

Reference Exam

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## Questions For 2006 RO/SRO Exam

22-May-06

<b>QID:</b> 0571	<b>Rev:</b> 0	<b>Rev Date:</b> 5/3/2006	<b>Lic Level:</b> R	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	<b>Source:</b> New 2006	<b>10CFR55:</b> 41.5	<b>Tier #</b>	1	
<b>1</b>		<b>10CFR55:</b>	<b>Group #</b>	1	
<b>Taxonomy:</b> 2	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>		<b>Importance Rating</b>	3.2	
<b>System Title:</b>	Reactor Trip Recovery		<b>System Number</b>	E02	<b>K/A:</b> EK3.4

### Question:

The control room operators are implementing 2202.002 Reactor Trip Recovery following a trip from full power. The following conditions are observed by the ATCO:

- \* RCS pressure is 2150 psia and slowly rising
- \* RCS Tave is 546 °F and stable
- \* Pressurizer level is 32% and lowering

What action is required for this condition?

- A. Take manual control of SDBCS.
- B. Take manual control of charging and letdown.
- C. Enter 2202.009, Functional Recovery EOP.
- D. Enter 2202.003, Loss of Coolant Accident EOP.

### Answer:

- B. Take manual control of charging and letdown.

### Notes:

The given RCS temp/press show that there is not another event in progress.  
The lowering level is indication that there may be a problem with the automatic operation of CVCS.

### References:

2202.002 step 6

### Historical Comments:

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QID:	0594	Rev:	0	Rev Date:	5/10/2006	Lic Level:	R	RO	SRO
Sample Plan Q#	Source:	New 2006	10CFR55.41.7	Tier #	1				
2			10CFR55.	Group #	1				
Taxonomy:	2	1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis	Importance Rating	3.6					
System Title:	Pressurizer Vapor Space Accident	System Number	008	K/A:	AA2.09				

### Question:

Unit 2 is in Mode 3, NOP/NOT.

The ATCO is attempting to establish boron equilization for reactor startup when PZR 'A' Spray Valve 2CV-4651 fails full open. PZR 'B' Spray Valve 2CV-4652 remains closed. The ATCO attempts to isolate the 'A' spray valve with the following results:

- \* Downstream isolation 2CV-4655 both indicating lights de-energize
- \* Upstream isolation 2CV-4656 indicates intermediate

What would be alternate indication that at least one block valve is fully closed?

- A. RCS pressure lowering.
- B. Pressurizer Water Phase temperature lowering.
- C. 'A' Spray Line temperature lowering.
- D. Pressurizer Surge Line temperature lowering.

### Answer:

- C. 'A' Spray Line temperature lowering.

### Notes:

All indications listed are on 2C04.

Closing the block valves will isolate the minimum spray throttled valve 2RC-8A stopping all flow and the spray line will no longer remain at Tc value.

Surge line temperature will only change if the water phase temperature changes or both spray valves are isolated.

Water phase temperature will follow the saturation conditions of the PZR.

### References:

M-2230 sheet 2

2203.012J ACA for G-4, E-5

### Historical Comments:

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22-May-06

<b>QID:</b> 0593	<b>Rev:</b> 0	<b>Rev Date:</b> 5/9/2006	<b>Lic Level:</b> R	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	<b>Source:</b> New 2006	<b>10CFR55:</b> 41.5	<b>Tier #</b>	1	
<b>3</b>		<b>10CFR55:</b>	<b>Group #</b>	1	
<b>Taxonomy:</b> 2	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>		<b>Importance Rating</b>	3.0	
<b>System Title:</b> Small Break LOCA	<b>System Number</b>	009	<b>K/A:</b>	EK2.03	

### Question:

The control room operators have just completed a rapid shutdown due to a 12 gpm RCS leak inside containment. No other failures have occurred. During implementation of the Excess RCS Leakage AOP post-trip, the ATCO begins steaming both SGs using SDBCS in manual to \_\_\_\_\_.

- A. maintain adequate margin to saturation
- B. minimize SG tubesheet differential pressure
- C. initiate natural circulation flow
- D. prepare for isolating one of the SGs

### Answer:

- A. maintain adequate margin to saturation

### Notes:

- RCS pressure is reduced to minimize break flow which challenges MTS. RCS cooldown is initiated to maintain margin during the depressurization.
- B. RCS/SG D/P is minimized during ESD events
  - C. The given condition implies that RCP forced circ cooldown will be performed.
  - D. SGs are isolated during tube leak events not a LOCA.

### References:

2203.016 and Tech Guide, floating step 28

### Historical Comments:



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<b>QID:</b> 0553	<b>Rev:</b> 0	<b>Rev Date:</b> 5/3/2006	<b>Lic Level:</b> R	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	<b>Source:</b> New 2006	<b>10CFR55:</b> 41.10	<b>Tier #</b>	1	
<b>4</b>		<b>10CFR55:</b>	<b>Group #</b>	1	
<b>Taxonomy:</b> 2	1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis		<b>Importance Rating</b>	3.3*	
<b>System Title:</b> Large Break LOCA	<b>System Number</b>	011	<b>K/A:</b>	EA2.02	

### Question:

Recovery is in progress for a large break LOCA with the following conditions:

- \* LOCA occurred 2.5 hours ago
- \* RCS pressure is 260 psia and stable
- \* RWT level 12% and lowering
- \* Preparation for initiating SDC is in progress
- \* SDC entry conditions have been verified

Placing the operating bypass for Low RWT Level/Low PZR Pressure in BYPASS on the PPS Inserts will \_\_\_\_\_.

- A. allow opening of the SDC Suction Isolations
- B. allow securing the Spray pumps
- C. cause the LPSI pumps to trip
- D. cause the eventual loss of HPSI pump suction source

### Answer:

D. cause the eventual loss of HPSI pump suction source

### Notes:

- A: SDC suction permissive interlock is 300 psia RCS pressure, not related to RAS/SIAS
- B: Spray pumps can be placed in pull-to-lock as needed. Their actuations will not be reset by this bypass.
- C: The operating bypasses are placed in service when applicable to prevent the LPSI (SDC) pumps from tripping.

### References:

2202.003 Section 3 step 32 CAUTION

### Historical Comments:

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22-May-06

QID:	0011	Rev:	000	Rev Date:	6/29/1998 1	Lic Level:	R	RO	SRO
Sample Plan Q#	5	Source:	NRC BANK	10CFR55.	41.10	Tier #	1		
				10CFR55.		Group #	1		
Taxonomy:	1	1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis				Importance Rating	2.6		
System Title:	Reactor Coolant Pump Malfunctions				System Number	015	K/A:	AA2.10	

### Question:

Which one (1) of the following conditions requires the plant to be tripped and the affected Reactor Coolant Pump (RCP) to be stopped as soon as the condition is met?

- A. Seal Bleedoff flow greater than 3.0 gpm.
- B. Motor Winding Temperature reaches 180°F and stabilizes.
- C. Vapor Seal Pressure reaches 750 psia.
- D. Component Cooling Water Flow is lost for over 10 minutes.

### Answer:

- D. Component Cooling Water Flow is lost for over 10 minutes.

### Notes:

Answer "A" is incorrect because seal bleedoff greater than 3.0 gpm requires plant shutdown, not a trip.

Answer "B" is incorrect because motor winding temperature must reach 194°F before action is required.

Answer "C" is incorrect because vapor seal pressure must be 1500 psia to require a trip.

### References:

2203.025 Attachment D (RCP Emergencies)

### Historical Comments:

Used on 1998 NRC Exam. Has not been used on the last two NRC exams BNC 10/12/2004

Used on 2005 exam ClayS.

## Questions For 2006 RO/SRO Exam

22-May-06

<b>QID:</b> 0453	<b>Rev:</b> 0	<b>Rev Date:</b> 10/4/2004	<b>Lic Level:</b> R	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	<b>Source:</b> NEW 2005	<b>10CFR55:</b> 41.8 & 4	<b>Tier #</b>	1	
6		<b>10CFR55:</b>	<b>Group #</b>	1	
<b>Taxonomy:</b> 2	1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis		<b>Importance Rating</b>	3.0	
<b>System Title:</b> Loss of Reactor Coolant Makeup	<b>System Number</b>	022	<b>K/A:</b>	AK1.03	

### Question:

With the plant at full power steady state operation, the following occurs:  
(Reference Provided)

- \* The "Charging Low Flow" alarm comes in
- \* Charging Header Flow indicates 0 gpm on 2FIS-4865
- \* Charging Header Pressure indicates 2200 psia on 2PIS-4870
- \* RCS Pressure is 2200 psia
- \* Pressurizer Level is 60%
- \* All Charging Pumps are secured and Letdown is isolated.

If no operator action is taken, what would pressurizer level be 13 minutes after Letdown is isolated?

- A. 60%
- B. 59%
- C. 58%
- D. 56%

### Answer:

- B. 59%

### Notes:

The pressurizer is 53.5 gal/%. With Letdown isolated the RCS inventory would still be reduced by 4 gpm from the RCP controlled bleed-off. After 13 minutes, the RCS would have been reduced by 52 gallons or ~1%.

NOP 2305.002 Exhibit 1 should be provided as a reference for this question.

### References:

NOP 2305.002 Exhibit 1 (provided to student)  
AOP 2203.036 Step 3 Contingency

### Historical Comments:

This question has not been used on any previous NRC exams. BNC 10/12/2004.  
This question was used on the 2005 exam. ClayS 5-19-06.

## Questions For 2006 RO/SRO Exam

22-May-06

QID:	0160	Rev:	000	Rev Date:	6/29/1998 4:	Lic Level:	R	RO	SRO
Sample Plan Q#	7	Source:	New 1998	10CFR55.	41.8, 10	Tier #	1		
				10CFR55.		Group #	1		
Taxonomy:	2	1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis				Importance Rating	3.9		
System Title:	Loss of Residual Heat Removal System				System Number	025	K/A:	AK1.01	

### Question:

Given the following plant conditions:

- \* Plant shutdown and cooldown just completed from 100% power.
- \* Shutdown Cooling has JUST been established.
- \* A Loss of Instrument Air occurs.

Which of the following describes the Shutdown Cooling System response?

- A. All SDC flow is lost.
- B. SDC heat removal is degraded.
- C. SDC flow is degraded.
- D. No significant effect.

### Answer:

- B. SDC heat removal is degraded.

### Notes:

### References:

2203.029, Rev 10, Steps 8 and 9 (Loss of Shutdown Cooling)  
ANO-2-LP-RO-EAOP, Rev 03, Obj 25.0  
ANO-2-LP-SRO-AOP, Rev 03, Obj 32.0

### Historical Comments:

Used on 1998 Exam.

## Questions For 2006 RO/SRO Exam

22-May-06

QID:	0228	Rev:	000	Rev Date:	2/6/2000 10:	Lic Level:	R	RO	SRO
Sample Plan Q#	Source:	New 2000	10CFR55.41.5, 10	Tier #	1				
8			10CFR55.	Group #	1				
Taxonomy:	1	1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis	Importance Rating	4.0					
System Title:	Loss of Component Cooling Water (CCW)	System Number	026	K/A:	AK3.03				

### Question:

Procedure 2202.007, Loss of Offsite Power, directs the operator to verify Component Cooling Water (CCW) isolated to Containment. What is the reason for this action?

- A. To prevent thermal shocking the CEDM Coolers upon restart of the CCW Pumps.
- B. To prevent water hammer in Containment Building piping upon restart of CCW Pumps.
- C. To prevent thermal shocking the RCPs upon restart of CCW Pumps.
- D. To prevent runout of the CCW Pumps upon restart.

### Answer:

- C. To prevent thermal shocking the RCPs upon restart of CCW Pumps.

