOV, 1- SI-659 MOV is shut with no RAS present
- C. SI PP RECIR LOCKOUT handswitch, 1-HS-3659A, is in ON and RAS present
- D. MINI FLOW RETURN TO RWT ISOL, 1-SI-659-MOV shut and SI PP RECIR LOCKOUT handswitch, 1-HS-3659A in ON

Answer: B

Deleted

### Answer Explanation:

Per Alm Manual for 1C09 window H-55 Different sets of conditions will give the alarm.

B. MINI FLOW RETURN TO RWT ISOL MOV, 1- SI-659 MOV is shut with no RAS present will give this alarm

A, C, D have conditions that do not fully satisfy any of the three requirements to get the alarm

Question 31 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	3.00
System ID:	50290
User-Defined ID:	Q50290
Cross Reference Number:	
Topic:	Reason for SI PPS RECIRC MOB 659 ALM ON
RO Importance:	2.8
SRO Importance:	2.8
KA Number:	34005A405
Comments:	New Question: <b>Fundamental/Memory</b>  Reference Alarm Manual 1C-09 window H-55 page 86



# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

	005 Residual Heat Removal	A4.05 – Ability to manually operate and/or monitor in the control room: Position of RWST recirculation valve (locked when not in use, continuously monitored when in use)	2 . 8 *
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# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

32

ID: Q50350

Points: 1.00

Using provided references:

U-1 is at 100% power, when one RPS matrix logic channel is declared inoperable. The present time is 1300. When must the unit be in Hot Standby?

- A. 1900 today
- B. 1300 two days from now
- C. 1300 three days from now
- D. 1900, two days from now

Answer: D

**Answer Explanation:**

Per TS 3.3.3.E, Initially we have 48 hours to restore matrix logic channel, and if this is not met we have 6 hours to be in Mode 3.

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

Question 32 Info					
Question Type:	Multiple Choice				
Status:	Active				
Always select on test?	No				
Authorized for practice?	No				
Points:	1.00				
Time to Complete:	4				
Difficulty:	3.00				
System ID:	50350				
User-Defined ID:	Q50350				
Cross Reference Number:	Q20207				
Topic:	Using provided references, determine Tech Spec actions for one RPS matrix logic channel inop				
RO Importance:	3.4				
SRO Importance:	3.8				
KA Number:	2132				
Comments:	<p>Modified from Q20207: <b>Comprehensive/Analysis</b></p> <p>References: Tech Spec 3.3</p> <p>Provide A copy of Tech Spec 3.1, 3.2, 3.3</p> <table border="1" data-bbox="776 1024 1479 1121"> <tr> <td>012 Reactor Protective System</td> <td>2.1.32 Ability to explain and apply system limits and precautions</td> <td>3.8</td> </tr> </table> <p><b>LOIT Learning Objective for ROs and SROs</b></p> <p><b>Given the RM-1-101 and/or Technical Specifications, Determine whether the Limiting Condition for RPS Operation is Met, and Identify Required ACTIONS for:</b></p> <ol style="list-style-type: none"> <li>RPS Trip Units (A8.01, 02, K10.01)</li> <li>Manual Trip</li> <li>Logic Matrices and Relays (A8.03)</li> <li>TCBs (A8.04, K13.04)</li> </ol>		012 Reactor Protective System	2.1.32 Ability to explain and apply system limits and precautions	3.8
012 Reactor Protective System	2.1.32 Ability to explain and apply system limits and precautions	3.8			

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

33

ID: Q50613

Points: 1.00

Using Provided Reference:

A LOCA occurred on Unit one ~ 20 minutes ago. Concurrent with the LOCA, 14 4KV bus tripped due to a fault on the bus. As a result of the LOCA Containment pressure rose to ~ 3.0 PSIG and operators verified the appropriate system actuations. RCS pressure is now 225 PSIA and the CRS has directed you to verify safety injection flow. Which of the following is the correct Safety Injection flow for these conditions, and what if any actions should be taken?

- A. 1400 GPM, open 1-SI-653, HPSI HDR XCONN valve
- B. 1400 GPM, no additional actions required
- C. 690 GPM, open 1-SI-653, HPSI HDR XCONN valve
- D. 690 GPM, no additional action required.

Answer: D

## Answer Explanation:

A. 1400 GPM, open 1-SI-653, HPSI HDR XCONN valve -- Is Incorrect, the flow rate is not correct since 14 4KV bus tripped on fault, 1B D/G will not repower the bus so only one HPSI pump will be running so flow will be ~ 690 GPM.

B. 1400 GPM, no additional actions required-- Is incorrect, since 14 4KV bus tripped on fault, 1B D/G will not repower the bus so only one HPSI pump will be running so flow will be ~ 690 GPM.

C. 690 GPM, open 1-SI-653, HPSI HDR XCONN valve -- Is Incorrect, the flow is correct but 1-SI-653 is only opened if the flow is unacceptable, also since since 14 4KV bus tripped on fault, 1B D/G will not repower the bus so no power is available for 12 HPSI pump or 1-SI-653.

D. 690 GPM, No additional action required.-- Is Correct since flow is acceptable

Candidate has to use the conditions in the stem ( LOCA, RCS pressure and 14 4KV Bus tripping on fault) and interpret this to determine that 1B D/G will start, but due to the fault will not pick up the bus. This will leave him with one HPSI pump running and no power for 12 HPSI pump and no power for 1-SI-653 ( HPSI HDR cross-connect). He should determine that the flow rate is acceptable by evaluating the graph provided ( attachment 10 & 11) with one pump running and no other actions are required. If he assumes that 1B picks up the bus then he will assume two pumps. He may have the misconception that he needs to open the HPSI HDR X Conn since he only has one pump running, or assumes that he needs it open to start 12 HPSI pump.

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

Question 33 Info				
Question Type:	Multiple Choice			
Status:	Active			
Always select on test?	No			
Authorized for practice?	No			
Points:	1.00			
Time to Complete:	3			
Difficulty:	2.00			
System ID:	50613			
User-Defined ID:	Q50613			
Cross Reference Number:	Q25107			
Topic:	Safety Injection Flowrate for these conditions			
RO Importance:	2.8			
SRO Importance:	3.2			
KA Number:	32006A109			
Comments:	<p>New Question : <b>Comprehensive/Analysis</b></p> <p>References : EOP-5 Page 10 EOP-5 Basis</p> <p>Reference Provided is Attachment 10 &amp; 11 of EOP attachments</p> <table border="1" data-bbox="776 1024 1479 1213"> <tr> <td>006 Emergency Core Cooling</td> <td>A1.17 (CFR: 41.5 Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the ECCS controls including: ECCS flow rate</td> <td>4.2</td> </tr> </table>	006 Emergency Core Cooling	A1.17 (CFR: 41.5 Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the ECCS controls including: ECCS flow rate	4.2
006 Emergency Core Cooling	A1.17 (CFR: 41.5 Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the ECCS controls including: ECCS flow rate	4.2		

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

34

ID: Q50336

Points: 1.00

Given the following conditions:

- Unit 2 is at 100% power
- Quench tank pressure is 15 psig
- Quench tank temperature is 120°F
- Pressurizer temperature is 653 degrees F
- Pressurizer pressure is 2250 psia

Which ONE of the following identifies the expected reading of the leaking pressurizer safety valve tailpipe temperature instrument, and the expected steam condition?

- A. 215 ° F; superheated
- B. 250 ° F; wet vapor
- C. 280 ° F; superheated
- D. 585 ° F; wet vapor

Answer: B

### Answer Explanation:

- A. Is incorrect, temp wrong and it is not superheated. Will get this if you don't convert to absolute pressure
- B. Is correct, using the mollier diagram and that this is an isenthalpic process, you add 14.7 to 15 psig =29.7 psia then run that line up to saturation line and you get 250, or use steam tables.
- C. Is incorrect, temp is wrong and it is not superheated. Will get this if you use wrong entering enthalpy (extrapolate wrong)
- D. Is incorrect, temp is too high. Would get this if he used 2250PSIA and the intersection of 1118 enthalpy on the mollier diagram

Question 34 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	3.00
System ID:	50590
User-Defined ID:	Q50336
Cross Reference Number:	
Topic:	Parameters identify tailpiece parameters
RO Importance:	2.6
SRO Importance:	2.7
KA Number:	35007A103
Comments:	Bank Question : <b>Comprehensive/Analysis</b>  Isenthalpic expansion use steam tables and Mollier diagram

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

	007 Pressurizer Relief/Quench Tank	A1.03 – Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the PRTS controls including: Monitoring quench tank temperature	2 . 6
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# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

35

ID: Q50337

Points: 1.00

Unit 1 is in Mode 1 at 100% power when a loss of Component Cooling occurs. Which of the following resulting condition(s) from this event alone would require a Reactor trip?

- A. CCW Head tank level lowers to and stabilizes at 5 inches.
- B. RCP upper thrust bearing temperature rises to and stabilizes at 196°F .
- C. RCP lower seal cavity temperature rises to and stabilizes at 205°F
- D. CCW Header pressure lowers to and stabilizes at 60 PSIG.

Answer: B

**Answer Explanation:**

A Incorrect, AOP7C would address this but it is not trip criteria

B. Correct, this satisfies trip criteria per AOP 7C- Step A

C. Incorrect, This is not a trip criteria, 200°F is a start criteria for the RCP

D. Incorrect this is not a trip criteria, it is only 5 psig lower than the 65 # exit criteria for AOp 7C.

Question 35 Info				
Question Type:	Multiple Choice			
Status:	Active			
Always select on test?	No			
Authorized for practice?	No			
Points:	1.00			
Time to Complete:	3			
Difficulty:	2.00			
System ID:	50337			
User-Defined ID:	Q50337			
Cross Reference Number:	Q20381			
Topic:	Which resulting condition from a loss of CCW at 100% would require a Reactor trip?			
RO Importance:	3.4			
SRO Importance:	3.5			
KA Number:	38008K301			
Comments:	Modified from Q20381 in Bank : <b>Fundamental/Memory</b>  Reference AOP7C page 7 -11			
	008 Component Cooling Water	<table border="1"> <tr> <td>K3.01 – Knowledge of the effect that a loss or malfunction of the CCWS will have on the following: Loads cooled by CCWS</td> <td>3. 4</td> </tr> </table>	K3.01 – Knowledge of the effect that a loss or malfunction of the CCWS will have on the following: Loads cooled by CCWS	3. 4
K3.01 – Knowledge of the effect that a loss or malfunction of the CCWS will have on the following: Loads cooled by CCWS	3. 4			



# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

36

ID: Q50338R

Points: 1.00

Unit 2 is operating at 100% power with the Letdown Hx Temperature Controller, 2-TIC-223, in MANUAL. While operating 2- TIC-223 the Reactor Operator adjusts the output of 2- TIC-223 to 100%. Which of the following could result from this action:

- A. Reactor Power decreases and Radiation Monitor isolation, 1-CV-521-CV shuts
- B. L/D HX CCW Diff Press High Alarm
- C. REGEN HX OUT TEMP HIGH Alarm
- D. RCS boron concentration decreases and reactor power increases

Answer: A

### Answer Explanation:

Raising the output of the TIC to 100% will shut the TCV therefore causing temperature to rise which will cause boron to be sloughed which is a negative effect. However, temperature out of the letdown Ht Exchanger will rise and at 140°F 1-CV-521-CV will shut.

L/D HX CCW Diff Press High Alarm will not happen because this would mean max flow ( Valve wide open)

REGEN HX OUT TEMP HIGH Alarm. Is not affected by CCW flow

RCS boron concentration decreases and reactor power increases is incorrect (This would mean increased flow, lower temperature)

Question 36 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	3.00
System ID:	50338
User-Defined ID:	Q50338R
Cross Reference Number:	
Topic:	Adjusting TIC-223 effects on plant
RO Importance:	3.0
SRO Importance:	2.9
KA Number:	38008A409
Comments:	New Question : <b>Comprehensive/Analysis</b>  CVCS Lesson Plan LOI-041-1-1 (LD)- Slides 63-68 1C07 Alarm manual page 14

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

	008 Component Cooling Water	A4.09 – Ability to manually operate and/or monitor in the control room: CCW temperature control valve	3.0*
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# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

37

ID: Q50339

Points: 1.00

Unit 1 was operating at 100% Power MOC, with the following conditions:

Pressurizer pressure is 2250 PSIA  
PZR backup and proportional heater control is in AUTO  
1-HS-100 (PZR pressure control) in the "X" position

A loss of 1Y09 has occurred. What affect will this have on the operation of the Pressurizer Pressure Control System?

- A. Pressurizer Spray Valve will not operate in MANUAL OR AUTO
- B. Pressurizer Spray Valve will not operate in AUTO, but will operate in MANUAL
- C. All Pressurizer Heaters will be OFF
- D. Pressurizer Heaters will not energize on high pressurizer level (+13")

Answer: A

### Answer Explanation:

A. CORrect per AOP7I section of loss of 1Y09 page 57

B. Incorrect answer not supported by AOP 7I

C. Incorrect Pzr htrs are not powered by 1Y09 , however PZR htrs will be off on a loss of 1Y10 due to the low level cutoff coming from 1Y10.

D. Incorrect Answer not supported by AOP 7I

Question 37 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	2.00
System ID:	50339
User-Defined ID:	Q50339
Cross Reference Number:	
Topic:	Which power supply affects press control X
RO Importance:	2.5
SRO Importance:	2.7
KA Number:	33010K202
Comments:	New Question: <b>Fundamental/Memory</b>  Reference- AOP 7I page 57

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

	010 Pressurizer Pressure Control	K2.02 – Knowledge of bus power supplies to the following: Controller for PZR spray valve	2. 5
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# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

38

ID: Q50340

Points: 1.00

U-1 is in Mode 3 performing a reactor startup per OP-2, "Plant Startup from Hot Standby to Minimum Load". The following initial conditions exist:

- Digital Feedwater Control System (DFWCS) is in AUTO
- Turbine Bypass Valves (TBV) in AUTO with setpoint of 900 PSI
- ALL Reactor Trip Circuit Breakers (TCBs) are shut
- Crew is preparing to withdraw shutdown CEAs

Due to an electrical malfunction developing on the CEDM bus the following indications are noted:

- Four reactor trip bus UV relay indicator lights energize on the Trip Status Panel above 1C15

What impact will this have on DFWCS?

- A. DFWCS will receive a signal from ESFAS AL ONLY to shift to Post Reactor Trip Mode
- B. DFWCS will receive a signal from ESFAS BL ONLY to shift to Post Reactor Trip Mode
- C. DFWCS will receive a signal from ESFAS AL & BL to shift to Post Reactor Trip Mode
- D. DFWCS will remain in its present mode and continue to feed the S/Gs

Answer: B

### Answer Explanation:

B. Correct - DFWCS will receive a signal from ESFAS BL ONLY to shift to Post Reactor Trip Mode is the correct answer.

A. Incorrect as the signal to shift to post trip comes from ESFAS BL ONLY

C. Incorrect the signal to shift to post trip mode comes from ESFAS BL only

D. Incorrect- with UV on Rx trip bus DFWCS will shift to post trip mode.

The signal to shift the DFWCS to the post trip mode uses only ESFAS B logic channel. This is activated when it receives 2 of four reactor trip bus undervoltage inputs. A candidate could have the misconception that this signal comes from A logic channel or both A and B logic channels. He could also have the misconception that you need to have a turbine trip and Rx trip bus undervoltage to get DFWCS into the post trip mode. This is plausible since this was the configuration that existed some years ago (Turbine trip was an input to get DFWCS into post trip mode), but is no longer the case.

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

Question 38 Info				
Question Type:	Multiple Choice			
Status:	Active			
Always select on test?	No			
Authorized for practice?	No			
Points:	1.00			
Time to Complete:	3			
Difficulty:	4.00			
System ID:	50340			
User-Defined ID:	Q50340			
Cross Reference Number:				
Topic:	Effects of RX Trip Bus UV on ESFAS			
RO Importance:	3.8			
SRO Importance:	4.1			
KA Number:	37012K304			
Comments:	<p>New Question : <b>Comprehensive/Analysis</b></p> <p>Reference</p> <p>ESFAS Lesson Plan LOI-048-1-2 Slides 109 -111, 114 - 116</p> <p>AOP 7J Page 28</p> <table border="1" data-bbox="773 1038 1478 1166"> <tr> <td>012 Reactor Protection</td> <td>K3.04 – Knowledge of the effect that a loss or malfunction of the RPS will have on the following: ESFAS</td> <td>3.8 *</td> </tr> </table>	012 Reactor Protection	K3.04 – Knowledge of the effect that a loss or malfunction of the RPS will have on the following: ESFAS	3.8 *
012 Reactor Protection	K3.04 – Knowledge of the effect that a loss or malfunction of the RPS will have on the following: ESFAS	3.8 *		

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

39

ID: Q50341R

Points: 1.00

U-1 is in Mode 3 returning from a maintenance outage. ESFAS sensor cabinet ZF (1C93) has been shutdown for cleaning and inspection. (All other channels are energized and signals are not bypassed).

Containment pressure transmitter (1PT5313B) fails high, which of the following describes a correct response for this condition?

- A. 1 CV -1597-CV, 11 SFP HX SRW Inlet valve closes.
- B. 1CV 4151, Containment Spray Valve Opens.
- C. 11 Penetration Room Exhaust Fans Starts.
- D. 13 Containment Iodine Removal Unit Starts.

Answer: D

### Answer Explanation:

Containment Pressure transmitter 1PT5313 A - B, supply a signal for SIAS on Hi containment pressure., when 1PT5313B fails with sensor cabinet ZF de-energized you have met the condition to actuate SIS on Containment pressure . Equipment actuated by a SIAS A or SIAS B will go to its actuated condition. You have not met the conditions for CIS, or CSAS in order to have equipment associated with these actuations to reposition. Since 1PT 5313B does not feed CIS or CSAS.Those ESFAS signals will not actuate.

A. is incorrect - 1 CV -1597-CV, 11 SFP HX SRW Inlet valve closes. This will happen on a CSAS

B. is incorrect - 1CV 4151, Containment Spray Valve Opens.. This will happen on a CSAS

C. is incorrect - 11 Pen Room Exhaust Fans Starts. This will happen on a CIS

D. is Correct - 13 Containment Iodine Removal Unit Starts. This will happen on a SIAS

Question 39 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	4
Difficulty:	3.00
System ID:	50591
User-Defined ID:	Q50341R
Cross Reference Number:	Q20783
Topic:	When a high containment pressure signal is generated, which components receive this signal?
RO Importance:	2.7
SRO Importance:	3.1
KA Number:	32013K601
Comments:	Modified from Bank Q20783 : <b>Fundamental/Memory</b>  ESFAS Subsystems Receiving High Containment Pressure Signal



# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

	013 Engineered Safety Features Actuation	K6.01 – Knowledge of the effect of a loss or malfunction on the following will have on the ESFAS: (CFR: 41.7 / 45.5 Sensors and detectors	2 . 7 *
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# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

40

ID: Q50342

Points: 1.00

A SIAS has occurred on Unit 1. Which of the following is a correct statement for CAC operation?

- A. The CACs can be started in Fast Speed at 1C09 AND at the load contactor panel.
- B. The CACs can be shifted to Fast Speed at the load contactor panel ONLY
- C. The CACs can be stopped from the load contactor panel ONLY
- D. The CACs can be stopped at 1C09 and at the load contactor panel.

Answer: B

### Answer Explanation:

The CACs can be shifted to Fast Speed at the load contactor panel ONLY

A is incorrect, with a SIS present CACS can not be started in fast speed from the CR per LD 76 sheet 11

B is correct since CACs can be shifted to Fast Speed at the load contactor panel ONLY

C is incorrect, SIAS signal seals in per LD 76 sheet 11

D is incorrect SIAS signal seals in per LD 76 Sheet 11

All of the answers require the candidate to be familiar with the logic sheets and/or control drawings for the CACS. If a candidate does not know the logic he could have the misconception that the CACs can be shifted to fast or stopped with a SIAS present since the H/S at 1C09 have a pull to lock feature to start them in slow. He could confuse this with the ability to pull to lock and stop the CACs. Some pumps ( CCW, SW, SRW) can be pulled to lock and will not start on SIAS. This is not true for the CACs. CACs are manually started in fast speed from 1C09 when containment environment is degraded.

Question 40 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	2
Difficulty:	2.00
System ID:	50342
User-Defined ID:	Q50342
Cross Reference Number:	
Topic:	With SIAS where can CACs be placed in FAst Speed
RO Importance:	3.7
SRO Importance:	3.5
KA Number:	35022K102
Comments:	New Question: <b>Fundamental/Memory</b>  ECCS Lesson Plan Containment Spray & Cooling LOI-052-3-3 slides 56-58, 60-61, 65, LD 76 Sheet 11 AOP-9A page 53

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

	022 Containment Cooling	K1.02 – Knowledge of the physical connections and/or cause effect relationships between the CCS and the following systems: SEC/remote monitoring systems	3. 7 *
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# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

41

ID: Q50343

Points: 1.00

Which of the following combinations of conditions/equipment would maintain the pressure and temperature of the containment within design parameters following a Design Basis LOCA ( With a Loss of offsite power)?

- A. 11 CAC is OOS, and CS pump A fails to start and CS pump B seizes and trips when started.
- B. 13 CAC is OOS and 1A DG fails to start on SIAS
- C. 11 CS pump is OOS , 13 SRW pump is OOS. 11 SRW pump fails to start on SIAS and and 14A 480V breaker trips
- D. 13 CAC is OOS, and CS PMP B fails to start and 1A D/G trips when started on SIAS

Answer: A

### Answer Explanation:

11 CAC is OOS, and CS pump A fails to start and CS pump B trips when started - this would leave you with three CACs which will maintain CNTMT temperature/pressure below design. Correct

13 CAC is OOS and 1A DG fails to start on SIAS - this would leave one CAC and one spray pump which would not meet minimum DBA. Incorrect

13 CAC is OOS, and CS pump B fails to start and 1A D/G trips when started on SIAS - this would leave No Spray pumps and 1 CAC which would not meet requirements. Incorrect

11 CS is OOS , 13 SRW pump is OOS. 11 SRW pump fails to start on SIAS and and 14A 480V breaker trips - this would leave 1 Spray pump and one CAC which is not above minimum. Incorrect

Question 41 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	3.00
System ID:	50343
User-Defined ID:	Q50343
Cross Reference Number:	Q20397
Topic:	Which combination of CACs & CS Pumps will maintain Containment Temp & Press?
RO Importance:	3.7
SRO Importance:	4.1
KA Number:	35026K404
Comments:	Modified from Q 20397 : <b>Comprehensive/Analysis</b>  References ECCS Lesson Pan LOI-052-3-3 Slides 73-77

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

	026 Containment Spray	K4.04 - <b>Knowledge of CSS design feature(s) and/or interlock(s) which provide for the following:</b> Reduction of temperature and pressure in containment after a LOCA by condensing steam, to reduce radiological hazard, and protect equipment from corrosion damage (spray)	3. 7
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# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

42

ID: Q50345

Points: 1.00

Following a LOCA, instrument air has been isolated to the containment due to a CIS. What effect does this have on the continued use of the Containment Spray System to cool the containment? (Assume no operator actions)

- A. Both spray flowpaths are no longer available as the spray header CVs have failed closed on a loss of air.
- B. No effect since the Containment Spray CVs would be supplied by Saltwater Air Compressors.
- C. No effect, each spray header CV fails open on a loss of air to ensure the flowpath remains available.
- D. No effect, the spray header CVs have keyswitches that override valves open to ensure the flowpath remains available.

Answer: C

## Answer Explanation:

A is incorrect: Containment Spray CVs fail open on loss of IA

B is incorrect: The SWAC will not supply the spray CVs unless action is taken to override IA-2085 open

C. Correct, since each spray CV fails open

D, Incorrect, there is no override switch for the spray CVs , there is an override switch for the IA containment isolation valve

The candidate must know that the CVs fail open on loss of air. Also, the candidate needs to know that there is no override switch for these CVs. A misconception is plausible about this since there are override switches for various components that receive a CIS including the IA - containment isolation valve. However action is required by the operator to override the containment air isolation valve open. The SWAC will start on SIAS and supply air to components in containment, but only if the IA containment isolation valve is overridden open.