### Notes:

### References:

1. 2202.007, Loss of Offsite Power, Step 25
2. 2202.007, Loss of Offsite Power Tech Guidelines, Step 25.
3. 2202.010, Standard Attachment 21, Restoration of CCW to RCPs

### Historical Comments:

Used on 2000 exam

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QID:	0436	Rev:	000	Rev Date:	1/15/2002 3:	Lic Level:	R	RO	SRO
Sample Plan Q#	Source:	New 2002	10CFR55.	41.5, 10	Tier #	1			
			10CFR55.		Group #	1			
Taxonomy:	1	1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis		Importance Rating	3.4				
System Title:	Pressurizer Pressure Control System Malfunc			System Number	027	K/A:	2.4.11		

### Question:

Given the following:

- \* Plant is at 100% Power.
- \* A Pressurizer (PZR) Pressure malfunction has occurred.
- \* Procedure 2203.028, PZR Systems Malfunction, has been entered

If both Pressurizer Pressure Control Channels have failed, the procedure directs the following actions:

- \* Place the Steam Dump Bypass Control System, SDBCS, Master controller in AUTO LOCAL and adjust setpoint to 1000 psia.
- \* Verify a maximum of one 11.5% SDBCS Bypass or Downstream Atmospheric Dump Valves, ADV, Permissive switch in MANUAL.
- \* Verify all other SDBCS Bypass and ADV Permissive switches in OFF

The reason for the actions above are to:

- A. Prevent spurious Quick Open signals to ALL SDBCS Bypass and ADV valves due to the failed PZR pressure bias input to the SDBCS Main calculator setpoint.
- B. Limit the plant effects of any spurious open signals to the SDBCS Bypass and ADV valves due to failed PZR pressure bias input to the SDBCS Main AND Permissive calculator setpoint.
- C. Prevent spurious Modulation Open signals to ALL SDBCS Bypass and ADV valves due to failed PZR pressure bias input to the SDBCS Permissive calculator setpoint.
- D. Limit the plant effects of any spurious open signals to the SDBCS Bypass and ADV valves due to failed PZR pressure bias input to the SDBCS Main calculator setpoint.

### Answer:

- B. Limit the plant effects of any spurious open signals to the SDBCS Bypass and ADV valves due to the failed PZR pressure bias input to the SDBCS Main and Permissive calculator setpoint.

### Notes:

Pressurizer Pressure Control Channel 1 inputs a bias to the SDBCS Main calculator while Pressurizer Pressure Control Channel 2 inputs to the SDBCS Permissive calculator. Since both Pressurizer Pressure Control channels have failed, all the ADVs and Bypass dump valves have the potential to open spuriously either by quick opening or modulating due to incorrectly calculated setpoints on the Main and Permissive calculators. By

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taking these actions the effect to the plant will be limited to one SDBCS or ADV valve with a 11.5% steam flow capacity due to the permissive for the selected valve in manual with a setpoint from the master at 1000 psia setpoint. This makes answer C correct and the others wrong.

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### References:

AN0-2-LP-RO-EAOP, Objective 21  
OP 2203.028, PZR System Malfunction, Step 5  
AOPP 2203.028, PZR System Malfunction Technical Guide, Step 5  
STM 2-23, SDBCS STM, Section 6.2

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### Historical Comments:

1/10/2002. Reworded distracter D due to NRC feedback because of D was not credible answer and cues answer.  
BNC

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<b>QID:</b> 0554	<b>Rev:</b> 0	<b>Rev Date:</b> 5/3/2006	<b>Lic Level:</b> R	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	<b>Source:</b> New 2006	<b>10CFR55:</b> 41.6	<b>Tier #</b>	1	
10		<b>10CFR55:</b>	<b>Group #</b>	1	
<b>Taxonomy:</b> 1	1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis		<b>Importance Rating</b>	3.4*	
<b>System Title:</b> ATWS	<b>System Number</b>	029	<b>K/A:</b>	EA1.01	

### Question:

Consider the following:

- \*Reactor trip from full power
- \*3 CEAs fail to insert
- \*The ATCO performs 2202.010 Exhibit 1, Emergency Boration

Which of the following represents adequate boration alignment?

- A. 2 charging pumps indicate running, charging header flow 85 gpm, VCT level lowering
- B. 3 charging pumps indicate running, charging header flow 105 gpm, VCT level lowering
- C. 1 charging pump indicates running, charging header flow 37 gpm, VCT level rising
- D. 1 charging pump indicates running, charging header flow 42 gpm, VCT level rising

### Answer:

- D. 1 charging pump indicates running, charging header flow 42 gpm, VCT level rising

### Notes:

VCT level rising is proper indication that the VCT outlet valve is closed and is not diluting the boration flow. Number of pumps is not relevant, boration verification is based on charging flowrate.

### References:

2202.010 Exhibit 1

### Historical Comments:



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<b>QID:</b> 0572	<b>Rev:</b> 0	<b>Rev Date:</b> 5/4/2006	<b>Lic Level:</b> R	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	<b>Source:</b> ANO-OPS2-12599	<b>10CFR55:</b> 41.2	<b>Tier #</b>	1	
<b>11</b>		<b>10CFR55:</b>	<b>Group #</b>	1	
<b>Taxonomy:</b> 1	1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis		<b>Importance Rating</b>	3.2	
<b>System Title:</b> Steam Line Rupture	<b>System Number</b>	040	<b>K/A:</b>	AK1.04	

### Question:

During a cooldown due to an Excess Steam Demand event, the pressure and temperature stresses on the Reactor Vessel inner wall are \_\_\_\_\_. This causes the total stress to be \_\_\_\_\_ the total allowable stress.

- A. tensile; closer to
- B. compressive; closer to
- C. tensile; further from
- D. compressive; further from

### Answer:

- A. tensile; closer to

### Notes:

### References:

GFES ASLPRO-TM010  
A2LP-RO-EESD obj 8

### Historical Comments:

New 2006

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<b>QID:</b>	0573	<b>Rev:</b>	0	<b>Rev Date:</b>	5/4/2006	<b>Lic Level:</b>	R	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	Source:	ANO-OpsUnit2-09254	10CFR55.	41.5	<b>Tier #</b>	1			
	12		10CFR55.		<b>Group #</b>	1			
<b>Taxonomy:</b>	2	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>		<b>Importance Rating</b>	3.9				
<b>System Title:</b>	Steam Line Rupture			<b>System Number</b>	E05	<b>K/A:</b>	EA1.1		

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**Question:**

Consider the following for an ESD event in progress:

- \* 'A' SG pressure is 800 psia and lowering slowly
- \* 'B' SG pressure is 20 psia and stable
- \* RCS pressure is 1500 psia and rising
- \* Pressurizer level is 35% and rising
- \* Average CET temperature is 490°F and rising
- \* Containment temperature is 208°F and lowering

Which of the following actions would have the most positive effect on complying with the major recovery strategy?

- A. Commence Auxiliary Spray.
  - B. Raise the steaming rate on 'A' SG.
  - C. Secure one HPSI pump.
  - D. Terminate containment spray.
- 

**Answer:**

- B. Raise the steaming rate on 'A' SG.
- 

**Notes:**

The recovery strategy for this question is maintain post blowdown temperature and pressure. After the affected SG (B) blows down, RCS heat removal has to be shifted to the intact SG to prevent repressurization and heatup. HPSI termination criteria is not met due to harsh environment value for PZR level (50%).  
Spray termination criteria not met.  
Aux spray will lower RCS press but does not directly control temperature.

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**References:**

2202.005 step 18, Recovery strategy listed in Floating Steps

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**Historical Comments:**

New 2006

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<b>QID:</b> 0555	<b>Rev:</b> 0	<b>Rev Date:</b> 5/3/2006	<b>Lic Level:</b> R	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b> 13	<b>Source:</b> New 2006	<b>10CFR55</b> 41.7	<b>Tier #</b> 1		
		<b>10CFR55</b>	<b>Group #</b> 1		
<b>Taxonomy:</b> 2	1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis		<b>Importance Rating</b> 4.3		
<b>System Title:</b> Loss of Main Feedwater	<b>System Number</b> 054	<b>K/A:</b> AA2.01			

### Question:

Plant is at 85% power with online repair of Main Feed Pump 2P-1B in progress.  
An electrical fault causes Main Feed Pump 2P-1A to trip and cannot be reset.

Which of the following represents the plant response with no further operator action?

- A. RPS trip due to low SG level
- B. MTG setback due to loss of both MFPs
- C. MTG lockout relay trip due to selected preferred pump trip
- D. RPS trip due to CPC Asymmetric Steam Generator (ASGT) Aux Trip

### Answer:

- A. RPS trip due to low SG level

### Notes:

Setback circuit is no longer used  
Preferred pump trip works in reverse, MTG trip causes pump trip  
ASGT only occurs when there is a delta between SGs, a loss of feed would have the same effect on both SGs.  
RPS trip setpoint is 22.2% SG level

### References:

STM 2-63

### Historical Comments:

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22-May-06

QID:	0574	Rev:	0	Rev Date:	5/4/2006	Lic Level:	R	RO		SRO	
Sample Plan Q#	14	Source:	ANO-OPS2-78	10CFR55.	41.10	Tier #	1				
				10CFR55.		Group #	1				
Taxonomy:	1	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>				Importance Rating	3.5				
System Title:	Loss of Feedwater				System Number	E06	K/A:	EK2.2			

### Question:

During a Loss of Feedwater event, feed flow cannot be established to the Steam Generators. With regard to the Reactor Coolant Pumps (RCPs), which of the following statements is correct?

- A. Leave all RCPs running to raise the heat removal rate from the Reactor Coolant System.
- B. Trip one RCP in each loop to balance Steam Generator heat removal.
- C. Trip all RCPs to minimize heat input into the Reactor Coolant System.
- D. Trip all but one RCP and use only one Steam Generator for heat removal.

### Answer:

- C. Trip all RCPs to minimize heat input into the Reactor Coolant System.

### Notes:

### References:

2202.006 step 5

### Historical Comments:

New 2006

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22-May-06

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<b>QID:</b>	0575	<b>Rev:</b>	0	<b>Rev Date:</b>	5/4/2006	<b>Lic Level:</b>	R	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	Source:	New 2006	10CFR55.41.7	<b>Tier #</b>	1				
15			10CFR55.	<b>Group #</b>	1				
<b>Taxonomy:</b>	1	1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis	<b>Importance Rating</b>	3.5					
<b>System Title:</b>	Loss of Off-site Power	<b>System Number</b>	056	<b>K/A:</b>	AK3.01				

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**Question:**

The following conditions exist:

- \* 100% power
- \* 2DG2 out of service for maintenance
- \* SIAS actuates concurrent with loss of off-site power
- \* 2A4 has just been energized using the AACG

Which of the following describes the sequence of green train ECCS response?

- A. Injection valves open automatically, HPSI pump automatically starts, then LPSI pump automatically starts.
  - B. HPSI pump automatically starts, LPSI pump automatically starts, then manually open injection valves.
  - C. Manually start HPSI and LPSI pumps, then manually open injection valves.
  - D. Injection valves open automatically, then manually start HPSI and LPSI pumps.
- 

**Answer:**

D. Injection valves open automatically, then manually start HPSI and LPSI pumps.

**Notes:**

SIAS start of ECCS pumps requires bus normal feed or EDG output breaker closed. The AACG uses the cross-tie breakers to energize the ESF bus. The MOVs auto-open regardless of power source.

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**References:**

E-2196  
E-2204

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**Historical Comments:**

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22-May-06

QID:	0576	Rev:	0	Rev Date:	5/4/2006	Lic Level:	R	RO	SRO
Sample Plan Q#	18	Source:	ANO-OPS2-12335	10CFR55.	41.4	Tier #	1		
				10CFR55.		Group #	1		
Taxonomy:	2	1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis				Importance Rating	3.2		
System Title:	Loss of Nuclear Service Water				System Number	G	K/A:	2.1.28	

### Question:

Which of the following would be the most likely cause of a Service Water Pump Discharge pressure high alarm?

- A. A partially clogged Service Water Pump strainer.
- B. ACW is the only load on a Service Water Pump.
- C. The Cooling Tower level control valve (Squeeze Valve) fails closed.
- D. The Cooling Tower make up valve is inadvertently closed.

### Answer:

- D. The Cooling Tower make up valve is inadvertently closed.

### Notes:

Strainer D/P will cause pump discharge pressure to rise but not to 118 psig with a partial clog and normal system flow.  
Isolating ACW from the SW loop will cause pump pressure to rise but ACW is a large load so the high pressure alarm would not be expected.  
Closing the squeeze valve will cause pressure to rise but only enough to push SW return flow to the CT basin.  
Closing the CT MU valve will cause the squeeze valve to automatically close (based on lowering level) eventually dead heading the SW loop.

### References:

P&ID M-2210 sh 1, 2, and 3  
2203.012F  
2203.022

### Historical Comments:

New 2006

## Questions For 2006 RO/SRO Exam

22-May-06

QID:	0605	Rev:	0	Rev Date:	5/15/2006	Lic Level:	R	RO	SRO
Sample Plan Q#	16	Source:	New 2006	10CFR55.	41.7	Tier #	1		
				10CFR55.		Group #	1		
Taxonomy:	2	1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis				Importance Rating	4.1		
System Title:	Loss of vital AC Instrument Bus				System Number	057	K/A:	AK3.01	

### Question:

Given the following:

- \* The plant is at full power.
- \* Annunciator 2K09 A3 LOADCENTER 2B6 UNDERVOLT comes in.
- \* AOP 2203.045, Loss of 480 Volt Vital Bus is entered

If this condition will last for greater than 2 hours, then the \_\_\_\_\_ inverter should be secured to \_\_\_\_\_.

- A. 2RS-3; to limit the load on the Red Train Emergency Diesel Generator.
- B. 2RS-4; to limit the load on the Green Train Vital DC Battery.
- C. 2RS-3; to limit the load on the Red Train Vital DC Battery.
- D. 2RS-4; to limit the load on the Green Train Emergency Diesel Generator.

### Answer:

B. 2RS-4; to limit the load on the Green Train Vital DC Battery.

### Notes:

Distracter A is incorrect because 2RS 3 is powered from 2B5 powered battery charger not 2B6 and the RED EDG is not running.

Distracter C is incorrect because 2RS 3 is powered from 2B5 powered battery charger not 2B6 so there is no drain on the Red Train Battery.

Distracter D is incorrect because the Green EDG is not feeding 2B6 with this alarm in.

### References:

OP 2203.012I ANNUNCIATOR 2K09 CORRECTIVE ACTION for 2K09 A3  
AOP 2203.045 LOSS OF 480 VOLT VITAL BUS Step 35.

### Historical Comments:

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<b>QID:</b> 0589	<b>Rev:</b> 0	<b>Rev Date:</b> 5/9/2006	<b>Lic Level:</b> R	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	<b>Source:</b> New 2006	<b>10CFR55:</b> 41.7	<b>Tier #</b>	1	
<b>17</b>		<b>10CFR55:</b>	<b>Group #</b>	1	
<b>Taxonomy:</b> 1	1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis		<b>Importance Rating</b>	3.1*	
<b>System Title:</b> Loss of DC Power	<b>System Number</b>	058	<b>K/A:</b>	AA1.02	

### Question:

Inverter 2Y11 is supplying 2RS1 in a normal lineup. 2Y11 DC supply breaker 2D01-13 now trips.

Considering local indication at 2Y11 after the breaker trip, the status of power to 2RS1 could be determined because "2Y11 120 VAC Output" (V2) would be \_\_\_\_\_, and "2Y11 Inverter Output Amps" (A1) would be \_\_\_\_\_.

- A. ~ 120 V; ~50 amps
- B. ~ 120 V; 0 amps
- C. 0 V; 0 amps
- D. 0 V; ~50 amps

### Answer:

- A. ~ 120 V; ~50 amps

### Notes:

0 V with 50 amps is viable in that the student has to know remember that the AC output meter is downstream of the static switch and Not on the inverter output (as is the frequency meter)

### References:

STM 2-32 inverter drawings on pages 18 and 25.

### Historical Comments:



## Questions For 2006 RO/SRO Exam

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<b>QID:</b> 0601	<b>Rev:</b> 0	<b>Rev Date:</b> 5/12/2006	<b>Lic Level:</b> R	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	<b>Source:</b> New 2006	<b>10CFR55:</b> 41.5, 6	<b>Tier #</b>	1	
19		<b>10CFR55:</b>	<b>Group #</b>	2	
<b>Taxonomy:</b> 2	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>		<b>Importance Rating</b>	3.0*	
<b>System Title:</b> Continuous Rod Withdrawal	<b>System Number</b>	001	<b>K/A:</b>	AK2.06	

### Question:

A plant startup is in progress and the following conditions exist:

- \* The reactor is critical at 5E-5% power.
- \* Tave is at 545 °F.
- \* A CEDMCS failure causes the selected bank of rods to step out ten (10) steps before being stopped by the operator.
- \* No reactor trip occurs.

Considering the effect that this event will have on reactor parameters over the next minute, a SUR Hi alarm \_\_\_\_\_ expected and a Tave/Tref mismatch \_\_\_\_\_ expected?

- A. is; is
- B. is NOT; is
- C. is NOT; is NOT
- D. is; is NOT

### Answer:

D. is; is NOT

### Notes:

The power level is well below the point of adding heat. As such, the contribution of fission to heat production is negligible. Temperature is controlled by SDBCS settings. The CEAs do, however, add positive reactivity which will cause reactor power to rise resulting in a positive SUR. The SUR Hi alarms at 1.6 dpm.

### References:

### Historical Comments:

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22-May-06

<b>QID:</b> 0569	<b>Rev:</b> 0	<b>Rev Date:</b> 5/3/2006	<b>Lic Level:</b> R	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	<b>Source:</b> New 2006	<b>10CFR55:</b> 41.6	<b>Tier #</b>	1	
20		<b>10CFR55:</b>	<b>Group #</b>	2	
<b>Taxonomy:</b> 2	1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis		<b>Importance Rating</b>	3.4	
<b>System Title:</b>	Inop/Stuck Control Rod	<b>System Number</b>	005	<b>K/A:</b>	AA1.05

### Question:

Unit 2 reactor startup is in progress. The operator performing the startup is withdrawing S/D Bank 'A' and CEA #50 becomes mechanically bound and does not move with the rest of the group.

If this condition were to go unnoticed by the startup operator, which of the following alarms would be the first to warn of this condition?

- A. 2K04 J6 CEAC #2 CEA Deviation
- B. 2K10 B2 CPC AZTILT Exceeded
- C. 2K10 D1 CEDMCS Minor CEA Deviation
- D. 2K04 H5 CEAC #1 Sensor Failure

### Answer:

- A. 2K04 J6 CEAC #2 CEA Deviation

### Notes:

Although the CEDMCS deviation is smaller for an alarm, CEDMCS would not see the condition because the pulse counter would still be working without the CEA movement. CEAC would see the actual condition based on reed switch rod indication.

AZTILT may be affected but the incore response is very slow.

### References:

2203.012D  
2203.012J

### Historical Comments:

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<b>QID:</b> 0566	<b>Rev:</b> 0	<b>Rev Date:</b> 5/3/2006	<b>Lic Level:</b> R	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b> 21	<b>Source:</b> New 2006	<b>10CFR55:</b> 41.12	<b>Tier #</b> 1		
		<b>10CFR55:</b>	<b>Group #</b> 2		
<b>Taxonomy:</b> 1	1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis		<b>Importance Rating</b> 3.7		
<b>System Title:</b> Fuel Handling Accident	<b>System Number</b> 036	<b>K/A:</b> AK3.03			

### Question:

Unit 2 is in Mode 6 with a fuel off-load in progress. The SRO in charge of refueling notifies the SM that an incident has caused damage to a spent fuel assembly in the reactor building upender.

The Refueling Accident procedure directs evacuating the reactor building for this event because:

- A. Reactor building purge will be secured.
- B. Damage to the fuel assembly could cause inadvertent criticality.
- C. Rupture of the cladding could result in release of fission product gases.
- D. the reactor building spray system will be actuated for iodine removal.

### Answer:

- C. Rupture of the cladding could result in release of fission product gases.

### Notes:

### References:

2502.001 Attachment M section 2 & 3

### Historical Comments:

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**Questions For 2006 RO/SRO Exam**

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22-May-06

<b>QID:</b> 0607	<b>Rev:</b> 0	<b>Rev Date:</b> 5/15/2006	<b>Lic Level:</b> R	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	<b>Source:</b> New 2006	<b>10CFR55.</b>	<b>Tier #</b>	1	
22		<b>10CFR55.</b>	<b>Group #</b>	2	
<b>Taxonomy:</b> 2	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>		<b>Importance Rating</b>	3.4	
<b>System Title:</b>	Steam Generator Tube Leak	<b>System Number</b>	037	<b>K/A:</b>	2.2.22

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**Question:**

Consider the following:

- \* Plant power is 30% and lowering
- \* A plant shutdown is in progress due to a tube leak on 'B' SG
- \* Leak rate has been confirmed by chemistry to be 125 GPD
- \* Actions of 2203.038 Primary to Secondary Leakage AOP have been completed up to the point of tripping the reactor

Considering the event in progress and actions taken in the AOP, which of the following LCOs would be applicable?

- A. Reactor Coolant System Leakage, 3.4.6.2
  - B. Reactor Coolant System Pressure/Temperature Limits, 3.4.9.1
  - C. Steam Generator Pressure/Temperature Limitation, 3.7.2.1
  - D. Emergency Feedwater System, 3.7.1.2
- 

**Answer:**D. Emergency Feedwater System, 3.7.1.2

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**Notes:**

- A. Confirmed leakage of greater than 150 GPD required for this LCO
  - B. Cooldown has not been started. P/T limits not challenged until rx tripped with a leak this small (< 0.1 gpm)
  - C. SG P/T limits, although applicable at all times, are related more to CSD conditions during initial heatup and pressurization.
- 

**References:**

2203.038 Floating Step 13.  
TS 3.4.6.2, 3.4.9.1, 3.7.2.1, 3.7.1.2

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**Historical Comments:**

## Questions For 2006 RO/SRO Exam

22-May-06

QID:	0568	Rev:	0	Rev Date:	5/3/2006	Lic Level:	R	RO	SRO
Sample Plan Q#	23	Source:	New 2006	10CFR55.	41.4	Tier #	1		
				10CFR55.		Group #	2		
Taxonomy:	2	1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis				Importance Rating	3.4		
System Title:	Loss of Condenser Vacuum				System Number	G	K/A:	2.1.32	

### Question:

Unit 2 is at 100% power and 'B' Circulating Water pump breaker trips and the Loss of Condenser Vacuum AOP is entered.

Which of the following AOP steps will have the biggest impact on restoring condenser vacuum?

- A. Isolating nitrogen purge to condenser.
- B. Place vacuum pumps in the 'Hogging' mode.
- C. Emergency borate to reduce Tave.
- D. Verify 'B' Circulating Water pump discharge valve closed.

### Answer:

D. Verify 'B' Circulating Water pump discharge valve closed.

### Notes:

Hogging mode will not help much for a loss of heat sink issue.  
The N2 purge is a very small flow rate (scfh).  
Reducing RCS temperature does not reduce heat load on the condenser.  
Circ pumps do not have discharge check valves so if the discharge valve for the idle pump does not go closed, then the running pump will bypass the condenser through the idle pump.