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

Question 42 Info				
Question Type:	Multiple Choice			
Status:	Active			
Always select on test?	No			
Authorized for practice?	No			
Points:	1.00			
Time to Complete:	2			
Difficulty:	2.00			
System ID:	50345			
User-Defined ID:	Q50345			
Cross Reference Number:	Q20409			
Topic:	What effect does lost of Air have on Containment Spray CVs?			
RO Importance:	2.7			
SRO Importance:	2.9			
KA Number:	35026K202			
Comments:	<p>Bank Question : <b>Fundamental/Memory</b></p> <p>References:            Drwg 60-617-B Sh. 33            AOP 7D attachment 1, 2, 3            Lesson Plan LOI-052-3-3 Slides 16, 21 , 24</p> <p>Basis: Instrument Air Isolated to Containment Due to CIA</p> <table border="1" data-bbox="782 1102 1496 1229"> <tr> <td>026 Containment Spray</td> <td>K2.02 --Knowledge of bus power supplies to the following: MOVs</td> <td>2 . 7 *</td> </tr> </table> <p>K/A Match analysis. The K/A addresses knowledge of bus power supplies for Containment Spray MOVs. Since CCNPP has AOVs rather than MOVs for containment spray, the important aspect of the K/A as it applies to CCNPP is to have knowledge of the effects of the air supply to these AOVs. Based on CCNPP configuration this question addresses the knowledge of the air supply to the AOVs, and thereby the intent of the K/A.</p>	026 Containment Spray	K2.02 --Knowledge of bus power supplies to the following: MOVs	2 . 7 *
026 Containment Spray	K2.02 --Knowledge of bus power supplies to the following: MOVs	2 . 7 *		

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

43

ID: Q50347

Points: 1.00

Which radiation monitor detects noble gas releases from the Atmospheric Dump Valves?

- A. Wide Range Noble Gas Monitor (RIC-5415)
- B. Main Steam Line Radiation Monitor (RE-5421)
- C. Main Vent Gaseous Monitor (RE-5415)
- D. Condenser Off-Gas Radiation Monitor (RE-1752A-D)

Answer: B

### Answer Explanation:

A. Wide Range Noble Gas Monitor (RIC-5415)--incorrect, monitors Main Vent stack.

B. Main Steam Line Radiation Monitor (RE-5421, 22)--correct per OM-98 sh 2.

C. Main Vent Gaseous Monitor (RE-5415)--incorrect, monitors Main Vent stack.

D. Condenser Off-Gas Radiation Monitor (RE-1752A-D)--incorrect, these monitor the CAR suctions.

It is plausible for a candidate to choose the wide range noble gas or main vent gaseous monitor since they both monitor the plant stack for releases during accident conditions. Further, during the performance of EOP-0 Radiation Levels external to containment (RLEC), the main vent gaseous and the Wide Range Noble Gas monitors are both checked to determine that the RLEC safety function is satisfied. Since they are checked during RLEC, a candidate could have a misconception that since RLEC is based on various releases from the plant including ADVs, they may be used to monitor for releases from ADVs. Also, since the ADVs relieve to the Auxiliary building roof they may have the misconception that the releases could be picked up by the plant ventilation stack monitors.

Question 43 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	2
Difficulty:	1.00
System ID:	50347
User-Defined ID:	Q50347
Cross Reference Number:	Q20605
Topic:	Rad monitoring for ADVs
RO Importance:	2.7
SRO Importance:	2.7
KA Number:	34039A109
Comments:	Bank Question Used 7/2002 NRC exam : <b>Fundamental/Memory</b>  References



# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

	039 Main and Reheat Steam	A1.09 – Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the MRSS controls including: Main steam line radiation monitors	2.5 *
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# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

44

ID: Q50348

Points: 1.00

Unit 2 is starting up from a refueling outage and has stabilized power at 440 MWE to perform an NI calibration prior to raising power to full power. The following indications are noted:

TBV 2-MS-3946-CV fails open  
Electrical MWs lowering  
Tave- Tref Alarm

Which of the following actions AND reasons are correct for the conditions given:

- A. Raise turbine load then insert CEAS, to stop reactor power rise.
- B. Lower turbine load then withdraw CEAS, to restore Tcold to program.
- C. Raise turbine load then insert CEAs, to maintain power < 5%
- D. Lower turbine load then withdraw CEAS, to maintain reactor power

Answer: D

### Answer Explanation:

A. Incorrect, (+ MTC) exists and TBV failing open would lower power  
B. Incorrect, withdrawing CEAS to control temperature is not sanctioned by AOP 7K  
C. Incorrect, Per AOP7K, caution, for + MTC overcooling event a positive reactivity addition will be needed to maintain power after temperature has been stabilized with turbine

D. Correct per AOP 7K

The conditions given in the stem state that this is a startup after a refueling outage. With the current fuel loading that CCNPP uses and has been using for several years, a positive MTC will exist up to about 70% power (620 MWE). With a positive MTC a TBV failing open will cause Tcold to lower which will cause power to lower. Per our procedures once the temperature mismatch has been corrected by lowering turbine load, a positive reactivity addition will be necessary to stabilize power.

It is plausible for a candidate to chose to maintain power < 5% since a step in AOP7K says that if power lowers to less than 5% then maintain it there. Since we are at 49% power, a failed open TBV should not cause power to go to ~ 5%. It is also plausible to chose withdraw CEAs to restore Tcold, since Tcold will be lowering and if a candidate does not understand that he must match secondary power to primary power to stabilize temperature then he will get this incorrect. If a candidate does not recognize that for the conditions given he has a positive MTC, then he might choose A or B.

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

Question 44 Info				
Question Type:	Multiple Choice			
Status:	Active			
Always select on test?	No			
Authorized for practice?	No			
Points:	1.00			
Time to Complete:	4			
Difficulty:	2.00			
System ID:	50348			
User-Defined ID:	Q50348			
Cross Reference Number:				
Topic:	Given conditions , parameter values and/or indications , determine the effects on plant operations a			
RO Importance:	4.1			
SRO Importance:	4.3			
KA Number:	2143			
Comments:	<p>New Question : <b>Comprehensive/Analysis</b></p> <p>Reference AOP-7K page 5, 9, 10</p> <table border="1" data-bbox="781 946 1486 1106"> <tr> <td>039 Main and Reheat Steam</td> <td>2.1.43 – Ability to use procedure to determine the effects on reactivity of plant changes, such as reactor coolant system temperature, secondary plant, fuel depletion, etc.</td> <td>4.1</td> </tr> </table>	039 Main and Reheat Steam	2.1.43 – Ability to use procedure to determine the effects on reactivity of plant changes, such as reactor coolant system temperature, secondary plant, fuel depletion, etc.	4.1
039 Main and Reheat Steam	2.1.43 – Ability to use procedure to determine the effects on reactivity of plant changes, such as reactor coolant system temperature, secondary plant, fuel depletion, etc.	4.1		

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

45

ID: Q50349

Points: 1.00

Unit 2 is operating at 72% power with only one SGFP running and the following conditions exist:

- SGFP suction flow rate is 17,500 gpm
- SGFP speed is 5175 RPM
- SGFP bias setting at 5.25
- SGFP suction pressure is 255 PSIG

What action is required to be taken to allow continued operation?

- A. Start another condensate pump to raise SGFP suction pressure
- B. Reduce reactor power to raise SGFP suction pressure.
- C. Lower SGFP speed to within specifications.
- D. Lower bias setting to 5.0 to prevent S/G overfeed.

Answer: C

### Answer Explanation:

A. Incorrect, suction pressure minimum for a single pump is 255 psig, no action required to raise suction pressure.

B. Incorrect - U-2 SGFP suction pressure minimum for single pump operation above 440 MWE is 255 psig per AOP-3G-2.

C. Correct - Maximum speed allowed for these plant conditions is 5100 RPM per AOP-3G-2

D. Incorrect- There is no specific guidance mandating BIAS setting reduction under these conditions. While BIAS setting of 4.8 - 5.0 is normal under OI-12A, you are allowed to adjust BIAS under transient conditions as necessary.

Question 45 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	4
Difficulty:	2.00
System ID:	50349
User-Defined ID:	Q50349
Cross Reference Number:	CRO-103-2-4-12
Topic:	Evaluate conditions for 1 SGFP operation
RO Importance:	3.0
SRO Importance:	3.3
KA Number:	34059A207
Comments:	Modified from Q24634: <b>Comprehensive/Analysis</b>  References: OI-12A page 10 & 11, AOP-3G page 9

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

	059 Main Feedwater	<b>A2.07 – Ability to (a) predict the impacts of the following malfunctions or operations on the MFW; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Tripping of MFW pump turbine</b>	3.0*
<p>K/A Match Analysis- The important aspects of this K/A as applies to CCNPP are to be able to predict those operations and/ or malfunctions that will result in tripping a Main Feedwater pump and determine the actions to take to prevent this from occurring. In the conditions given in the stem of this question there are two items which if not corrected could directly lead to trip of the Main Feedwater pump, and the other two could indirectly lead to a trip. They are speed and suction pressure, While neither is at the trip setpoint as of yet, if they continue to degrade the impact of continued operation in this condition could be a trip of the feed pump. In this case for these conditions the candidate needs to determine that the speed is above the maximum for the conditions and needs to adjust the speed to less than or equal to 5100 RPMs to preclude the possibility of a feed pump tripping.</p>			

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

46

ID: Q50351

Points: 1.00

When a SGFP is in Direct Governor Valve control what does the Operator Control Station (OCS) demand indicate?

- A. Displays % output demand to the HP & LP governor valves of that SGFP.
- B. Displays speed demand signal from DFWCS to the Lovejoy system for that SGFP
- C. Displays % output demand to the HP governor valve ONLY of that SGFP.
- D. Displays speed demand signal from Lovejoy for that SGFP.

Answer: A

**Answer Explanation:**

A. - Correct, Per OI-12A Sec 6.18

B. - Incorrect, These indications are seen when in HIC control

C.- Incorrect, Much of SGFP operating range utilizes only LP valves so both valves must receive control signal

D.- Incorrect, Lovejoy does not send speed demand signal to DFWCS

Question 46 Info		
Question Type:	Multiple Choice	
Status:	Active	
Always select on test?	No	
Authorized for practice?	No	
Points:	1.00	
Time to Complete:	4	
Difficulty:	2.00	
System ID:	50351	
User-Defined ID:	Q50351	
Cross Reference Number:	CRO-103-1-6-04	
Topic:	Indication on OCS demand RPM when in direct governor valve control	
RO Importance:	2.5	
SRO Importance:	2.6	
KA Number:	34059A304	
Comments:	Modified from Q24612: Fundamental/Memory References: LOI-045E-1-1 Slide 131	
	059 Main Feedwater	A3.04 – Ability to monitor automatic operation of the MFW, including: Turbine driven feed pump
		2.5*

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

47

ID: Q50354

Points: 1.00

Unit 2 was operating at 100% power when a Condensate Header rupture occurs which requires a reactor trip. After the trip S/G levels are being controlled with #22 AFW pump. Subsequently a loss of Instrument Air occurs. What is the effect on the plant over the next hour ? **Assume no operator action taken**

- A. RCS temperatures will lower due to the operating AFW pump speed rising to the maximum governor setting AND the FCV going to full open
- B. RCS temperatures will rise due to the operating AFW pump tripping on overspeed.
- C. RCS temperatures will rise due to S/G levels lowering due ONLY to AFW pump Steam Supply valves shutting.
- D. RCS temperatures will lower due to S/G levels rising due ONLY to the AFW flow control valves failing full open.

Answer: A

### Answer Explanation:

A. Correct, Per OI-32A and OM 801. AFW pump goes to maximum speed and the flow control valves fail open.

B. Incorrect, Per OI-32A Sect. 5.0 the AFW pump does not overspeed on loss of air, only goes to maximum speed.

C. Incorrect, AFW steam driven pumps steam valves fail open , not shut per OM 801 Sht 1

D. Incorrect, While the control valves do fail open, they are not the ONLY reason for the overfeed, the AFW pump at maximum speed is also a factor.

Question 47 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	2.00
System ID:	50354
User-Defined ID:	Q50354
Cross Reference Number:	
Topic:	Evaluate the effect of a loss of operating air on the AFW system components.
RO Importance:	4.4
SRO Importance:	4.6
KA Number:	34061K301
Comments:	New Question : <b>Comprehensive/Analysis</b>  Reference AFW Lesson Plan LOI-036A-1 LP slides 117 , 118, 119, 125



# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

	061 Auxiliary/Emergen cy Feedwater	K3.01 – Knowledge of the effect that a loss or malfunction of the AFW will have on the following: RCS	4 . 4
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# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

48

ID: Q50614

Points: 1.00

Unit one is in Mode 6 performing a fuel shuffle in accordance with the refueling procedures. The refueling machine is being moved to the upender to retrieve a fuel assembly when MCC-105 is lost. Which of the following is a correct action for the refueling machine?

- A. The bridge and trolley brakes are automatically released, then move the bridge & trolley by handwheel to the upender.
- B. The bridge and trolley brakes must be manually released, then move the bridge & trolley by hand to the South pool.
- C. The hoist brakes must be manually released, then manually lower the hoist by handwheel to pick up the fuel assembly.
- D. The hoist brakes are released automatically, then manually lower the hoist by handwheel to pick up the fuel assembly.

Answer: B

## Answer Explanation:

A. The bridge and trolley brakes are automatically released, then move the bridge & trolley by handwheel to the upender.-- Incorrect, the brakes must be manually released, also manual operation of the hoist should only be used to place a fuel assembly in a safe location.