### References:

2203.019 and tech guide step 5.

### Historical Comments:

## Questions For 2006 RO/SRO Exam

22-May-06

<b>QID:</b> 0567	<b>Rev:</b> 0	<b>Rev Date:</b> 5/3/2006	<b>Lic Level:</b> R	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	<b>Source:</b> New 2006	<b>10CFR55:</b> 41.11	<b>Tier #</b>	1	
<b>24</b>		<b>10CFR55:</b>	<b>Group #</b>	2	
<b>Taxonomy:</b> 2	1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis		<b>Importance Rating</b>	2.5*	
<b>System Title:</b> ARM system alarms	<b>System Number</b>	061	<b>K/A:</b>	AK1.01	

### Question:

A trip from 100% power occurs with the following conditions:

- \* Containment pressure is 22 psia and rising
- \* Containment Hi Range Radiation is 250 R/hr and rising
- \* Both SG pressures are 990 psia and stable
- \* RCS pressure is 1675 psia and lowering

Given these indications, a(n) \_\_\_\_\_ is in progress based on \_\_\_\_\_.

- A. ESD; Containment pressure.
- B. LOCA; Containment Hi Range radiation.
- C. LOCA; SG pressures.
- D. ESD; RCS pressure.

### Answer:

C. LOCA; SG pressures.

### Notes:

Containment high range rad monitor signal will rise for any large energy release in containment. It becomes more reliable as containment temperature stabilizes.

### References:

Entry conditions for 2202.003 and 2202.005  
STM 2-62

### Historical Comments:

## Questions For 2006 RO/SRO Exam

22-May-06

<b>QID:</b> 0323	<b>Rev:</b> 000	<b>Rev Date:</b> 12/4/2001 9:	<b>Lic Level:</b> R	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	<b>Source:</b> New 2002	<b>10CFR55:</b> 41.5	<b>Tier #</b>	1	
25		<b>10CFR55:</b>	<b>Group #</b>	2	
<b>Taxonomy:</b> 2	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>		<b>Importance Rating</b>	2.8	
<b>System Title:</b> High Reactor Coolant Activity	<b>System Number</b>	076	<b>K/A:</b>	AA2.02	

### Question:

Given the following plant conditions:

- \* Unit is operating at 100% power following a Plant Startup from a Refueling Outage.
- \* RCS Letdown Gross Rad Monitor (2RITS-4806A) reads 1E5 CPM and is slowly rising.
- \* Chemistry samples indicate that RCS activity is approaching the Technical Specification limits.

Which ONE of the following actions should be taken due to the rising RCS activity?

- A. Bypass Letdown Demineralizers and swap the VCT inlet to the Hold Up Tanks.
- B. Minimize Letdown to allow more dilution inventory from Charging into the RCS.
- C. Increase Letdown flow to maximize RCS activity cleanup using demineralizers.
- D. Isolate RCS Letdown Gross Rad Monitor (2RITS-4806A) to prevent over-ranging.

### Answer:

- C. Increase Letdown flow to maximize RCS activity cleanup using demineralizers.

### Notes:

Tech Guide for High Activity in the RCS, AOP 2203.020 Step 3, states that raising Letdown flow will raise the rate of fission product removal and should offset any the raised dose seen by personnel due to the raised flow rate. This makes answer C correct. Answer A is wrong because it would only move the fission products to another tank which would have to be processed later. B is incorrect because too much inventory added to the RCS would violate Technical Specifications. D is incorrect because we want to continue to monitor RCS activity with this monitor.

### References:

2203.020, High Activity in RCS, Step 3  
2203.020, High Activity in RCS Tech Guidelines, Step 3  
ANO-2-LP-RO-EAOP, Abnormal Operating Procedures, Objective 15.0

### Historical Comments:

Reference Exam

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<b>QID:</b> 0598	<b>Rev:</b> 0	<b>Rev Date:</b> 5/11/2006	<b>Lic Level:</b> R	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	<b>Source:</b> New 2006	<b>10CFR55:</b> 41.7	<b>Tier #</b>	1	
26		<b>10CFR55:</b>	<b>Group #</b>	2	
<b>Taxonomy:</b> 2	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>		<b>Importance Rating</b>	2.8	
<b>System Title:</b>	RCS Overcooling	<b>System Number</b>	A11	<b>K/A:</b>	AK1.1

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**Question:**

Unit 2 is in Mode 3 with a cooldown in progress for refueling with the following conditions:

- \* SG pressures 850 psia controlled by SDBCS in manual for cooldown
- \* SG 'A' main steam safety 2PSV-1002 starts simmering and then sticks open
- \* RCS Overcooling AOP is entered

Which of the following actions should be taken for this condition?

- A. Reset MSIS setpoint for SG 'A' until 2PSV-1002 can be gagged closed.
  - B. Close MSIVs and start steaming with SG 'B' upstream atmospheric dump valve.
  - C. Raise the feedrate to SG 'A' to maintain level.
  - D. Actuate MSIS and go to Attachment 3, Diagnostic Actions.
- 

**Answer:**

D. Actuate MSIS and go to Attachment 3, Diagnostic Actions.

---

**Notes:**

MSIS setpoints should not be changed during a related event.  
Feed flow to the SG blowing down should be secured even before the MSIS setpoint is reached if possible.  
Closing the MSIVs would not isolate the relief valve or stop the cooldown. SGB should not be steamed until the blowdown is stopped on SGA

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**References:**

2203.011 step 2

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**Historical Comments:**

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**Questions For 2006 RO/SRO Exam**

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<b>QID:</b>	0595	<b>Rev:</b>	0	<b>Rev Date:</b>	5/11/2006	<b>Lic Level:</b>	R	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	27	<b>Source:</b>	New 2006	<b>10CFR55.</b>	41.10	<b>Tier #</b>	1		
				<b>10CFR55.</b>		<b>Group #</b>	2		
<b>Taxonomy:</b>	1	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>				<b>Importance Rating</b>	2.8		
<b>System Title:</b>	Excess RCS Leakage				<b>System Number</b>	A16	<b>K/A:</b>	AK3.2	

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**Question:**

The Excess RCS Leakage AOP is being implemented for an unidentified leak in containment. The CRS directs the ATCO to isolate Letdown due to pressurizer level deviating from setpoint.

When isolating Letdown, \_\_\_\_\_ is the LEAST preferred isolation to use because \_\_\_\_\_.

- A. Letdown Isolation 2CV-4820-2; it is inside containment and may not fully close in this high moisture environment
  - B. Regen HX Outlet 2CV-4823-2; it will cause the Regen Heat Exchanger to overpressurize
  - C. Letdown Isolation 2CV-4820-2; it is powered from non-vital MCC 2B81 and will likely trip its breaker
  - D. Regen HX Outlet 2CV-4823-2; it is NOT designed to isolate letdown at normal pressure and flow
- 

**Answer:**

D. Regen HX Outlet 2CV-4823-2; it is NOT designed to isolate letdown at normal pressure and flow

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**Notes:**

2CV-4820-2 is preferred for leak determination since it is the first valve in the letdown flowpath. The regen HX is design for full RCS pressure.

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**References:**

2203.016 and Tech Guide, step 3

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**Historical Comments:**

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**Questions For 2006 RO/SRO Exam**

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<b>QID:</b>	0557	<b>Rev:</b>	0	<b>Rev Date:</b>	5/3/2006	<b>Lic Level:</b>	R	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	28	<b>Source:</b>	New 2006	<b>10CFR55.</b>	41.3	<b>Tier #</b>	2		
				<b>10CFR55.</b>		<b>Group #</b>	1		
<b>Taxonomy:</b>	1	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>				<b>Importance Rating</b>	2.8		
<b>System Title:</b>	Reactor Coolant Pump				<b>System Number</b>	003	<b>K/A:</b>	K4.04	

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**Question:**

The RCP Control Bleedoff (CBO) Relief Valve 2PSV-4836 prevents damage to the RCP seals by:

- A. Relieving pressure buildup in the event there is excessive CBO flow from a RCP failed seal.
  - B. Relieving an overpressure condition to the containment sump in the event a CBO containment isolation is closed.
  - C. Maintain RCP CBO flow in the event a CBO containment isolation is closed.
  - D. Maintain RCP CBO flow from the unaffected RCPs in the event the excess flow check valve for a RCP closes.
- 

**Answer:**

C. Maintain RCP CBO flow in the event a CBO containment isolation is closed.

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**Notes:**

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**References:**

M-2231 sheet 1  
STM 2-03-2 page 4

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**Historical Comments:**

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## Questions For 2006 RO/SRO Exam

22-May-06

<b>QID:</b>	0596	<b>Rev:</b>	0	<b>Rev Date:</b>	5/11/2006	<b>Lic Level:</b>	R	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	29	<b>Source:</b>	ANO-OPS2-9909	<b>10CFR55</b>	41.7	<b>Tier #</b>	2		
				<b>10CFR55</b>		<b>Group #</b>	1		
<b>Taxonomy:</b>	2	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>				<b>Importance Rating</b>	3.0		
<b>System Title:</b>	Chemical & Volume Control				<b>System Number</b>	004	<b>K/A:</b>	A1.06	

### Question:

Unit 2 is at full power operation. Consider the following:

- \* An inadvertent Containment Isolation Actuation (CIAS) occurs
- \* All containment parameters are normal
- \* RCS Tave is steady at 580 °F
- \* Only the lead charging pump is operating
- \* Component Cooling Water (CCW) is being restored to the RCPs
- \* Assume that no other operator action is taken

With these conditions in mind, Pressurizer Level is going up at a rate of \_\_\_\_\_ and VCT Level is going down at a rate of \_\_\_\_\_.

- A. 44 gpm; 44 gpm
- B. 44 gpm; 40 gpm
- C. 40 gpm; 44 gpm
- D. 40 gpm; 40 gpm

### Answer:

C. 40 gpm; 44 gpm

### Notes:

The key is that RCP CBO (4 gpm) will be directed to the QT vs VCT and letdown will be isolated due to the CIAS actuation.

### References:

2203.039  
STM 2-04; 2.21.3  
STM 2-04; 2.3  
A2LP-RO-CVCS Objective: 6, 17

### Historical Comments:

New 2006

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**Questions For 2006 RO/SRO Exam**

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22-May-06

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<b>QID:</b>	0558	<b>Rev:</b>	0	<b>Rev Date:</b>	5/3/2006	<b>Lic Level:</b>	R	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	30	<b>Source:</b>	New 2006	<b>10CFR55</b>	41.7	<b>Tier #</b>	2		
				<b>10CFR55</b>		<b>Group #</b>	1		
<b>Taxonomy:</b>	1	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>				<b>Importance Rating</b>	2.7*		
<b>System Title:</b>	RHR				<b>System Number</b>	005	<b>K/A:</b>	K2.03	

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**Question:**

The motive power for the inside containment SDC Suction Isolations 2CV-5084-1 and 2CV-5086-2 is from \_\_\_\_\_ and the outside isolation 2CV-5038-1 is from \_\_\_\_\_.

- A. Vital 480 VAC; Instrument Air
  - B. Non-Vital 480 VAC; Instrument Air
  - C. Non-Vital 480 VAC; Non-Vital 480 VAC
  - D. Vital 480 VAC; Vital 480 VAC
- 

**Answer:**

D. Vital 480 VAC; Vital 480 VAC

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**Notes:**

Some penetration (outside) valves are air operated but none of these.  
2CV-5038 does not have any interlocks or actuations but is still vital powered.