B. The bridge and trolley brakes must be manually released, then move the bridge & trolley by handwheel to the South pool. --- Correct per OI 25C, the brakes must be manually released, then the bridge and trolley can be moved by handwheel

C. The hoist brakes must be manually released, then manually lower the hoist by handwheel to pick up the fuel assembly.- Incorrect, manual operation of the hoist should only be used to place a fuel assembly in a safe location

D. The hoist brakes are released automatically, then manually lower the hoist by handwheel to pick up the fuel assembly.-- Incorrect, the brakes must be manually released, manual operation of the hoist should only be used to place a fuel assembly in a safe location

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

Question 48 Info				
Question Type:	Multiple Choice			
Status:	Active			
Always select on test?	No			
Authorized for practice?	No			
Points:	1.00			
Time to Complete:	2			
Difficulty:	2.00			
System ID:	50614			
User-Defined ID:	Q50614			
Cross Reference Number:	Q14498			
Topic:	refueling machine operation when power is lost			
RO Importance:	2.8			
SRO Importance:	3.7			
KA Number:	2141			
Comments:	<p>New Question : <b>Comprehensive/Analysis</b></p> <p>References OI-25C</p> <table border="1" data-bbox="768 946 1470 1017"> <tr> <td>062 AC Electrical Distribution</td> <td>2.1.41 – Knowledge of the refueling process</td> <td>2.8</td> </tr> </table>	062 AC Electrical Distribution	2.1.41 – Knowledge of the refueling process	2.8
062 AC Electrical Distribution	2.1.41 – Knowledge of the refueling process	2.8		

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

49

ID: Q50358

Points: 1.00

Unit-1 has experienced a Loss of Offsite Power. Operators have implemented the appropriate Emergency Operating procedure. During plant stabilization a SIAS actuates due to low pressurizer pressure, and currently D/G 1B is loaded to 3630 KW.

Which of the following is correct for these conditions? (Assume NO operator actions)

- A. GEN FLD LOSS REVERSE PWR UNDER FREQ alarms AND the D/G output breaker trips.
- B. 1B DG POT VOLT FREQ LO alarms due to low frequency
- C. 1B DG POT VOLT FREQ LO alarms due to low voltage
- D. 1B Diesel Generator ENGINE EXCTR SHUTDOWN alarms due to exciter shutdown.

Answer: B

## Answer Explanation:

B is correct per EOP-2 step IV.P.1 and basis

A, C, D not consistent with EOP 2 Basis, however action must be taken immediately to bring load less than 3600 KW

A. GEN FLD LOSS REVERSE PWR UNDER FREQ alarms AND the D/G output breaker trips.. -- Incorrect, the output breaker will not trip on underfrequency because the D/G is running in emergency mode.

B. 1B DG POT VOLT FREQ LO Alarm due to low frequency- Correct, as the D/G is overloaded and running in the isynchronous mode, it will try to maintain load up to the limits of its fuel rack setting, then it will lower in speed and the low frequency alarm will come in.

C. 1B DG POT VOLT FREQ LO Alarm due to low voltage-- Is Incorrect, the D/G voltage regulator will maintain voltage at the setpoint. Since no operator action is taken to adjust voltage it will maintain voltage.

D. 1B Diesel Generator ENGINE EXCTR SHUTDOWN alarm due to exciter shutdown-- Is incorrect, since the diesel will lower its speed, the frequency will lower but the exciter will maintain excitation so the exciter will not shutdown.

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

Question 49 Info				
Question Type:	Multiple Choice			
Status:	Active			
Always select on test?	No			
Authorized for practice?	No			
Points:	1.00			
Time to Complete:	4			
Difficulty:	2.00			
System ID:	50358			
User-Defined ID:	Q50358			
Cross Reference Number:	Q42248			
Topic:	EDG response to overload			
RO Importance:	4.1			
SRO Importance:	4.4			
KA Number:	36062K102			
Comments:	<p>Modified from Q42248 : New Question :  <b>Comprehensive/Analysis</b></p> <p>References : EOP-2 page 38                      EOP -2 Basis page 37</p> <table border="1" data-bbox="773 978 1478 1138"> <tr> <td>062 AC Electrical Distribution</td> <td>K1.02- Knowledge of the physical connections and/or cause effect relationships between the ac distribution system and the following systems: ED/G</td> <td>4.1</td> </tr> </table>	062 AC Electrical Distribution	K1.02- Knowledge of the physical connections and/or cause effect relationships between the ac distribution system and the following systems: ED/G	4.1
062 AC Electrical Distribution	K1.02- Knowledge of the physical connections and/or cause effect relationships between the ac distribution system and the following systems: ED/G	4.1		

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

50

ID: Q50359

Points: 1.00

Given the following:

Unit 1 is operating at 100% power  
A loss of 12 DC bus occurs

Which of the following describes the effect of the loss of 12 DC Bus? ( Assume No operator actions)

- A. 1B D/G start solenoids fail open AND SRW CV fails open
- B. 1B D/G control power loses power AND TCBs 1, 2, 5, 6 trip
- C. 1B D/G field flash AND control power lose power.
- D. 1B D/G start solenoids fail open AND TCBs 3, 4, 7, 8 trip

Answer: C

### Answer Explanation:

- A. 1B D/G start solenoids fail open AND SRW CV fails open - Not Correct Start Solenoids fail shut
- B. 1B D/G control power loses power AND TCBs 1, 2, 5, 6 trip - Not Correct- TCBs 3,4,7,8 trip
- C. 1B D/G field flash AND control power lose power. Correct
- D. 1B D/G start solenoids fail open AND TCBs 3, 4, 7, 8 trip - Not Correct - start solenoids fail shut

Question 50 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	50359
User-Defined ID:	Q50359
Cross Reference Number:	
Topic:	Affect on D/G for loss of DC power
RO Importance:	2.7
SRO Importance:	3.2
KA Number:	36063K102
Comments:	NEW Question : <b>Fundamental/Memory</b>  Reference: AOP7J page 80

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

	063 DC Electrical Distribution	K1.02 – Knowledge of the physical connections and/or cause effect relationships between the DC electrical system and the following systems:Ac electrical system	2 . 7
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# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

51

ID: Q50361

Points: 1.00

Unit 1 was operating at 100% power when a SIAS occurred with a loss of 11 4KV BUS. Which of the following statements is correct for these conditions?

- A. 1A D/G will trip on Low -Low lube oil pressure OR High Crankcase pressure
- B. 1A D/G will trip on Lube Oil Temp High-High OR Engine Overspeed
- C. 1A D/G will trip on HT Cooling Water Pressure Low OR generator overvoltage
- D. 1A D/G will trip on Low - Low lube oil pressure OR Generator Differential Protection

Answer: D

### Answer Explanation:

A. Incorrect, While lube oil pressure low is a trip under Emergency start, Hi crank case pressure is NOT

B. Incorrect, While Engine Overspeed will under Emergency start, Lube oil temperature hi will NOT

C. Incorrect, HT water pressure is not a trip during emergency start

D. Correct, per system description 24C page 63

Question 51 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	2.00
System ID:	50361
User-Defined ID:	Q50361
Cross Reference Number:	Q15961
Topic:	1A D/G Effects of SIAS or UV on trips
RO Importance:	3.8
SRO Importance:	4.1
KA Number:	36064K401
Comments:	Modified from Q15961 : <b>Fundamental/Memory</b>  Reference Diesel Generator Lesson Plan LOI-024A-1-1 Slides 84 -90 Drawing 61086 Sheet 19A



# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

	064 Emergency Diesel Generator	K4.01 – Knowledge of ED/G system design feature(s) and/or interlock(s) which provide for the following: Trips while loading the ED/G(frequency, voltage, speed)	3 . 8
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# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

52

ID: Q20392

Points: 1.00

Unit 1 has tripped and EOP-0 is implemented. The Condenser Off-Gas (1-RE-1752), S/G Blowdown Recovery (1-RIC-4095), S/G Blowdown Recovery (1-RE-4014) radiation monitor meter indications are pegged LOW and all lights on their panels are out/dark.

What action should be performed to support the Radiation Levels External to Containment (RLEC) safety function?

- A. Shut the Steam Generator Blowdown Control Valves and report RLEC cannot be met, due to loss of power effects
- B. Shut the Steam Generator Blowdown Control Valves and report RLEC is complete
- C. Restart the sample pumps and re-evaluate the indications
- D. Attempt to clear all RMS alarms and re-evaluate the indications

Answer: A

## Answer Explanation:

A. Shut the Steam Generator Blowdown Control Valves and report RLEC cannot be met due to loss of power effects per EOP-0.- Correct

B. Report "Radiation Levels External to Containment is complete" to the CRS--incorrect, the safety function should be reported as "cannot be met, due to loss of power effects". NO-1-201, pages 25-26

C. Restart the sample pumps and re-evaluate the indications--incorrect, pumps cannot be restarted with power unavailable, as indicated by no lights on the panels energized.

D. Attempt to clear all RMS alarms and re-evaluate the indications--incorrect, alarms and indications cannot be restored with power unavailable, as indicated by no lights on the panels energized.

The cause of these indications is a loss of power to the Rad Monitors  
Distractors C is plausible since the candidate could have the misconception that the lights are out and indicators low due to a sample pump failing, which could be corrected by restarting it. He could also misconstrue these indications as those of a saturated detector. OI-35 page 15 gives actions for resetting a saturated detector which includes taking the operate switch to reset, removing a fuse and taking the switch to operate.

Distractor D is plausible since the candidate could have the misconception that a spike has occurred on or near the detector and that by clearing the alarms the system will reset and he could reevaluate the conditions. OI-35 gives actions for an RMS alarm due to a failed or degraded detector which include depressing the bypass pushbutton on the alarm display.

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

Question 52 Info				
Question Type:	Multiple Choice			
Status:	Active			
Always select on test?	No			
Authorized for practice?	No			
Points:	1.00			
Time to Complete:	2			
Difficulty:	2.00			
System ID:	50362			
User-Defined ID:	Q20392			
Cross Reference Number:				
Topic:	Given conditions associated with RMS, identify the actions to support RLEC Safety Function			
RO Importance:	2.5			
SRO Importance:	2.9			
KA Number:	37073A201			
Comments:	<p>Bank Question : <b>Comprehensive/Analysis</b></p> <p>Used 7/2002 NRC exam</p> <p>References: EOP-0 page 17 EOP-0 basis page 28 NO-1-201, pages 25-26</p> <table border="1" data-bbox="768 1074 1478 1393"> <tr> <td>073 Process Radiation Monitoring</td> <td>A2.01 – Ability to (a) predict the impacts of the following malfunctions or operations on the PRM system; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Erratic or failed power supply</td> <td>2.5</td> </tr> </table>	073 Process Radiation Monitoring	A2.01 – Ability to (a) predict the impacts of the following malfunctions or operations on the PRM system; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Erratic or failed power supply	2.5
073 Process Radiation Monitoring	A2.01 – Ability to (a) predict the impacts of the following malfunctions or operations on the PRM system; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Erratic or failed power supply	2.5		

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

53

ID: Q50363R

Points: 1.00

Unit 1 is at operating at 75% power with normal SW pump alignment. 14 4KV bus is deenergized due to a breaker fault. The appropriate AOP is entered and plant stabilizing actions are performed. When 13 SW is started it seizes and the breaker trips. Which of the following is required for the listed conditions?

- A. Commence a power reduction Per OP-3, Normal Power Operation
- B. Trip the Reactor and Implement EOP-0, Post Trip Immediate Actions
- C. Cross-connect SRW through 13 SRW pump suction and discharge
- D. Line up the SW system to use the Emergency Return Discharge Header

Answer: C

**Answer Explanation:**

- A. Incorrect, no parameters require a power reduction
- B. Incorrect, This action is fro when both SW headers are lost
- C. Correct, per AOP 7A with only one SW header in operation, X connect SRW is the guidance provided
- D. Incorrect, This action is not supported by system design, 11 HDR must be down to do this.

Question 53 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	0
Difficulty:	1.00
System ID:	50363
User-Defined ID:	Q50363R
Cross Reference Number:	CRO-113-2-5-11
Topic:	Unit 1 is at 75% power, when 12 SW Pump trips. What actions are required
RO Importance:	3.5
SRO Importance:	3.7
KA Number:	34076A201
Comments:	Modified from CRO-113-2-5-11: <b>Comprehensive/Analysis</b> References : AOP-7A pages 12, 19 AOP-7A Basis page 10  Action Taken When Unit1at 75% Power When 12 SW Pump trips and one header operating

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

	076 Service Water	A2.01 – Ability to (a) predict the impacts of the following malfunctions or operations on the SWS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Loss of SWS	3. 5*
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# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

54

ID: Q50364

Points: 1.00

Unit -1 is operating at 100% power when Instrument Air System pressure decreases to 96 psig. Which of the following is correct?