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**References:**

2107.002 Attachments C & D

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**Historical Comments:**

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**Questions For 2006 RO/SRO Exam**

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22-May-06

<b>QID:</b>	0570	<b>Rev:</b>	0	<b>Rev Date:</b>	5/3/2006	<b>Lic Level:</b>	R	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	Source:	New 2006	10CFR55.41.10	<b>Tier #</b>	2				
31			10CFR55.	<b>Group #</b>	1				
<b>Taxonomy:</b>	1	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>		<b>Importance Rating</b>	2.8*				
<b>System Title:</b>	RHR			<b>System Number</b>	005	<b>K/A:</b>	A4.03		

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**Question:**

Consider the following:

- \* Mode 4, 220°F
- \* Cooldown to Mode 5 in progress
- \* SDC system (red train) is in service
- \* RCPs are secured

In this condition, \_\_\_\_\_ is used for determining RCS temperature to verify cooldown rates are within limits.

- A. Wide range Tcold
  - B. SDC Return Temperature
  - C. Average CET from SPDS
  - D. SDC Heat Exchanger Outlet
- 

**Answer:**B. SDC Return Temperature

---

**Notes:**

Wide range Tc is used when RCPs are running.  
CETs can be used for trending and are also required for natural circ cooldowns (EOP/AOP).  
SDC HX outlet is only a portion of the total SDC flow.

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**References:**

2102.010 step 5.1  
1015.016 step 5.1  
form 1015.016I  
form 1015.016H

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**Historical Comments:**

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**Questions For 2006 RO/SRO Exam**

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22-May-06

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<b>QID:</b>	0278	<b>Rev:</b>	001	<b>Rev Date:</b>	2/7/2000 4:4	<b>Lic Level:</b>	R	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	Source:	New 2000	10CFR55.41.7	<b>Tier #</b>	2				
32			10CFR55.	<b>Group #</b>	1				
<b>Taxonomy:</b>	1	1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis		<b>Importance Rating</b>	4.2				
<b>System Title:</b>	Emergency Core Cooling System (ECCS)		<b>System Number</b>	006	<b>K/A:</b>	A3.08			

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**Question:**

Given the following plant conditions:

- \* Large Break LOCA in progress.
- \* RAS actuates with the Refueling Water Tank (RWT) level at 6%.

Which of the following over-rides will be removed for the given conditions?

- A. HPSI Injection Isolation 2CV-5015-1 over-ridden closed.
  - B. ACW Supply Isolation 2CV-1425-1 over-ridden open.
  - C. CAMS Supply Isolation 2SV-8263-2 over-ridden open.
  - D. CCW Supply Isolation 2CV-5255-1 over-ridden open.
- 

**Answer:**

B. ACW Supply Isolation 2CV-1425-1 over-ridden open

**Notes:**

RAS actuation blocks the overrides for SW valves to ensure adequate SW pressure available to the SDC HX (Spray). All other choices are non-SW components

**References:**

STM 2-70, RAS Actuation Table  
STM 2-42, Service Water and Auxiliary Cooling Water Systems, Rev 11 Chg 1, Section 4.0.

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**Historical Comments:**

Added notes and added RAS actuation to stem. 5-18-06 ClayS

## Questions For 2006 RO/SRO Exam

22-May-06

<b>QID:</b> 0559	<b>Rev:</b> 0	<b>Rev Date:</b> 5/3/2006	<b>Lic Level:</b> R	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	<b>Source:</b> New 2006	<b>10CFR55:</b> 41.10	<b>Tier #</b>	2	
33		<b>10CFR55:</b>	<b>Group #</b>	1	
<b>Taxonomy:</b> 2	1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis		<b>Importance Rating</b>	3.1	
<b>System Title:</b>	Pressurizer Relief/Quench Tank	<b>System Number</b>	007	<b>K/A:</b>	K5.02

### Question:

When forming a pressurizer steam bubble, level is maintained 80-90% using a \_\_\_\_\_ to raise level and \_\_\_\_\_ to lower level.

- A. LPSI pump; Letdown
- B. LPSI pump; LPSI mini-recirc
- C. Charging pump; LPSI mini-recirc
- D. Charging pump; Letdown

### Answer:

C. Charging pump; LPSI mini-recirc

### Notes:

A & D: With RCS at atmospheric (no bubble) there is not enough D/P across the letdown valves to reduce inventory in the RCS.

A & B: LPSI pump(s) will be aligned for SDC so suctions are not aligned to RWT for makeup to RCS.

### References:

2103.002 step 9.12

### Historical Comments:



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**Questions For 2006 RO/SRO Exam**

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22-May-06

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<b>QID:</b>	0602	<b>Rev:</b>	0	<b>Rev Date:</b>	5/12/2006	<b>Lic Level:</b>	R	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	34	<b>Source:</b>	ANO-OPS2-6705	<b>10CFR55.</b>	41.4	<b>Tier #</b>	2		
				<b>10CFR55.</b>		<b>Group #</b>	1		
<b>Taxonomy:</b>	1	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>				<b>Importance Rating</b>	3.3*		
<b>System Title:</b>	Component Cooling Water				<b>System Number</b>	008	<b>K/A:</b>	A2.05	

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**Question:**

Which of the following would be the affect of a loss of Instrument Air on Component Cooling Water (CCW) components?

- A. Surge Tank vent would be unable to be shifted to a monitored release path.
  - B. CCW containment isolation valves fail closed, reactor must be tripped if not restored.
  - C. Crossover valves will shift to align 2P-33B to supply Loop II CCW.
  - D. Letdown will isolate on high Letdown Heat Exchanger outlet temperature.
- 

**Answer:**

- A. Surge Tank vent would be unable to be shifted to a monitored release path.
- 

**Notes:**

CCW containment isolations are MOVs.  
Loop crossover valves fail as-is.  
LD HX temperature control valve fails open on loss of air.

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**References:****Historical Comments:**

New 2006

## Questions For 2006 RO/SRO Exam

22-May-06

<b>QID:</b>	0159	<b>Rev:</b>	001	<b>Rev Date:</b>	8/11/1998 3:	<b>Lic Level:</b>	R	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	Source:	New 1998	10CFR55.	41.7	<b>Tier #</b>	2			
35			10CFR55.	NA	<b>Group #</b>	1			
<b>Taxonomy:</b>	1	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>		<b>Importance Rating</b>	3.0				
<b>System Title:</b>	Pressurizer Pressure Control System			<b>System Number</b>	010	<b>K/A:</b>	K2.01		

### Question:

Which of the following pressurizer heater banks are powered by 480V Vital Power?

- A. Proportional heaters banks #1 and #2, backup heaters #1 and #2.
- B. Backup heaters banks #1, #2, #3, #4.
- C. Proportional heater banks #1 and #2.
- D. Backup heaters banks #1 and #2.

### Answer:

C. Proportional heater banks #1 and #2.

### Notes:

### References:

2107.002, Attachment B, (ESF Electrical System Operation)  
STM2-3-1, Section 2.4 Table (Pressurizer Pressure and Level Control)  
ANO-2-LP-RO-RCS, Obj 10.0

### Historical Comments:

Rev 001 - 08/11/98 - Added procedure 2107.002 to reference list per NRC review comment.

## Questions For 2006 RO/SRO Exam

22-May-06

<b>QID:</b> 0597	<b>Rev:</b> 0	<b>Rev Date:</b> 5/11/2006	<b>Lic Level:</b> R	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	<b>Source:</b> New 2006	<b>10CFR55.41.6</b>	<b>Tier #</b> 2		
36		<b>10CFR55.</b>	<b>Group #</b> 1		
<b>Taxonomy:</b> 2	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>		<b>Importance Rating</b> 3.1*		
<b>System Title:</b> Reactor Protection	<b>System Number</b> 012	<b>K/A:</b> K3.03			

### Question:

A Unit 2 startup after a refueling outage is in progress with plant power at 25%. The main turbine is manually tripped due to high vibes. No other manual actions have been taken.

Given these conditions, the SDBCS valves \_\_\_\_\_ have a quick open BLOCK signal because \_\_\_\_\_.

- A. would; RCS Tave as calculated by the Reactor Reg system would be elevated
- B. would NOT; CEDMCS buses 2C70 and 2C71 are still energized
- C. would; the Main Turbine lockout relay would initiate a reactor trip
- D. would NOT; Turbine Power is <20% as calculated by the Reactor Reg system

### Answer:

B. would NOT; CEDMCS buses 2C70 and 2C71 are still energized

### Notes:

CEDMCS undervoltage relays provide the Reactor Trip input to SDBCS for the quick open block signal.

### References:

2105.008 step 6.1 setpoints  
STM 2-02 section 5.8

### Historical Comments:

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**Questions For 2006 RO/SRO Exam**

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22-May-06

<b>QID:</b> 0608	<b>Rev:</b> 0	<b>Rev Date:</b> 5/15/2006	<b>Lic Level:</b> R	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	<b>Source:</b> New 2006	<b>10CFR55:</b> 41.7	<b>Tier #</b>	2	
37		<b>10CFR55:</b>	<b>Group #</b>	1	
<b>Taxonomy:</b> 1	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>		<b>Importance Rating</b>	3.7	
<b>System Title:</b>	Engineered Safety Features Actuation	<b>System Number</b>	013	<b>K/A:</b>	K1.18

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**Question:**

The plant is in Mode 3 following a manual actuation of MSIS from full power due to a large steam leak.  
Consider the following conditions:

- \* The steam leak was determined to be in the turbine building
- \* SG pressures have returned to normal post trip values
- \* All four MSIV handswitches remain in the OPEN position
- \* The MSIS signal in PPS is now reset

Given these conditions, the MSIVs will \_\_\_\_\_ because \_\_\_\_\_.

- A. open; SG pressure is above MSIS setpoint
  - B. open; the anti-flyback relay is de-energized
  - C. remain closed; SG pressure is below MSIS setpoint
  - D. remain closed; the anti-flyback relay is energized
- 

**Answer:**

D. remain closed; the anti-flyback relay is energized

---

**Notes:**

- A. Pressure return to normal does not affect MSIV reset logic
  - B. The anti-flyback relay prevents re-opening. The handswitches must be taken to closed after an actuation to allow re-opening.
  - C. SG pressures at normal post trip value (~950 psia) is above trip setpoint
- 

**References:**

E-2160 sh 1 (interlock relay 94/10xx-x)

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**Historical Comments:**

## Questions For 2006 RO/SRO Exam

22-May-06

QID:	0610	Rev:	0	Rev Date:	5/15/2006	Lic Level:	R	RO	SRO
Sample Plan Q#	Source:	New 2006	10CFR55.41.10	Tier #	2				
38			10CFR55.	Group #	1				
Taxonomy:	2	1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis	Importance Rating	2.8					
System Title:	Engineered Safety Features Actuation	System Number	013	K/A:	2.1.25				

### Question:

Recovery actions for a large break LOCA on Unit 2 are in progress using 2202.003 Unisolated LOCA section with the following conditions:

- \* RCS pressure steady at 240 psia
- \* RVLMS level 03 indicates WET
- \* SIAS components actuated one hour ago
- \* RAS actuates with RWT level at 6%
- \* CET temperature indication starts to slowly rise after the RAS

Given these conditions, adequate core heat removal could be verified using \_\_\_\_\_.

- A. EOP Attachment 16, RAS Verification
- B. EOP Exhibit 2, HPSI Flow Curve
- C. EOP Attachment 2, SIAS Verification
- D. EOP Exhibit 3, LPSI Flow Curve

### Answer:

B. EOP Exhibit 2, HPSI Flow Curve

### Notes:

LPSI pumps trip with a RAS therefore LPSI flow should be zero. The RAS and SIAS verification attachments only check valve/component positions. Only Exhibit 2 & 3 shows the expected flow for given RCS pressure that is required for Inventory/Heat Removal.

### References:

EOP Exh 2

### Historical Comments:

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**Questions For 2006 RO/SRO Exam**

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22-May-06

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<b>QID:</b>	0577	<b>Rev:</b>	0	<b>Rev Date:</b>	5/4/2006	<b>Lic Level:</b>	R	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	Source:	New 2006	<b>10CFR55</b>	41.7	<b>Tier #</b>	2			
39			<b>10CFR55</b>		<b>Group #</b>	1			
<b>Taxonomy:</b>	1	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>		<b>Importance Rating</b>	3.2*				
<b>System Title:</b>	Containment Cooling			<b>System Number</b>	022	<b>K/A:</b>	A4.02		

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**Question:**

Which of the following control room indications represents the CORRECT response of the Main Chill Water System to an SIAS actuation?

- A. Both Main Chiller breakers, 2A-108 and 2A-208, indicate OPEN on 2C22.
  - B. Both Main Chill Water Pumps indicate idle on 2C22.
  - C. SW to chiller supply valves on 2C16 and 2C17 indicate OPEN.
  - D. Chill Water to Containment isolations on 2C16 and 2C17 indicate CLOSED.
- 

**Answer:**

- A. Both Main Chiller breakers, 2A-108 and 2A-208, indicate OPEN on 2C22.
- 

**Notes:**

SIAS causes SW supply valves to CLOSE and the chiller breakers to OPEN. SIAS does NOT impact chill water pumps or containment isolations.

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**References:**

STM 2-45, section 2.1  
E-2371

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**Historical Comments:**

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**Questions For 2006 RO/SRO Exam**

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22-May-06

<b>QID:</b> 0561	<b>Rev:</b> 0	<b>Rev Date:</b> 5/3/2006	<b>Lic Level:</b> R	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	<b>Source:</b> New 2006	<b>10CFR55:</b> 41.10	<b>Tier #</b> 2		
40		<b>10CFR55:</b>	<b>Group #</b> 1		
<b>Taxonomy:</b> 1	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>		<b>Importance Rating</b> 3.1*		
<b>System Title:</b> Containment Cooling	<b>System Number</b> 022	<b>K/A:</b> A4.04			

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**Question:**

The Containment Cooler 14 Day Test is in progress.

Which of the following describes the sequence for aligning Service Water to the coolers for this test?

- A. Open the inlet bypass solenoid valve to fill cooler, open the cooler outlet, then open the cooler inlet.
  - B. Open cooler inlet valve, open the cooler outlet valve, cycle the inlet bypass valve to verify operation.
  - C. Open the inlet bypass solenoid valve to fill cooler, open the cooler inlet valve, open the cooler outlet valve.
  - D. Open the cooler outlet valve, open the cooler inlet valve, then cycle the inlet bypass valve to verify operation.
- 

**Answer:**

- B. Open cooler inlet valve, open the cooler outlet valve, cycle the inlet bypass valve to verify operation.
- 

**Notes:**

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**References:**2104.033 Supplement 3

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**Historical Comments:**

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## Questions For 2006 RO/SRO Exam

22-May-06

<b>QID:</b> 0562	<b>Rev:</b> 0	<b>Rev Date:</b> 5/3/2006	<b>Lic Level:</b> R	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	<b>Source:</b> New 2006	<b>10CFR55.41.14</b>	<b>Tier #</b> 2		
<b>41</b>		<b>10CFR55.</b>	<b>Group #</b> 1		
<b>Taxonomy:</b> 2	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>		<b>Importance Rating</b> 3.9*		
<b>System Title:</b> Containment Spray	<b>System Number</b> 026	<b>K/A:</b> A3.02			

### Question:

A Recirc Actuation (RAS) will cause Service Water header pressure to \_\_\_\_\_ due to \_\_\_\_\_.

- A. rise; aligning Service Water returns to the ECP
- B. rise; aligning Service Water to the Shutdown Cooling Heat Exchanger
- C. lower; aligning Service Water returns to the ECP
- D. lower; aligning Service Water to the Shutdown Cooling Heat Exchanger

### Answer:

- D. lower; aligning Service Water to the Shutdown Cooling Heat Exchanger

### Notes:

Service water returns are aligned to the ECP by SIAS or MSIS. RAS aligns SW to SDC (spray) HX which will lower SW header pressure due to the increased load.

### References:

STM 2-70 RAS actuation table (page 58/59)

### Historical Comments:



## Questions For 2006 RO/SRO Exam

22-May-06

<b>QID:</b> 0563	<b>Rev:</b> 0	<b>Rev Date:</b> 5/3/2006	<b>Lic Level:</b> R	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	<b>Source:</b> New 2006	<b>10CFR55:</b> 41.4	<b>Tier #</b>	2	
42		<b>10CFR55:</b>	<b>Group #</b>	1	
<b>Taxonomy:</b> 1	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>		<b>Importance Rating</b>	2.5*	
<b>System Title:</b>	Main and Reheat Steam	<b>System Number</b>	039	<b>K/A:</b>	K3.04

### Question:

Consider the following:

- \*100% power
- \*2HS-0352 Pump Turbine Pref Trip Sel switch is selected to "2K2A"
- \*Main Turbine trips due to low lube oil pressure.

Considering the status of BOTH MFPs following the trip, the 'A' MFPT Low Pressure STOP valve will be \_\_\_\_\_ and the 'B' MFPT High Pressure CONTROL valve will be \_\_\_\_\_.

- A. open; open
- B. open; closed
- C. closed; open
- D. closed; closed

### Answer:

C. closed; open

### Notes:

A MFP will trip causing both HP & LP stop valves to close.  
B MFP stays on line, however, since the turbine has tripped there is no low pressure steam available from the MSR so the HP control valve has to open to apply main steam to the turbine.

### References:

STM 2-19-1 sections 1.5.1 through 1.5.4

### Historical Comments:

## Questions For 2006 RO/SRO Exam

22-May-06

<b>QID:</b> 0615	<b>Rev:</b> 0	<b>Rev Date:</b> 5/16/2006	<b>Lic Level:</b> R	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	<b>Source:</b> New 2006	<b>10CFR55:</b> 41.4, 10	<b>Tier #</b> 2		
43		<b>10CFR55:</b>	<b>Group #</b> 1		
<b>Taxonomy:</b> 2	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>		<b>Importance Rating</b> 3.6		
<b>System Title:</b> Main Feedwater	<b>System Number</b> 059	<b>K/A:</b> K3.02			

### Question:

Unit 2 tripped from 100% due to a main turbine malfunction. While performing SPTAs the following occur:

- \* CBOT reports indications of a break on the feedwater line to 'A' SG inside containment
- \* Rupture is determined to be downstream of Main Feedwater check valve 2FW-5A
- \* Both MFW pumps are tripped and all MFW block valves are closed by the CBOT

Given these conditions, 'A' EFW pump \_\_\_\_\_ capable of feeding 'A' SG  
and \_\_\_\_\_ capable of feeding 'B' SG.

- A. is; is
- B. is; is NOT
- C. is NOT; is
- D. is NOT; is NOT

### Answer:

C. is NOT; is

### Notes:

Leak location downstream of the check valve will preclude any FW (main or EFW) from getting to 'A' SG, however, due to block valve redundancy on the EFW header, 'B' SG can still be fed from either EFW pump.

### References:

2202.001 SPTA Tech Guide for step 8.C

### Historical Comments:

## Questions For 2006 RO/SRO Exam

22-May-06

QID:	0207	Rev:	001	Rev Date:	3/11/2000 1:	Lic Level:	R	RO	SRO
Sample Plan Q#	Source:	New 2000	10CFR55.	41.8, 10	Tier #	2			
44			10CFR55.		Group #	1			
Taxonomy:	2	1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis		Importance Rating	3.0				
System Title:	Reactor Trip			System Number	007	K/A:	EK1.06		

### Question:

Which of the following conditions meet safety function criteria to ensure an adequate heat sink for RCS Heat Removal in the Standard Post Trip Actions (SPTA)?

- A. SG levels at 5 % with "A" MFWP in Reactor Trip Override.
- B. SG levels at 10% with EFW Pump 2P7A total flow 615 gpm.
- C. SG levels at 35% with EFW pumps and MFW Pumps NOT available.
- D. SG levels at 95% with "A" MFWP in Reactor Trip Override.

### Answer:

- B. SG levels at 10% with EFW Pump 2P7A total flow 615 gpm.

### Notes:

A is incorrect because level in one SG must be 10 - 90% AND MFWP available.  
B is correct because contingency action says if < 10% the EFW pump with greater than 485 gpm flow.  
C is incorrect because even though level is in 10 - 90% band, no makeup flow available.  
D is incorrect because level is about 10 - 90% range and contingency actions call for MFW pump trip.

### References:

1. Standard Post Trip Actions, 2202.001, Rev 004-00-0, Step 8.A Contingency A.1
2. SPTA Tech Guidelines, 2202.001, Rev 004-00-0, Step 8

### Historical Comments:

2/24/00 - NRC Comments - D is subset of C. Procedures use % level indication vice inches used in question.  
03/11/00 - Rev 001 - Revised all distracters to make level indications in % like procedure and provide more valid distractors.

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**Questions For 2006 RO/SRO Exam**

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22-May-06

<b>QID:</b>	0611	<b>Rev:</b>	0	<b>Rev Date:</b>	5/15/2006	<b>Lic Level:</b>	R	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>		<b>Source:</b>	New 2006	<b>10CFR55.</b>	41.13, 11	<b>Tier #</b>	2		
	45			<b>10CFR55.</b>		<b>Group #</b>	1		
<b>Taxonomy:</b>	1	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>				<b>Importance Rating</b>	2.6*		
<b>System Title:</b>	Auxiliary/Emergency Feedwater				<b>System Number</b>	061	<b>K/A:</b>	K1.09	

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**Question:**

EFW Pump 2P-7A Quarterly Surveillance, 2106.006 Sup 1, is in progress. 2P-7A is aligned to discharge to the flume.

Which of the following is used for the total effluent released calculation?

- A. Chemist sample of 'B' CST and Main Steam, pump run time, and CST volume change over test duration.
  - B. Chemist sample of 'B' CST and SG Blowdown, pump run time, average pump flow over test duration.
  - C. Pump run time, pump average flow, and process radmonitor average values for Main Steam (2RE-1007/1057) and EFW to Flume (2RE-0715).
  - D. Pump run time, CST volume change, and process radmonitor peak values for Main Steam (2RE-1007/1057) and EFW to Flume (2RE-0715).
- 

**Answer:**

- A. Chemist sample of 'B' CST and Main Steam, pump run time, and CST volume change over test duration.
- 

**Notes:**

Chemist samples of Main Steam (for turbine exhaust release) and 'B' CST (for pump effluent to flume release) are used and compared to total turbine run time and volume change in the CST.  
B. SG Blowdown sample and pump flow not used.  
C & D. Process Radmonitors could be used for trending data during the release, but are not used in the chemist's release calculations.

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**References:**

2106.006 Sup 1, step 1.14, 2.62 and 2.65.

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**Historical Comments:**

## Questions For 2006 RO/SRO Exam

22-May-06

QID:	0380	Rev:	001	Rev Date:	10/25/2001	Lic Level:	R	RO	SRO
Sample Plan Q#	Source:	New 2002	10CFR55.	41.5	Tier #	2			
			10CFR55.		Group #	1			
Taxonomy:	2	1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis		Importance Rating	2.5				
System Title:	AC Electrical Distribution System			System Number	062	K/A:	A1.03		

### Question:

Given the following plant conditions:

- \* Emergency Diesel Generator 2DG1 is out of service for maintenance.
- \* The Plant trips from 100% Power.
- \* After completion of SPTAs, Non-Vital 4160 VAC bus 2A1 Locks Out.
- \* All other systems respond as designed.

From the Control Room, what would be the method of controlling Steam Generator pressure using the Steam Dump and Bypass Control System (SDBCS)?