- A. Loss of Power to an IA dryer has occurred.
- B. Standby Air Compressor has picked up
- C. Plant Air to I/A X-Conn, 1-IA-2061-CV has opened
- D. Both dryers are in service due to low IA pressure

Answer: A

### Answer Explanation:

- A. Correct per Alarm Manual for Window K-26
- B. Incorrect, STBY compressor starts @ 93 PSIG Per AOP7D section III.C notes
- C. Incorrect, This CV opens @ 88 psig per AOP 7B section III C. notes
- D. Incorrect, Pressure is 96 not 93 psig

Deleted

Question 54 Info				
Question Type:	Multiple Choice			
Status:	Active			
Always select on test?	No			
Authorized for practice?	No			
Points:	1.00			
Time to Complete:	3			
Difficulty:	3.00			
System ID:	50364			
User-Defined ID:	Q50364			
Cross Reference Number:				
Topic:	Monitor IA and identify required actions			
RO Importance:	3.1			
SRO Importance:	3.2			
KA Number:	38073A301			
Comments:	NEW Question: <b>Comprehensive/Analysis</b>  References : 1C-13 Alarm Manual page 48-50 Compressed Air Lesson Plan- LOI-019-1-2 Slides 62, 63			
	<table border="1"><tr><td>078 Instrument Air</td><td>A3.01 – Ability to monitor automatic operation of the IAS, including: Air pressure</td><td>3.1</td></tr></table>	078 Instrument Air	A3.01 – Ability to monitor automatic operation of the IAS, including: Air pressure	3.1
078 Instrument Air	A3.01 – Ability to monitor automatic operation of the IAS, including: Air pressure	3.1		

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

55

ID: Q50365

Points: 1.00

Which of the following system configurations must exist to allow resetting CIS from the Control Room?

- A. 1-CC-3832, CC CNTMT Supply Vlv HS must be in Shut and 1-IA-2080 MOV OVERRIDE HS must be in Override
- B. 1-CC-3832, CC CNTMT Supply Vlv HS must be in Shut and 1-IA-2080 MOV must be in shut
- C. 1-PA-1040, Plant Air CNTMT Isolation Vlv HS must be in Shut and 1-IA-2080 MOV OVERRIDE HS must be in Normal
- D. 1-CPA-1410-CV, CNTMT Purge Supply Vlv HS must be in Shut, and CNTMT Purge EXH Fan must be in OFF

Answer: B

## Answer Explanation:

EOP Attachment 4 provides a list of the components that actuate on CIS, and provides an asterisk for those components that must have their handswitch in the POst Accident position to enable resetting CIS from the control room.

A Incorrect, 1-IA-2080 MOV override ( 1-HS-208A) must be in normal - Is plausible since it does get a CIS signal to close, the H/S is normally in normal. Candidate needs to recall the normal position of the handswitch. He could have a misconception that this H/S must be in normal position to reset since it is in normal.

B. Correct per EOP Attach 4

C. Incorrect, 1- PA-1040 is an administratively controlled valve., PA-1040 is for plant air containment isolation, and is administratively controlled. Candidate could have the misconception that since IA CV has a handswitch for overriding then the PA 1040 should have one too. Candidate has to recall the unique arrangement of plant air to containment in that PA-1040 is inside containment and if it is open then 1044 must be shut.

D. Incorrect, While 1- CPA-1410 CV receives a CIS signal, its status does not effect reset from control room, purge exhaust fan receives a CRS not CIS per LD 58. Candidate could have the misconception that this CV (Containment Purge SUPP) H/S needs to be in shut in order to reset CIS since it gets a CIS signal.

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

Question 55 Info					
Question Type:	Multiple Choice				
Status:	Active				
Always select on test?	No				
Authorized for practice?	No				
Points:	1.00				
Time to Complete:	3				
Difficulty:	3.00				
System ID:	50365				
User-Defined ID:	Q50365				
Cross Reference Number:					
Topic:	Given a CIS conditions, parameter values and/or indications determine the appropriate response				
RO Importance:	3.1				
SRO Importance:	3.7				
KA Number:	35103K406				
Comments:	<p>New Question : <b>Fundamental/Memory</b></p> <p>EOP Attachment 4 page 1 &amp; 2, LD-58</p> <table border="1" data-bbox="781 953 1495 1108"> <tr> <td>103 Containment</td> <td>K4.06 –Knowledge of containment system design feature(s) and/or interlock(s) which provide for the following: Containment isolation system</td> <td>3. 1</td> </tr> </table>		103 Containment	K4.06 –Knowledge of containment system design feature(s) and/or interlock(s) which provide for the following: Containment isolation system	3. 1
103 Containment	K4.06 –Knowledge of containment system design feature(s) and/or interlock(s) which provide for the following: Containment isolation system	3. 1			



# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

56

ID: Q50366

Points: 1.00

Given the following:

- Unit is operating at 100% power.
- An event occurs
- You are standing next to 1C-15 and the CRS directs you to manually trip the Reactor
- You press two (2) Reactor Trip PBs on 1C-15

Which ONE of the following describes the effect on the Reactor Trip Switchgear?

Reactor Trip Switchgear Breakers....

- A. 1, 2, 5, and 6 OPEN; reactor trip occurs
- B. 3, 4, 7, and 8 OPEN; reactor trip occurs
- C. 1, 4, 5, and 8 OPEN, reactor trip occurs
- D. 2, 3, 6 and 7 OPEN; reactor trip occurs

Answer: D

### Answer Explanation:

- A. 1, 2, 5, and 6 OPEN; reactor trip occurs.- Incorrect combination & panel
- B. 3, 4, 7, and 8 OPEN; reactor trip occurs.- incorrect combination & panel
- C. 1, 4, 5, and 8 OPEN; reactor trip occurs.-correct combination wrong panel
- D. 2, 3, 6 and 7 OPEN; reactor trip occurs.- Correct for K 2 & 3 from 1C-15

Question 56 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	3.00
System ID:	50366
User-Defined ID:	Q50366
Cross Reference Number:	
Topic:	Analyze effects of Rx Trip Bkrs open
RO Importance:	4.0
SRO Importance:	4.1
KA Number:	31001K614
Comments:	NEW Question: <b>Fundamental/Memory</b>  Reference : RPS Lesson Plan LOI-058-1-2 (RPS part 1) slides 50 , 73, 76, 77, 78

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

	001 Control Rod Drive	K6.14- <b>Knowledge of the effect of a loss or malfunction on the following CRDS components:</b> Location and interpretation of reactor trip breaker	4.0
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# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

57

ID: Q50368

Points: 1.00

Which of the following describes the PZR level on 1-LI-103?

- A. When drawing a bubble in Mode 5, 1-LI-103 will read higher than 1-LIC-110X and 1-LIC110Y.
- B. When drawing a bubble in Mode 5, 1-LI-103 will read lower than 1-LIC-110X and 1-LIC110Y.
- C. At NOP/NOT, 1-LI-103 will read lower than 1-LIC-110X and 1-LIC110Y.
- D. At NOP/NOT, 1-LI-103 will read the same as 1-LIC-110X and 1-LIC110Y.

Answer: B

**Answer Explanation:**

When drawing a bubble in Mode 5, 1-LI-103 will read lower than 1-LIC-110X and 1-LIC110Y is correct, because 1-LIC-110X and 1-LIC110Y are calibrated for NOP/NOT conditions and as the pressurizer cools the density gets greater causing the DP ( between reference leg and pressurizer) to lessen, given a higher indicated level. LI-103 is calibrated from 1TE-101 and PT-105A and will indicate correctly below 504 PSIA and 470°F.

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

Question 57 Info				
Question Type:	Multiple Choice			
Status:	Active			
Always select on test?	No			
Authorized for practice?	No			
Points:	1.00			
Time to Complete:	4			
Difficulty:	2.00			
System ID:	50368			
User-Defined ID:	Q50368			
Cross Reference Number:				
Topic:	Recall the feature of the PLCS that provides for indication of accurate level when RCS is cold			
RO Importance:	2.9			
SRO Importance:	3.2			
KA Number:	32011K407			
Comments:	<p>New Question: <b>Fundamental/Memory</b></p> <p>References RCS instrumentation Lesson Plan LOI-064A2-1 Slide 43            GFES Lesson Plan Sensors &amp; detectors LOI-301-15-3 Slide 70</p> <table border="1" data-bbox="768 1044 1471 1172"> <tr> <td>011 Pressurizer Level Control</td> <td>K4.07 – Knowledge of PZR LCS design feature(s) and/or interlock(s) which provide for the following: Cold calibrated channel</td> <td>2. 9</td> </tr> </table>	011 Pressurizer Level Control	K4.07 – Knowledge of PZR LCS design feature(s) and/or interlock(s) which provide for the following: Cold calibrated channel	2. 9
011 Pressurizer Level Control	K4.07 – Knowledge of PZR LCS design feature(s) and/or interlock(s) which provide for the following: Cold calibrated channel	2. 9		

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

58

ID: Q50369

Points: 1.00

Which NI power indication is lost on a loss of 120VAC bus 2Y02?

- A. 1C43 channel B aux excore wide range.
- B. Unit 2 Rx Reg Channel X.
- C. 1C15 channel B linear range.
- D. 2C43 channel B aux excore wide range.

Answer: A

**Answer Explanation:**

- A. Correct per ES-013 BS 2Y02
- B. Incorrect, Channel Y is lost
- C. Incorrect, 2 CIS Channel B is lost not 1C-15 (2C-15)
- D. Incorrect, This would occur on loss of 1Y01

Question 58 Info				
Question Type:	Multiple Choice			
Status:	Active			
Always select on test?	No			
Authorized for practice?	No			
Points:	1.00			
Time to Complete:	2			
Difficulty:	1.00			
System ID:	50369			
User-Defined ID:	Q50369			
Cross Reference Number:	CRO-57-1-5-05			
Topic:	NI power indication lost due to loss of 120VAC bus 2Y02			
RO Importance:	3.3			
SRO Importance:	3.7			
KA Number:	37015K201			
Comments:	BANK Question (CRO-57-1-5-05): <b>Fundamental/Memory</b>  References: AOP-7J basis page 16, ES-013 BKR 2402 Drawing 61022E			
	<table border="1"> <tr> <td>015 Nuclear Instrumentation</td> <td>K2.01 – Knowledge of bus power supplies to the following: NIS channels, components, and interconnections</td> <td>3.3</td> </tr> </table>	015 Nuclear Instrumentation	K2.01 – Knowledge of bus power supplies to the following: NIS channels, components, and interconnections	3.3
015 Nuclear Instrumentation	K2.01 – Knowledge of bus power supplies to the following: NIS channels, components, and interconnections	3.3		

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

59

ID: Q50370

Points: 1.00

Unit one was operating at 100% power when an event occurred. The plant was tripped and EOP-0 was implemented. The appropriate optimal recovery procedure has now been implemented. The following indications are noted:

- SPDS alarm on 1(2)C06
- CSF3 (Core and RCS Heat Removal) block turns red for "CET High"

Which of the following is the Minimum conditions required to cause these indications?

- A. 2 of 4 CETs in a quadrant exceeded 625° F
- B. 1 CET in 2 of 4 quadrants exceeded 625° F
- C. 2 of 4 CETs in a quadrant exceeded 650° F
- D. 1 CET in 2 of 4 quadrants exceeded 650° F

Answer: C

### Answer Explanation:

page 2 provides a quadrant display of four highest CETs in each quadrant

- a. Yellow alarms for > 625°F
- b. Red alarms for > 650°F

CSF3 red 2 alarm if 2/4 CETs in a quadrant exceed 650°F

- a. SDPS alarm on 1(2)C03
- b. CSF3 block turns red for "CET High"

Question 59 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	2.00
System ID:	50370
User-Defined ID:	Q50370
Cross Reference Number:	
Topic:	Cause of CSF3 alarm
RO Importance:	3.2
SRO Importance:	3.2
KA Number:	37017K101
Comments:	New Question: <b>Fundamental/Memory</b>  Reference :SPDS screen last page of Core and RCS heat removal

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

	017 In-core Temperature Monitor	K1.01 --Knowledge of the physical connections and/or cause effect relationships between the ITM system and the following systems: Plant computer	3 . 2
	<b>Learning Objective SPDS Lesson Plan</b>  3.0 Identify the color coding scheme of the SPDS critical safety function boxes and parameters and determine when safety function parameters are invalid or at a reduced logic.		



# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

60

ID: Q50371

Points: 1.00

Each Containment Iodine Removal Unit (IRU) is \_\_\_\_\_ capacity with each unit being \_\_\_\_\_ efficient for removing Iodine. As humidity level approaches 99%, filter efficiency is \_\_\_\_\_.

- A. 50%, 90%, ~ 50%
- B. 100%, 99%, ~ 90%
- C. 100%, 90%, ~ 50%
- D. 50%, 99%, ~ 90%

Answer: D

**Answer Explanation:**

D. Correct - (1) Each IRU is 50% capacity, with each unit being 99% efficient for removing Iodine, (2) as humidity level approaches 99%, filter efficiency is ~ 90% - Correct per EOP-5 basis

A. Incorrect, wrong efficiency @ 99% humidity

B. Incorrect, Wrong capacity

C. Incorrect, Wrong capacity and wrong efficiency

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

Question 60 Info				
Question Type:	Multiple Choice			
Status:	Active			
Always select on test?	No			
Authorized for practice?	No			
Points:	1.00			
Time to Complete:	2			
Difficulty:	2.00			
System ID:	50371			
User-Defined ID:	Q50371			
Cross Reference Number:				
Topic:	Given conditions, parameter values and/or indications associated with the Containment Iodine Removal			
RO Importance:	3.1			
SRO Importance:	3.4			
KA Number:	35027K501			
Comments:	<p>New question : <b>Fundamental/Memory</b></p> <p>Reference : EOP-5 basis Page 66</p> <table border="1" data-bbox="781 953 1491 1081"> <tbody> <tr> <td>027 Containment Iodine Removal</td> <td>K5.01 – <b>Knowledge of the operational implications of the following concepts as they apply to the CIRS: Purpose of charcoal filters</b></td> <td>3 . 1 *</td> </tr> </tbody> </table>	027 Containment Iodine Removal	K5.01 – <b>Knowledge of the operational implications of the following concepts as they apply to the CIRS: Purpose of charcoal filters</b>	3 . 1 *
027 Containment Iodine Removal	K5.01 – <b>Knowledge of the operational implications of the following concepts as they apply to the CIRS: Purpose of charcoal filters</b>	3 . 1 *		

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

61

ID: Q50373

Points: 1.00

Unit-1 is in EOP-1 with feedwater controls in automatic mode (feedwater regulating bypass valves are controlling level) when RCP feeder breaker, 252-1201, trips. Assume no other operator action is taken. Which of the following secondary plant parameters observed ~ 25 minutes after the RCP trips indicate a loss of RCS flow is occurring?

- A. Lowering steam flow and feed flow with rising S/G pressures
- B. Rising steam flow and feed flow with lowering S/G pressures
- C. Rising steam flow and feed flow with rising S/G pressures
- D. Lowering steam flow and feed flow with lowering S/G pressures

Answer: C

**Answer Explanation:**

Rising steam flow and feed flow with rising S/G pressures--is correct, Tave will increase, causing ADVS to open. This will cause steam flow and feed flow to rise. S/G pressures will rise as That increases.

Distractors are possible combinations of secondary plant parameters.

Deleted

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

Question 61 Info				
Question Type:	Multiple Choice			
Status:	Active			
Always select on test?	No			
Authorized for practice?	No			
Points:	1.00			
Time to Complete:	5			
Difficulty:	3.00			
System ID:	50373			
User-Defined ID:	Q50373			
Cross Reference Number:				
Topic:	Determine the core and plant parameters response to a Loss of Flow Accident.			
RO Importance:	3.5			
SRO Importance:	3.8			
KA Number:	34035A102			
Comments:	<p>Bank question used 7/2002 NRC exam :  <b>Comprehensive/Analysis</b></p> <p>References: EOP-2 basis page 16, 29 -30</p> <p>Loss of Flow Indicators in control room</p> <table border="1" data-bbox="786 1044 1491 1200"> <tbody> <tr> <td>035 Steam Generator</td> <td>A1.02 – Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the S/GS controls including: S/G pressure</td> <td>3. 5</td> </tr> </tbody> </table>	035 Steam Generator	A1.02 – Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the S/GS controls including: S/G pressure	3. 5
035 Steam Generator	A1.02 – Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the S/GS controls including: S/G pressure	3. 5		

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

62

ID: Q50374

Points: 1.00

Unit 1 is operating at 50%, at End Of Cycle (EOC). A Turbine Bypass Valve (TBV) fails partially open which causes steam flow to increase 5%. In response to rising Rx power, the RO inserts Group 5 CEAs enough to reduce power 5%. With no further operator actions, which best describes the plant's response.

- A. Reactor power will decrease temporarily then return to 50%, S/G Pressure will not change.
- B. Reactor power will decrease to a new lower value, S/G pressure will not change.
- C. Reactor power will decrease temporarily then return to 50%, S/G pressure will be lower.
- D. Reactor power will increase to a new higher value, S/G pressure will be lower.

Answer: D

## Answer Explanation:

At End of Cycle, a - MTC will exist. Therefore when the TBV fails open Tcold will lower as well as steam generator pressure. Reactor Power will rise in direction proportion to the increase in steam flow caused by the TBV failing open (~8-10%). When the operator inserts CEAS to lower power about 5%. This will result in power being higher than it was initially, and Tcold will be lower since it will not return to its pre- event value.

A. Incorrect, Steam Demand dictates power level, STM flow increases means reactor power increases- Candidate may have a misconception that power will return to its pre-event value because he does not understand the relationship between steam demand and rx power, or he does not recall that a TBV is greater than 5 % power, or both.

B. Incorrect, at EOL steam demand increase means reactor power increase. Candidate may have a misconception that power will decrease to a lower value because he does not understand the relationship between steam demand and rx power, or does not recall that at EOC we have a - MTC and reactor power will follow steam demand

C. Incorrect, Reactor Power increases due to steam demand increase. Candidate may have a misconception that power will decrease to a lower value because he does not understand the relationship between steam demand and rx power, or does not recall that at EOC we have a - MTC and reactor power will follow steam demand, and that temperature will trend toward the direction of the mismatch between primary and secondary.

D. Correct, reactor power decreases due to CEA insertion, undershoots and due to -MTC, power returns to higher value .S/G Pressure is lower due to lower Tcold.

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

Question 62 Info								
Question Type:	Multiple Choice							
Status:	Active							
Always select on test?	No							
Authorized for practice?	No							
Points:	1.00							
Time to Complete:	4							
Difficulty:	3.00							
System ID:	50374							
User-Defined ID:	Q50374							
Cross Reference Number:	302							
Topic:	TBV malfunction effect on S/G pressure							
RO Importance:	3.2							
SRO Importance:	3.3							
KA Number:	34041K301							
Comments:	<p>Modified from Bank question 302:  <b>Comprehensive/Analysis</b></p> <p>References: AOP-7K basis page 3, 7</p> <table border="1" data-bbox="781 946 1495 1053"> <tbody> <tr> <td>041 Steam</td> <td rowspan="3">K3.01 – Knowledge of the effect that a loss or malfunction of the SDS will have on the following: S/G</td> <td>3.</td> </tr> <tr> <td>Dump/Turbine</td> <td>2</td> </tr> <tr> <td>Bypass Control</td> <td>*</td> </tr> </tbody> </table>	041 Steam	K3.01 – Knowledge of the effect that a loss or malfunction of the SDS will have on the following: S/G	3.	Dump/Turbine	2	Bypass Control	*
041 Steam	K3.01 – Knowledge of the effect that a loss or malfunction of the SDS will have on the following: S/G	3.						
Dump/Turbine		2						
Bypass Control		*						

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

63

ID: Q50376

Points: 1.00

Unit 1 is operating at 100% power with Condensate Pumps 11,12 and 13 running when 12 Condensate Pump trips.

What effect will this have on the secondary and what initial steps should be taken to mitigate the consequences?

- A. Reduced feed flow to the S/Gs and lowering levels will result. Bias Feed Pump speed as required to restore S/G levels.
- B. Lower Feed Pump suction pressure will result. Verify a Condensate Booster pump automatically starts.
- C. Cavitation and increased impellar wear will occur on the Condensate Pumps. Reduce power to maintain Condensate header flow less than 8,000 GPM.
- D. Lower Condensate header pressure will exist. Place Hotwell Level Control in manual and bypass the Condensate Demins and Precoat Filters.

Answer: D

## Answer Explanation:

- A. Reduced feed flow to the S/Gs and lowering levels will result. Bias feed pump speed as required to maintain S/G levels--is **incorrect**, S/G levels should be maintained by the feed pumps and the feed reg valves automatically.
- B. Lower feed pump suction pressure will result. Verify a condensate booster pump automatically starts.--is **incorrect**, suction pressure will lower, but not to the point where the standby CBP starts.
- C. Cavitation and increased impeller wear will occur on the Condensate pumps. Reduce power to maintain condensate header flow less than 8,000 GPM.-- is **incorrect**, power reduction is not required on loss of 1 condensate pump from 100% power. This is plausible since with only two condensate pumps running the remaining pumps will be operating closer to runout conditions which means the required NPSH has increased bringing them closer to cavitation conditions. However, a power reduction is not required by procedure other measures are taken to ensure adequate suction pressure for the feed pumps, including bypassing precoats and demins. IF you have less than two condensate pumps then a reduction in power is directed by procedure
- D. Lower condensate header pressure will exist. Place hotwell level control in manual and bypass condensate demineralizers and precoat filters.--is **correct** per indications and actions in AOP-3G.

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

Question 63 Info					
Question Type:	Multiple Choice				
Status:	Active				
Always select on test?	No				
Authorized for practice?	No				
Points:	1.00				
Time to Complete:	2				
Difficulty:	3.00				
System ID:	50376				
User-Defined ID:	Q50376				
Cross Reference Number:					
Topic:	Evaluate effects of a loss of a Condensate Pump				
RO Importance:	4.0				
SRO Importance:	4.3				
KA Number:	244				
Comments:	<p>Bank Question Used 7/2002 NRC exam :  <b>Comprehensive/Analysis</b></p> <p>References: AOP-3G basis pages 9-11</p> <table border="1" data-bbox="773 981 1478 1140"> <tbody> <tr> <td>056 Condensate</td> <td>2.4.4 - Ability to recognize abnormal indications for system operating parameters that are entry-level conditions for emergency and abnormal operating procedures</td> <td>4 . 5</td> </tr> </tbody> </table>		056 Condensate	2.4.4 - Ability to recognize abnormal indications for system operating parameters that are entry-level conditions for emergency and abnormal operating procedures	4 . 5
056 Condensate	2.4.4 - Ability to recognize abnormal indications for system operating parameters that are entry-level conditions for emergency and abnormal operating procedures	4 . 5			



# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

64

ID: Q50377R

Points: 1.00

Unit 1 is operating at 100% power when a Gaseous Waste Discharge (O-RE-2191) high rad alarm is received with **NO** gaseous release in progress. Which of the following is **NOT** a probable cause of this alarm?

- A. Spent Resin Metering Tank Venting
- B. Leakage from VCT gas space through H2 lines.
- C. U-1 CVCS Ion Exchangers venting
- D. U-2 CVCS Ion Exchangers venting

Answer: B

### Answer Explanation:

Leakage from VCT gas space through H2 lines is correct per Alarm manual response for 1C-22 D-1.1 and A-5.1, **and AOP6C possible sources of Gaseous activity. Leakage from VCT gas space through H2 lines would be seen by BAST RM ( 2-RI-7010) Radiation monitor**

Spent Resin Metering Tank Venting is incorrect; this is a probable source as listed by 1C-22, D-1.1 and AOP 6C pages 6-14

Ion Exchangers venting is incorrect ; this is a probable source as listed by 1C-22, D-1.1 and AOP 6C pages 6-14

VCT Relief Valve lifting, is incorrect; this is a probable source as listed by 1C-22, D-1.1 and AOP 6C pages 6-14

Question 64 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	1
Difficulty:	2.00
System ID:	50573
User-Defined ID:	Q50377R
Cross Reference Number:	
Topic:	Most likely cause of Gaseous waste rad alarm
RO Importance:	3.3
SRO Importance:	3.5
KA Number:	39071A409
Comments:	New Question : <b>Fundamental/Memory</b>  <b>References: Alarm manual for 1C22H Page 102-103, 147-149 , and AOP 6C pages 6-14</b>  Gaseous Waste Discharge High Rad Alarm probable causes

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

	071 Waste Gas Disposal	A4.09- Ability to manually operate and/or monitor in the control room: Waste gas release rad monitors	3.3
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# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

65

ID: Q50378R

Points: 1.00

A smoke detector for the Unit-1 45' Switch Gear Room malfunctions, causing an alarm. Which one of the following describes the effect on the system and the appropriate response?