- A. All SDBCS valves downstream of the MSIVs would be available for Manual control.
- B. Only the green powered SDBCS Valves downstream of the MSIVs would be available for Manual control.
- C. All SDBCS Valves downstream of the MSIVs would be available for Automatic control.
- D. Only the green powered SDBCS Valves downstream of the MSIVs would be available for Automatic control.

### Answer:

- B. Only the green powered SDBCS Valves downstream of the MSIVs would be available for Manual control.

### Notes:

With the loss of the Red Train vital buses, we also lose 2Y1 which supplies power to the SDBCS Master Controller and the Red Train Powered SDBCS Controllers 2HIC-0301 and 2HIC-0302 controllers. Therefore the Red Powered SDBCS valves are not available for pressure control and since the Master Controller has lost power, the Green train Powered SDBCS Valves are only available in manual control.

### References:

ANO-2-LP-RO-SDBCS, Revision 9, Objectives 14,15,16, and 17  
STM 2-23, SDBCS, Revision 6, Section 2.11.2 and 2.12  
STM 2-15, Steam Generators and Main Steam, Revision 6, Section 3.2.8 and Figure on page 59.

### Historical Comments:

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**Questions For 2006 RO/SRO Exam**

*22-May-06*

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Added "after the completion of SPTAs" to the stem because the loss of 2A1 at the trip would result in 2CV-0400/0460 deenergized open requiring MSIVs to be closed which invalidates all of the answers. Having the bus lockout after SPTAs will give these valves plenty of time to go closed.  
Truncated the distractors. ClayS 5-18-06

## Questions For 2006 RO/SRO Exam

22-May-06

<b>QID:</b> 0564	<b>Rev:</b> 0	<b>Rev Date:</b> 5/3/2006	<b>Lic Level:</b> R	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	<b>Source:</b> New 2006	<b>10CFR55.</b> 41.7	<b>Tier #</b> 2		
47		<b>10CFR55.</b>	<b>Group #</b> 1		
<b>Taxonomy:</b> 2	1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis		<b>Importance Rating</b> 2.5		
<b>System Title:</b> DC Electrical Distribution	<b>System Number</b> 063	<b>K/A:</b> A2.01			

### Question:

Annunciator 2K01 H-11 "Battery 2D12 Ground" is received in the control room.  
Priority should be given to locating the ground because:

- A. a second ground could result in spurious tripping of equipment.
- B. a low resistance ground causes 2D02 to be inoperable.
- C. a ground causes the current limiter to activate on the charger.
- D. a ground causes elevated hydrogen production in the battery.

### Answer:

- A. a second ground could result in spurious tripping of equipment.

### Notes:

### References:

2107.004 Section 7

### Historical Comments:

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**Questions For 2006 RO/SRO Exam**

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22-May-06

<b>QID:</b>	0603	<b>Rev:</b>	0	<b>Rev Date:</b>	5/12/2006	<b>Lic Level:</b>	R	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	Source:	New 2006	10CFR55.41.8	<b>Tier #</b>	2				
48			10CFR55.	<b>Group #</b>	1				
<b>Taxonomy:</b>	2	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>		<b>Importance Rating</b>	3.2				
<b>System Title:</b>	Emergency Diesel Generator			<b>System Number</b>	064	<b>K/A:</b>	K6.08		

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**Question:**

Consider the following:

- \* 2DG1 is in the 8th hour of a 24 hour full load run after maintenance
- \* 2DG2 is in standby
- \* A Unit 1 AO has just completed a fuel oil tanker truck off-load
- \* Sediment from the tanker entered the Fuel Oil Bulk tank T-25 and caused the outlet filter F-27 to clog

What would be the result of this condition on the Unit 2 Fuel Oil system?

- A. Fuel Oil Day Tank 2T-30A level low alarm.
  - B. Fuel Oil Storage Tank 2T-57A implosion.
  - C. Fuel Oil Storage Tank 2T-57A level low alarm.
  - D. Fuel Transfer Pump 2P-16A D/P Hi alarm.
- 

**Answer:**

C. Fuel Oil Storage Tank 2T-57A level low alarm.

**Notes:**

With 2DG1 running fully loaded, 2T-57A would be starved for makeup and level would lower. 2T-57A is vented to atmosphere to prevent collapse. Components downstream of the storage tank would operate normally.

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**References:**

2203.012U 2K128 1

**Historical Comments:**



## Questions For 2006 RO/SRO Exam

22-May-06

QID:	0590	Rev:	0	Rev Date:	5/9/2006	Lic Level:	R	RO	SRO
Sample Plan Q#	Source:	New 2006	10CFR55.	41.8	Tier #	2			
	49		10CFR55.		Group #	1			
Taxonomy:	2	1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis		Importance Rating	2.7				
System Title:	EDGs			System Number	064	K/A:	K6.07		

### Question:

Consider the following:

- \* 2DG1 Starting Air Tank 2T-31A is depressurized for compressor 2C-4A maintenance
- \* Due to a human error, the drive belts are removed from the 2C-4B air compressor
- \* A loss of offsite power now occurs

Given these conditions, 2DG1:

- A. is NOT capable of starting without a compressor available.
- B. is capable of only one start without a compressor available.
- C. is capable of more than one start but without governor air boost.
- D. is capable of more than one start including one start failure.

### Answer:

D. is capable of more than one start including one start failure.

### Notes:

Each starting air receiver is sized for 5 starts without a compressor OR one start failure (10 sec) plus 2 additional normal starts.

### References:

STM 2-31 section 2.2.1

### Historical Comments:

## Questions For 2006 RO/SRO Exam

22-May-06

<b>QID:</b> 0383	<b>Rev:</b> 000	<b>Rev Date:</b> 10/25/2001	<b>Lic Level:</b> R	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	<b>Source:</b> New	<b>10CFR55:</b> 41.5	<b>Tier #</b>	2	
50		<b>10CFR55:</b>	<b>Group #</b>	1	
<b>Taxonomy:</b> 2	1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis		<b>Importance Rating</b>	2.5	
<b>System Title:</b>	Process Radiation Monitoring System	<b>System Number</b>	073	<b>K/A:</b>	K5.01

### Question:

Given the following plant conditions:

- \* Plant has returned to 100% power from 70% power.
- \* Annunciator 2K12-A1, "LETDOWN RADIATION HI/LO has actuated.
- \* CBOT is directed to monitor RCS Gross and Iodine activities on Letdown Radmonitor Recorder, 2RR-4806, on 2C-22.

If RCS Iodine 131 Activity has caused the alarm, then \_\_\_\_\_ should be suspected but if RCS Gross Activity has caused the alarm, then \_\_\_\_\_ should be suspected.

- A. RCS crud burst; Letdown filter damage
- B. Fuel cladding damage; RCS crud burst
- C. Letdown filter damage; Fuel cladding damage
- D. RCS crud burst; Fuel cladding damage

### Answer:

- B. Fuel cladding damage; RCS crud burst

### Notes:

The differential pressure across the Letdown radiation monitors is driven by the pressure drop across the Letdown filter. The only way Letdown filter damage could cause a rise in RCS activity is if it is located upstream of the radiation monitor. As such they are in parallel to the radiation monitors thus answers A and C are wrong. D is wrong because it is the reverse of the correct answer B.

### References:

ANO-2-LP-RO-RMON, Revision 10, Objective 19  
STM 2-04, CVCS, Revision 12, Section 2.1.3 and the figure on page 62  
STM 2-62, Radiation Monitoring System, Revision 6, Section 2.2.1  
OP-2203.012L, ACA for Letdown Radiation HI/LO, Revision 030-01-0 Window A-1  
OP-2203.020, High RCS Activity, Revision 007-05-0, Step 7 and its associated Technical Guide Step

### Historical Comments:

Reference Exam

51-75

## Questions For 2006 RO/SRO Exam

22-May-06

QID:	0565	Rev:	0	Rev Date:	5/3/2006	Lic Level:	R	RO	SRO
Sample Plan Q#	51	Source:	New 2006	10CFR55.	41.11	Tier #	2		
				10CFR55.		Group #	1		
Taxonomy:	2	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>				Importance Rating	2.5		
System Title:	Process Radiation Monitoring				System Number	073	K/A:	K5.02	

### Question:

While operating at 100% power, S/G Tube Leak Alarm 2K11 J-8 "Trouble/LKRT HI" annunciates in the control room. 10 minutes after the alarm, the following trends on PMS are observed:

- \*'A' SG N-16 (R0200) indicates 51.0 gpd and stable
- \*'B' SG N-16 (R0201) indicates 4.8 gpd and stable
- \*Condenser Off-Gas radiation (R0645) indicates 875 counts and stable

The N-16 value for 'B' SG is \_\_\_\_\_.

- A. the normal background value for 'B' SG
- B. the expected "shine" effect due to the leak on 'A' SG
- C. due to cross-contamination from 'A' SG to 'B' SG
- D. due to a leak developing on 'B' SG

### Answer:

B. the expected "shine" effect due to the leak on 'A' SG

### Notes:

The stable countrate on B N-16 and off gas are indicators that there is no change from the initiating leak on A SG (no new leak on B).  
N-16 half life is too short for cross contamination effects between SGs.  
The proximity of the A & B N-16 detectors causes a 'shine' effect on the unaffected SG detector. The thumbrule is ~ 10%.  
Normal background readings for either detector is <1 gpd.

### References:

### Historical Comments:

## Questions For 2006 RO/SRO Exam

22-May-06

<b>QID:</b>	0579	<b>Rev:</b>	0	<b>Rev Date:</b>	5/5/2006	<b>Lic Level:</b>	R	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	52	<b>Source:</b>	ANO-OPS2-12609	<b>10CFR55.</b>	41.7	<b>Tier #</b>	2		
				<b>10CFR55.</b>		<b>Group #</b>	1		
<b>Taxonomy:</b>	2	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>				<b>Importance Rating</b>	2.9		
<b>System Title:</b>	Service Water				<b>System Number</b>	076	<b>K/A:</b>	K4.02	

### Question:

The following conditions exists:

- \* SW pumps 2P-4A and 2P-4B are in service with 2P-4C in standby.
- \* The reactor trips due to an SIAS actuation.
- \* Coincident with the trip is a loss of off-site power.
- \* Both DGs are now supplying their respective bus.

Given these conditions, SW pump 2P-4C would be \_\_\_\_\_ and 2P-4B would be \_\_\_\_\_.

- A. secured; running
- B. secured; secured
- C. running; secured
- D. running; running

### Answer:

C. running; secured

### Notes:

### References:

STM 2-42 section 3.1

### Historical Comments:

## Questions For 2006 RO/SRO Exam

22-May-06

<b>QID:</b>	0580	<b>Rev:</b>	0	<b>Rev Date:</b>	5/5/2006	<b>Lic Level:</b>	R	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	53	<b>Source:</b>	New 2006	<b>10CFR55.</b>	41.4	<b>Tier #</b>	2		
				<b>10CFR55.</b>		<b>Group #</b>	1		
<b>Taxonomy:</b>	1	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>				<b>Importance Rating</b>	3.2		
<b>System Title:</b>	Instrument Air				<b>System Number</b>	078	<b>K/A:</b>	K4.02	

### Question:

Which of the following statements is TRUE concerning the Unit 1/Unit 2 Instrument Air Discharge Header Cross-connect 2CV-3004?

- A. Valve automatically closes on loss of Unit 2 Instrument Air.
- B. Valve fails AS-IS on loss of instrument AC 2Y1.
- C. Valve automatically opens on loss of Unit 1 Instrument Air.
- D. Valve fails open on loss of instrument AC 2Y1.