- A. "FIRE PROT PANEL 1C24B" alarm actuates and after a time delay, Halon system discharges. Reset the fire panel 1FP430 and immediately restore ventilation in the Switchgear room.
- B. "FIRE PROT PANEL 1C24B" alarm actuates and immediately results in Halon system discharge. Reset the fire panel 1FP430, do not restore ventilation in the Switchgear room until authorized by the CRS.
- C. "FIRE SYS" alarm actuates and after a time delay, Halon system discharges. Reset the fire panel 1FP430, do not restore ventilation until authorized by the CRS.
- D. "FIRE SYS" alarm actuates but does not result in Halon system discharge. Reset the fire panel 1FP430

Answer: D

## Answer Explanation:

A. "FIRE PROT PANEL 1C24B" alarm actuates and after a time delay, Halon system discharges. Reset the fire panel 1FP430 and immediately restore ventilation in the Switchgear room. - **Incorrect** per plant design and procedures

B. "FIRE PROT PANEL 1C24B" alarm actuates and immediately results in Halon system discharge. Reset the fire panel 1FP430, do not restore ventilation in the Switchgear room until authorized by the CRS. - **Incorrect** per plant design and procedures

C. "FIRE SYS" alarm actuates and after a time delay, Halon system discharges. Reset the fire panel 1FP430, do not restore ventilation until authorized by the CRS.- **Incorrect** per plant design and procedures.

D. "FIRE SYS" alarm actuates but does not result in Halon system discharge. Reset the fire panel 1FP430 - **Correct** per plant design and procedures

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

Question 65 Info				
Question Type:	Multiple Choice			
Status:	Active			
Always select on test?	No			
Authorized for practice?	No			
Points:	1.00			
Time to Complete:	3			
Difficulty:	2.00			
System ID:	50378			
User-Defined ID:	Q50378R			
Cross Reference Number:	FIRE PROTECTION 002			
Topic:	What is the effect on the system for a 45' SGR Smoke Detector malfunction?			
RO Importance:	2.7			
SRO Importance:	2.9			
KA Number:	38086A203			
Comments:	<p>Modified from 28827 : <b>Fundamental/Memory</b></p> <p>REference : 124B Alarm Manual page 88 &amp; 89 Fire System Lesson Plan</p> <table border="1" data-bbox="768 978 1470 1287"> <tr> <td>086 Fire Protection</td> <td>A2.03 – Ability to (a) predict the impacts of the following malfunctions or operations on the Fire Protection System; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Inadvertent actuation of the FPS due to circuit failure or welding</td> <td>2 . 7</td> </tr> </table>	086 Fire Protection	A2.03 – Ability to (a) predict the impacts of the following malfunctions or operations on the Fire Protection System; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Inadvertent actuation of the FPS due to circuit failure or welding	2 . 7
086 Fire Protection	A2.03 – Ability to (a) predict the impacts of the following malfunctions or operations on the Fire Protection System; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Inadvertent actuation of the FPS due to circuit failure or welding	2 . 7		

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

66

ID: Q50381R

Points: 1.00

In the event of a Control Room evacuation, what means is provided for control of the Saltwater Pumps?

- A. Remote override transfer valves in the SRW pump room.
- B. Control switches on 1C43 for 11 & 12 SW pumps
- C. Local/remote keyswitches at the pump breakers.
- D. LOCI sequencer override pushbuttons at the ESFAS cabinets.

Answer: C

### Answer Explanation:

- A. Incorrect, these valves operate other valve not electrical equipment
- B. Incorrect, Per AOP9A the local/remote key switches are used for this purpose. 1C43 is the remote shutdown panel
- C. Correct
- D. Incorrect, AOP 9A assumes no LOCI

Question 66 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	2
Difficulty:	1.00
System ID:	50381
User-Defined ID:	Q50381R
Cross Reference Number:	CRO-113-2-5-15
Topic:	In the event of a Control Room evacuation, what means is provided for control of the Saltwater Pumps
RO Importance:	3.9
SRO Importance:	3.4
KA Number:	2130
Comments:	Bank Question : <b>Fundamental/Memory</b>  References Salt Water Lesson Plan LOI-012-1-2 slides 50 - 52  Basis: Control Room Evacuation Means Provided for Control of SW Pumps References: KA1: KA2:

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

	2.1.30	Ability to locate and operate components, including local controls.	4.4	
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# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

67

ID: Q50383

Points: 1.00

Using Provided References:

Unit 2 is operating at 100 % power with 23 CCW Pump OOS. The following sequence of events occur:

- 1205 - 21 CCW Pump declared INOPERABLE due to a failed surveillance.
- 1232 - 22 CCW Pump also declared INOPERABLE due to the results of a common cause failure analysis.
- 1259 - Plant Shutdown to Mode 3 commenced.
- 1324 - 21 CCW Pump returned to OPERABLE status.
- 1343 - 22 CCW Pump returned to OPERABLE status.

Which ONE of the following describes the Technical Specification requirements for operation of the plant?

Plant conditions...

- A. allow the plant shutdown to be terminated no earlier than 1324.
- B. allow the plant shutdown to be terminated no earlier than 1332
- C. require that the Shutdown to Mode 3 is completed by 1832
- D. require that the Shutdown to Mode 3 is completed by 1932

Answer: A

### Answer Explanation:

A. allow the plant shutdown to be terminated no earlier than 1324. - Correct @ 13:24 we are back on original 72 hr clock from 1st CCW pump being OOS.

B. allow the plant shutdown to be terminated no earlier than 1332. - Incorrect- Distractor uses number 1 hour after 3.03 is entered

C. require that the Shutdown to Mode 3 is completed by 1832. - Incorrect- This would be only 6 hours after 3.03 is entered

D. require that the Shutdown to Mode 3 is completed by 1932. - Incorrect - Would be 7 hours after 3.03 if one pump not returned to service.

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

Question 67 Info					
Question Type:	Multiple Choice				
Status:	Active				
Always select on test?	No				
Authorized for practice?	No				
Points:	1.00				
Time to Complete:	5				
Difficulty:	3.00				
System ID:	50383				
User-Defined ID:	Q50383				
Cross Reference Number:					
Topic:	Given Conditions, parameter values and/or indications , apply the appropriate technical specificatio				
RO Importance:	3.4				
SRO Importance:	3.8				
KA Number:	2132				
Comments:	<p>New question : <b>Comprehensive/Analysis</b></p> <p>Reference- Technical specifications 1-3.1 through 1-3.13 and 3.7.5 -2 through 3.7.5-2</p> <table border="1"> <tr> <td>2.1.32</td> <td>Ability to explain and apply system limits and precautions</td> <td>3.8</td> <td></td> </tr> </table> <p><b>LOIT Learning Objective for ROs and SROs</b></p> <p><b>Given plant conditions and/or plant parameters related to CCW system operations and Technical Specifications, assess for required actions.</b></p>	2.1.32	Ability to explain and apply system limits and precautions	3.8	
2.1.32	Ability to explain and apply system limits and precautions	3.8			



# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

68

ID: Q50385R

Points: 1.00

Unit 2 has just completed a refueling outage and is conducting PSTP3, "Escalation to Power Test Procedure", to test at the power plateau of 85% power. At 80% it was determined that Frt is greater than the full power value of T.S 3.2.3. While reviewing the data a transient occurs and power rises to 90% and is stabilized. Which of the following is required?

- A. Reduce Thermal Power to less than or equal to 85% within 1hour
- B. Reduce Thermal Power to less than or equal to 85% within 15 minutes
- C. Reduce Thermal Power to less than or equal to 80% within 1 hour
- D. Reduce Thermal Power to less than or equal to 80% within 15 minutes

Answer: B

**Answer Explanation:**

*Deleted*

- A. Incorrect, the power level is correct but the time to reduce is wrong
- B. Reduce Thermal Power to less than or equal to 85% within 15 Mins - **Correct** per T.S. 3.1.8
- C. Incorrect, the time to reduce power and the power level are wrong
- D. Incorrect, the power level to reduce to is incorrect.

Question 68 Info				
Question Type:	Multiple Choice			
Status:	Active			
Always select on test?	No			
Authorized for practice?	No			
Points:	1.00			
Time to Complete:	4			
Difficulty:	3.00			
System ID:	50385			
User-Defined ID:	Q50385R			
Cross Reference Number:				
Topic:	Tech spec for Frt when in Physics testing			
RO Importance:	3.4			
SRO Importance:	4.1			
KA Number:	2222			
Comments:	NEW Question : <b>Comprehensive/Analysis</b>  Reference Technical Specification 3.1.8 and PST-3 page 6			
	<table border="1"> <tr> <td>2.2.22</td> <td>Knowledge of limiting conditions for operations and safety limits</td> <td>4.0</td> </tr> </table>	2.2.22	Knowledge of limiting conditions for operations and safety limits	4.0
2.2.22	Knowledge of limiting conditions for operations and safety limits	4.0		

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

69

ID: Q50384R

Points: 1.00

Unit-2 is in Hot Standby and the latest leakage reports are:

- 0.8 gpm - RCS drain valve weld leakage
- 1.8 gpm - leakage past check valves from the RCS to the SI system
- .72 gpd - primary-to-secondary leakage (57.6 gpd 21 S/G, 14.4 gpd 22 S/G)
- 2.7 gpm - total leakage.

Which of the following Technical Specification leakage limits are exceeded?

- A. Primary to Secondary leakage AND Unidentified leakage.
- B. Pressure Boundary leakage AND Unidentified leakage.
- C. Pressure Boundary leakage ONLY.
- D. Unidentified leakage ONLY.

Answer: C

### Answer Explanation:

Per Technical Specifications 3.4.13 You can Have

NO Pressure Boundary Leakage  
1 GPM unidentified Leakage  
10 GPM identified leakage  
100 GPD per S/G

- A. Primary to Secondary leakage AND Unidentified leakage.-- is incorrect because primary to secondary leakage is less than T.S. and pressure boundary is > T.S.
- B. Pressure Boundary leakage AND Unidentified leakage.-- is incorrect because Unidentified leakage is < 1 gpm.  $\{2.7-(1.8+.8=.05)=.05 \text{ gpm}\}$
- C. Pressure Boundary leakage ONLY.-- Is correct, pressure boundary leakage exists associated with the RCS drain valve weld crack
- D. Unidentified leakage ONLY.-- is incorrect is incorrect because Unidentified leakage is < 1 gpm.  $\{2.7-(1.8+.8=.05)=.05 \text{ gpm}\}$

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

Question 69 Info				
Question Type:	Multiple Choice			
Status:	Active			
Always select on test?	No			
Authorized for practice?	No			
Points:	1.00			
Time to Complete:	4			
Difficulty:	3.00			
System ID:	50384			
User-Defined ID:	Q50384R			
Cross Reference Number:	LOR-032020306-001			
Topic:	RCS leakage TS			
RO Importance:	3.9			
SRO Importance:	4.6			
KA Number:	2242			
Comments:	<p>Modified Bank Question : <b>Comprehensive/Analysis</b></p> <p>References: Technical Specification 3.4.13-1 through 3.4-13-3</p> <table border="1" data-bbox="768 946 1470 1053"> <tr> <td>2.2.42</td> <td>Ability to recognize system parameters that are entry-level conditions for Technical Specifications.</td> <td>3.9</td> </tr> </table>	2.2.42	Ability to recognize system parameters that are entry-level conditions for Technical Specifications.	3.9
2.2.42	Ability to recognize system parameters that are entry-level conditions for Technical Specifications.	3.9		

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

70

ID: Q50387

Points: 1.00

Unit 2 is performing a startup after a refueling outage. Power is currently 20% and the Turbine is in "Hold". The CRO places Steam Generator Blowdown in service at 100 GPM/SG per plant Chemistry recommendations.

Which of the following describes the immediate plant response to this evolution? (Assume no additional operator actions)

- A. Reactor power increases, letdown flow increases, feedwater flow increases.
- B. Reactor power decreases, letdown flow increases, feedwater flow decreases.
- C. Reactor power increases, letdown flow decreases, feedwater flow decreases.
- D. Reactor power decreases, letdown flow decreases, feedwater flow increases.

Answer: D

### Answer Explanation:

- A. Reactor power increases, letdown flow increases, feedwater flow increases - **Incorrect**, after refueling a + MTC exists, so increased blowdown flow will cause a lowering in power.
- B. Reactor power decreases, letdown flow increases, feedwater flow decreases- **Incorrect**, feedwater flow will increase due to the blowdown flow increasing.
- C. Reactor power increases, letdown flow decreases, feedwater flow decreases- **Incorrect**, both temperature and power will decrease,
- D. Reactor power decreases, letdown flow decreases, feedwater flow increases - **correct** + MTC at BOC which means power lowers with decreasing temperature.

Question 70 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	4
Difficulty:	4.00
System ID:	50387
User-Defined ID:	Q50387
Cross Reference Number:	
Topic:	Effects of SG Blowdown on plant parameters
RO Importance:	4.2
SRO Importance:	4.4
KA Number:	2244
Comments:	New Question: <b>Comprehensive/Analysis</b>  References : Blow Down System Lesson plan LOI-83-1-0 Slides 93, 96, 97 OI-8A REv 38 page 18

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

	2.2. 44	Ability to interpret control room indications to verify the status and operation of a system, and understand how operator actions and directives affect plant and system conditions.	4.2
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# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

71

ID: Q50388

Points: 1.00

Given the following:

The current month is April 2008

A CCNPP employee worked an outage at Ginna NPP in February 2008.

The dose received at GINNA was 750 millirem.

His TEDE radiation exposure for the year is 1550 millirem.

The remainder of his dose was received at CCNPP.

Which ONE of the following describes the MAXIMUM additional dose the employee may receive prior to exceeding his TEDE alara dose goal for the year?

- A. 700 millirem
- B. 1450 millirem
- C. 1700 millirem
- D. 2450 millirem

Answer: B

### Answer Explanation:

1450 millirem = correct

1700 millirem = incorrect, adds dose from Ginna

2450 millirem = incorrect, based on max admin limit of 4000 mr

700 millirem = incorrect, adds Ginna and based on max admin limit of 3000 mr

Question 71 Info		
Question Type:	Multiple Choice	
Status:	Active	
Always select on test?	No	
Authorized for practice?	No	
Points:	1.00	
Time to Complete:	3	
Difficulty:	1.00	
System ID:	50388	
User-Defined ID:	Q50388	
Cross Reference Number:		
Topic:	Recall important Radiation Control Limits	
RO Importance:	2.5	
SRO Importance:	3.1	
KA Number:	234	
Comments:	New Question : <b>Fundamental/Memory</b> References RP-1-100 pages 18-27	
	2.3. 4	Knowledge of radiation exposure limits under normal or emergency conditions. 3.2

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM



# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

72

ID: Q50389

Points: 1.00

For entry into a LOCKED HIGH RADIATION AREA, which of the following correctly describes ALL requirements that must be met?

- A. A Radiation Work Permit, work approved by GS-RP, Radiation Protection approval for access, Pre Job Brief, dosimetry, pre-entry verification
- B. A Radiation Work Permit, work approved by GS-RP, Radiation Protection approval for access, Pre Job Brief, dosimetry, hand held survey instrument
- C. A Radiation Work Permit, continuously indicating dose rate meter, Radiation Protection approval for access, Pre Job Brief, dosimetry, pre-entry verification.
- D. A Radiation Work Permit, continuously indicating dose rate meter, Radiation Protection approval for access, Pre Job Brief, dosimetry, hand held survey instrument

Answer: C

**Answer Explanation:**

A Special Work Permit, continuously indicating dose rate meter, Radiation Protection approval, Pre Job Brief, dosimetry, pre-entry verification = correct per RP1-100.

All others answers are not in accordance with RP-1-100

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

Question 72 Info				
Question Type:	Multiple Choice			
Status:	Active			
Always select on test?	No			
Authorized for practice?	No			
Points:	1.00			
Time to Complete:	2			
Difficulty:	2.00			
System ID:	50389			
User-Defined ID:	Q50389			
Cross Reference Number:				
Topic:	Recall radiological safety principles, such as locked high radiation area			
RO Importance:	3.2			
SRO Importance:	3.7			
KA Number:	2312			
Comments:	<p>New Question : <b>Fundamental/Memory</b></p> <p>RP-1-100 page 31</p> <table border="1" data-bbox="768 946 1470 1106"> <tr> <td>2.3.12</td> <td>Knowledge of radiological safety principles pertaining to licensed operator duties, such as containment entry requirements, fuel handling responsibilities, access to locked high-radiation areas, aligning filters, etc.</td> <td>3.2</td> </tr> </table>	2.3.12	Knowledge of radiological safety principles pertaining to licensed operator duties, such as containment entry requirements, fuel handling responsibilities, access to locked high-radiation areas, aligning filters, etc.	3.2
2.3.12	Knowledge of radiological safety principles pertaining to licensed operator duties, such as containment entry requirements, fuel handling responsibilities, access to locked high-radiation areas, aligning filters, etc.	3.2		

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

73

ID: Q50390

Points: 1.00

Unit-1 Waste Processing Ventilation Radiation Monitor (1-RE-5410) is in alarm. **All other RMS indications remain normal.**

Which of the following is the correct cause?

- A. A fuel handling event in the spent fuel pool
- B. Elevated dose rates in the ECCS pump rooms due to SDC operation
- C. Leakage from a Waste Gas Compressor
- D. Excessive packing leakage from a Charging pump

Answer: D

### Answer Explanation:

Excessive packing leakage from a Charging pump--correct per alarm response manual and operator experience

A fuel handling event in the spent fuel pool--incorrect, the SFP area monitor and Main Vent RMS indications would also be expected to rise. Is plausible since a fuel handling event could cause this monitor to alarm, however other indicators would expect to rise as well, since the stem says all other indications re normal, you don't have a confirming rad monitor indication to support this event.

Elevated dose rates in the ECCS pump rooms due to SDC operation--incorrect, ECCS pump room RMS would indicate this, WP would only increase if SDC leakage were present.

Leakage from a Waste Gas Compressor--incorrect, Main Vent and Waste Gas Equipment Room area monitors would indicate this location for leakage.

Question 73 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	2
Difficulty:	3.00
System ID:	50390
User-Defined ID:	Q50390
Cross Reference Number:	
Topic:	Knowledge of the Gaseous RMS responses to accidental Liquid Waste releases
RO Importance:	3.4
SRO Importance:	3.8
KA Number:	2313
Comments:	Bank Question Used 7/2002 NRC exam : <b>Comprehensive/Analysis</b>
	References: Alarm Response Manual 1C22 pages 52 -56

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

	2.3. 13	Knowledge of radiological safety procedures pertaining to licensed operator duties, such as response to radiation monitor alarms, containment entry requirements, fuel handling responsibilities, access to locked high-radiation areas, aligning filters, etc.	3.4
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# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

74

ID: Q50714

Points: 1.00

AFW Auxiliary Status Panel alarm "TURB SYS L/U IMPR" annunciates in the Control Room. Which of the following is a reason for this?

- A. 1-MS-3988 (12 AFW PP Trip Throttle Valve) shut.
- B. 1-HS-4070 (11 S/G AFW STM SUPP & BYPASS) in CLOSE position.
- C. 1-HS-4071 (12 S/G AFW STM SUPP & BYPASS) in OPEN position.
- D. 1-HS-4520 (11 S/G Block Valve) in CLOSE position.

Answer: B

### Answer Explanation:

The" TURB SYS L/U IMPR alarm is received for the following inputs:

- **Both** 1-MS-3986-CV and 1-MS-3988-CV being shut (Turbine Stop Throttle valves).One of them is open and the other is shut. Normally 11 AFW pump is aligned for auto initiation with its trip throttle valve open, 12 AFW pump is not aligned and its trip throttle valve is shut.
  - 11 SG AFW STM SUPP & BYPASS, 1HS-4070 in the CLOSE position ( need to be in AUTO)
  - 12 SG AFW STM SUPP & BYPASS, 1-HS-4071 in the CLOSE position (need to be in AUTO)
  - 1-HS 3986A in DISABLE position (will cause the Stop throttle valve to not trip from the control room)
  - 1-HS-3988A in DISABLE position (will cause the Stop throttle valve to not trip from the control room)
- A. 1-MS-3988 (12 AFW PP Trip Throttle Valve) shut.--**Incorrect** because this valve is normally shut. Alarm is based on if both 11 and 12 Trip Throttle Valves are shut.
  - B. 1-HS-4070 (11 S/G AFW STM SUPP & BYPASS) in CLOSE position.-- **Is correct** answer per Alarm Manual
  - C. 1-HS-4071 (12 S/G AFW STM SUPP & BYPASS) in OPEN position.-- **Incorrect** because taking this handswitch to close causes alarm, not open (per alarm manual only CLOSE position causes alarm
  - D. 1-HS-4520 (11 S/G Block Valve) in CLOSE position.-- **Incorrect.** Taking this HS to CLOSE causes "11SG L/U IMPR", not the TURB SYS L/U IMPR

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

Question 74 Info				
Question Type:	Multiple Choice			
Status:	Active			
Always select on test?	No			
Authorized for practice?	No			
Points:	1.00			
Time to Complete:	2			
Difficulty:	2.00			
System ID:	50714			
User-Defined ID:	Q50714			
Cross Reference Number:				
Topic:	Given an Alarm and condition, determine if conditions justify the alarm			
RO Importance:	4.2			
SRO Importance:	4.3			
KA Number:	2446			
Comments:	<p>New Question: <b>Memory/Fundamentals</b></p> <table border="1" data-bbox="768 917 1466 981"> <tr> <td>2.4.46</td> <td>Ability to verify that the alarms are consistent with the plant conditions</td> <td>4.2</td> </tr> </table> <p>References: Alarm Manual for 1C04 Window W-05, W-10</p>	2.4.46	Ability to verify that the alarms are consistent with the plant conditions	4.2
2.4.46	Ability to verify that the alarms are consistent with the plant conditions	4.2		

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

75

ID: Q50398

Points: 1.00

At 6am on a Saturday morning a terrorist attack has resulted in significant damage to the Control Room and Auxiliary Building and all members of the control room staff were incapacitated. Security has secured the terrorist and are attempting to coordinate activities in the Emergency Plan with Operations. In addition to the security personnel, the following onsite personnel are available :

Operations Manager (Inactive License)  
Principal Plant Operator (Non-Licensed)  
Plant Operator Instructor (Active License)  
Turbine Building watch (Non-Licensed)  
Outside Watch (Non-Licensed)

Which of the following is correct for the listed conditions concerning coordination of required actions per the ERPIP?

- A. The Principal Plant Operator is the operator in charge and will go to the Secondary Fire Brigade Locker and assume command of the site.
- B. The Operations Manager is the operator in charge and will go to the Operational Support Center and assume command of the site.
- C. The Plant Operator Instructor is the operator in charge and will go to the Secondary Fire Brigade Locker and assume command of the site.
- D. The Operations Manager is the operator in charge and will go to the Fire Brigade locker and assume command of the site.

Answer: C

### Answer Explanation:

The Plant Operator Instructor is the operator in charge and will go to the Secondary Fire Brigade Locker and assume command of the site- Correct - Per ERPIP 3.0 Attachment 27.

The Principal Plant Operator is the operator in charge and will go to the Secondary Fire Brigade Locker and assume command of the site.-- **Incorrect**, The Principal Plant Operator is the Senior non-licensed watchstander and would be in charge if there were **NO** licensed operators present, since there is a currently licensed operator present he would be the operator in charge.

The Operations Manager is the operator in charge and will go to the Operational Support Center and assume command of the site.-- **Incorrect**. The Operations Manager does not have an active license, and by procedure the highest ranking licensed operator would be in charge. Also the Operational Support Center is not the correct place per procedure to set up the command and control for these conditions.

The Plant Operator Instructor is the operator in charge and will go to the Secondary Fire Brigade Locker and assume command of the site.-- **Is Correct**, since he has an active license he would assume command and control.

# EXAMINATION ANSWER KEY

CCNPP 2008 NRC RO EXAM

The Operations Manager is the operator in charge and will go to the Fire Brigade locker and assume command of the site. **Incorrect.** The Operations Manager does not have an active license, and by procedure the highest ranking licensed operator would be in charge.

Question 75 Info				
Question Type:	Multiple Choice			
Status:	Active			
Always select on test?	No			
Authorized for practice?	No			
Points:	1.00			
Time to Complete:	2			
Difficulty:	2.00			
System ID:	50398			
User-Defined ID:	Q50398			
Cross Reference Number:				
Topic:	Identify who should become the operator in charge			
RO Importance:	3.0			
SRO Importance:	4.1			
KA Number:	2437			
Comments:	<p>New Question: <b>Comprehensive/Analysis</b></p> <p>References Per ERPIP 3.0 Attachment 27 Note.</p> <table border="1" data-bbox="778 1102 1485 1172"> <tr> <td>2.4.37</td> <td>Knowledge of the lines of authority during implementation of the emergency plan.</td> <td>3.0</td> </tr> </table>	2.4.37	Knowledge of the lines of authority during implementation of the emergency plan.	3.0
2.4.37	Knowledge of the lines of authority during implementation of the emergency plan.	3.0		