### Answer:

D. Valve fails open on loss of instrument AC 2Y1.

### Notes:

### References:

STM 2-48 section 2.14  
P&ID M-2218

### Historical Comments:

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**Questions For 2006 RO/SRO Exam**

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22-May-06

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<b>QID:</b>	0560	<b>Rev:</b>	0	<b>Rev Date:</b>	5/3/2006	<b>Lic Level:</b>	R	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	54	<b>Source:</b>	New 2006	<b>10CFR55</b>	41.4	<b>Tier #</b>	2		
				<b>10CFR55</b>		<b>Group #</b>	1		
<b>Taxonomy:</b>	2	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>				<b>Importance Rating</b>	2.6		
<b>System Title:</b>	Instrument Air/Generic				<b>System Number</b>	G	<b>K/A:</b>	2.2.27	

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**Question:**

The plant is shutdown for refueling with the following conditions:

- \*Fuel off-load is complete
- \*Tilt Pit Gate is installed
- \*Refueling canal level has been lowered 6 inches for vessel inspection activities
- \*A tagging error inadvertently isolates Instrument Air to the SFP gate supply

Which of the following describes the expected indications due to the loss of air?

- A. SFP gate Nitrogen bottle pressure slowly lowering.
  - B. SFP area radiation levels rising.
  - C. SFP Ventilation Exhaust SPING readings rising.
  - D. SFP local air pressure alarm.
- 

**Answer:**

- A. SFP gate Nitrogen bottle pressure slowly lowering.
- 

**Notes:**

There is a local gage but not an alarm.

There will be no inventory loss from the pool because of the normal alignment of the backup N2 bottle for this evolution.

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**References:**

2104.006 section 21  
M-2218 sh 3

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**Historical Comments:**

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**Questions For 2006 RO/SRO Exam**

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22-May-06

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<b>QID:</b>	0551	<b>Rev:</b>	0	<b>Rev Date:</b>	5/2/2006	<b>Lic Level:</b>	R	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>		<b>Source:</b>	New 2006	<b>10CFR55.</b>	41.10	<b>Tier #</b>	2		
	55			<b>10CFR55.</b>		<b>Group #</b>	1		
<b>Taxonomy:</b>	2	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>				<b>Importance Rating</b>	2.9		
<b>System Title:</b>	Containment				<b>System Number</b>	103	<b>K/A:</b>	A2.05	

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**Question:**

The Shift Manager Key Log has initial blocks for "Req'd Surv Initiated" and "Surv Complete". Completion of these blocks verifies \_\_\_\_\_ if the \_\_\_\_\_ is (are) issued in Modes 1-4.

- A. ESF train separation; 2B5/6 cross-tie kirk keys
  - B. EDG operability; 2Y1/2Y2 cross-tie kirk keys
  - C. Containment integrity restored; personnel hatch key
  - D. PPS triannual complete satisfactory; PPS trip bypass key
- 

**Answer:**

C. Containment integrity restored; personnel hatch key

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**Notes:**

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**References:**

Form 1015.005A, notes on page 2

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**Historical Comments:**

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**Questions For 2006 RO/SRO Exam**

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22-May-06

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<b>QID:</b>	0581	<b>Rev:</b>	0	<b>Rev Date:</b>	5/5/2006	<b>Lic Level:</b>	R	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	Source:	New 2006	10CFR55	41.4	<b>Tier #</b>	2			
	56		10CFR55		<b>Group #</b>	2			
<b>Taxonomy:</b>	2	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>		<b>Importance Rating</b>	3.5*				
<b>System Title:</b>	Reactor Coolant			<b>System Number</b>	002	<b>K/A:</b>	A4.01		

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**Question:**

An RCS leakrate calculation has just been performed using the Auto Leakrate program on the plant computer and the "unidentified" leakrate results were notably lower than the previous day's value.

Which of the following would result in this reduction in the Auto Leakrate final calculation?

- A. Quench tank inleakage lower than the previous day.
  - B. Charging pump low pressure packing leakage lower than the previous day.
  - C. RMW Flow Control Valve 2CV-4927 leakby greater than the previous day.
  - D. Letdown Divert Valve 2CV-4826 leakby greater than the previous day.
- 

**Answer:**

C. RMW Flow Control Valve 2CV-4927 leakby greater than the previous day.

---

**Notes:**

Quench tank in-leakage represents the 'known' leakage value input into the calculation. The total would go down but the unknown would not change.  
Charging pump low pressure packing leakage is not an RCS leak.  
More leakby on the divert valve would cause the calculated leak to increase.

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**References:**

2305.002 Limits & Precautions

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**Historical Comments:**

## Questions For 2006 RO/SRO Exam

22-May-06

<b>QID:</b> 0582	<b>Rev:</b> 0	<b>Rev Date:</b> 5/5/2006	<b>Lic Level:</b> R	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	<b>Source:</b> ANO-OPS2-9002	<b>10CFR55:</b> 41.7	<b>Tier #</b> 2		
57		<b>10CFR55:</b>	<b>Group #</b> 2		
<b>Taxonomy:</b> 2	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>		<b>Importance Rating</b> 3.2		
<b>System Title:</b>	Pressurizer Level Control	<b>System Number</b> 011	<b>K/A:</b> K3.03		

### Question:

The plant is at normal full power operation with an instrument failure and the following conditions:

- \* All backup heaters are in automatic and their load center breakers are closed
- \* One charging pump is running
- \* The Channel Selector for pressurizer pressure is selected to 'A'.
- \* The Channel Selector for pressurizer level is selected to 'A'.
- \* The Low Level Cutout Switch is selected to 'A&B'
- \* Pressurizer Pressure is at setpoint

Which of the following alarms would also be in as a result of the instrument failure?.

- A. Control Channel 1 Level Lo
- B. Control Channel 2 Level Lo
- C. Control Channel 1 Level Hi
- D. Control Channel 2 Level Hi

### Answer:

C. Control Channel 1 Level Hi

### Notes:

Results of 2LT4627-1 failing high.

Backup heater breakers closed indicates that it is a high level signal from the controller which is selected to channel A (1).

### References:

2203.012J  
STM 2-3-1  
A2LP-RO-PZR Obj 12

### Historical Comments:

New 2006

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**Questions For 2006 RO/SRO Exam**

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22-May-06

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<b>QID:</b>	0353	<b>Rev:</b>	000	<b>Rev Date:</b>	12/8/2001 1	<b>Lic Level:</b>	R	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	58	<b>Source:</b>	New 2002	<b>10CFR55.</b>	41.7	<b>Tier #</b>	2		
				<b>10CFR55.</b>		<b>Group #</b>	2		
<b>Taxonomy:</b>	1	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>				<b>Importance Rating</b>	3.3		
<b>System Title:</b>	Nuclear Instrumentation System				<b>System Number</b>	015	<b>K/A:</b>	K2.01	

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**Question:**

Given the following plant conditions:

- \* Plant is in Mode 3 coming out of a refueling outage.
- \* 120 VAC Electrical Bus 2RS2 is inadvertently de-energized.

Which ONE of the following instruments would be de-energized?

- A. Startup Channel Number 1 indications.
  - B. Startup Channel Number 2 indications.
  - C. Channel A Excore Log Safety Channel indications.
  - D. Channel D Excore Log Safety Channel indications.
- 

**Answer:**

- B. Startup Channel Number 2 indications
- 

**Notes:**

Channel A Log Safety Power indications and Startup Channel Number 1 indications are powered from 2RS1.  
Channel D Log Safety Channel indications are powered from 2RS4.

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**References:**

ANO-2-LP-RO-NI, Rev 9, Excore Nuclear Instrumentation, Objective 4  
STM 2-67-1, Rev 3, Excore Nuclear Instrumentation, Section 2.3.1  
2203.012J, Rev 028-03-0, Annunciator 2K10 Corrective Actions for 2K10-K5.  
Electrical Print E-2456, Rev 28, Sheet 4  
Electrical Print E-2727, Rev 6, Sheet 8

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**Historical Comments:**

## Questions For 2006 RO/SRO Exam

22-May-06

<b>QID:</b>	0583	<b>Rev:</b>	0	<b>Rev Date:</b>	5/5/2006	<b>Lic Level:</b>	R	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	59	<b>Source:</b>	ANO-OPS2-4627	<b>10CFR55.</b>	41.2	<b>Tier #</b>	2		
				<b>10CFR55.</b>		<b>Group #</b>	2		
<b>Taxonomy:</b>	2	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>				<b>Importance Rating</b>	3.6*		
<b>System Title:</b>	In-Core Temperature Monitor				<b>System Number</b>	017	<b>K/A:</b>	A3.01	

### Question:

Recovery actions for a trip from full power due to a Loss of Offsite Power are in progress with the following conditions:

- \* RCS Pressure is 1500 psia
- \* RCS Thot is 557°F and steady
- \* RCS Tcold is 540°F and steady
- \* Avg CET temperature is 559°F and steady
- \* Upper Head Temp is 600°F and steady
- \* RVLMS Level 02 indicates WET

Natural Circulation \_\_\_\_\_ established and the RCS \_\_\_\_\_ void free.

- A. is; is
- B. is; is NOT
- C. is NOT; is
- D. is NOT; is NOT

### Answer:

B. is; is NOT

### Notes:

Steam Table may be used for determining MTS based on CET value.

### References:

2202.007  
A2LP-RO-ELOOP Obj 5

### Historical Comments:

New 2006

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**Questions For 2006 RO/SRO Exam**

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22-May-06

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<b>QID:</b>	0600	<b>Rev:</b>	0	<b>Rev Date:</b>	5/12/2006	<b>Lic Level:</b>	R	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	Source:	New 2006	<b>10CFR55.</b>	41.4	<b>Tier #</b>	2			
			<b>10CFR55.</b>		<b>Group #</b>	2			
<b>Taxonomy:</b>	2	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>		<b>Importance Rating</b>	2.5				
<b>System Title:</b>	Spent Fuel Pool Cooling			<b>System Number</b>	033	<b>K/A:</b>	K1.02		

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**Question:**

Core off-load is in progress with the following conditions:

- \* 150 of 177 fuel assemblies off-loaded
- \* Both SFP cooling pumps, 2P-40A and 2P-40B, are running
- \* SFP temperature is 128 °F
- \* 2P-40A breaker trips
- \* Shutdown WCO reports that 2P-40A motor appears to be overheated

What action is required for this condition?

- A. Open 2CV-5093 more to lower SDC temperature to supplement SFP cooling.
  - B. Stop fuel movement until Rx Engineering evaluates SFP heat load requirements.
  - C. Align makeup water to the SFP to compensate for more evaporative losses.
  - D. Move fuel assemblies back to the core until 2P-40A is repaired to reduce SFP heat load.
- 

**Answer:**

- B. Stop fuel movement until Rx Engineering evaluates SFP heat load requirements.
- 

**Notes:**

Adjusting SDC temperature will have no effect on the heat removal from the SFP.  
The TRM requirement is based on anticipated heat load. The limits may not be challenged.

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**References:**

2203.002 Entry Conditions and step 1  
TRM 3.9.3 and Bases

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**Historical Comments:**

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**Questions For 2006 RO/SRO Exam**

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22-May-06

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<b>QID:</b>	0599	<b>Rev:</b>	0	<b>Rev Date:</b>	5/11/2006	<b>Lic Level:</b>	R	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	Source:	New 2006	10CFR55.	41.5	<b>Tier #</b>	2			
61			10CFR55.		<b>Group #</b>	2			
<b>Taxonomy:</b>	2	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>		<b>Importance Rating</b>	3.2				
<b>System Title:</b>	Steam Generator			<b>System Number</b>	035	<b>K/A:</b>	K6.01		

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**Question:**

Unit 2 is at 100% power. The Quarterly MSIV Partial Stroke Test is in progress. Due to an operator error, the 'B' MSIV is fully closed.

Given this condition AND before manual or automatic operation of any other system,  
'A' SG steam FLOW would rapidly \_\_\_\_\_ and  
'B' SG LEVEL initially would rapidly \_\_\_\_\_.

- A. rise; lower
  - B. rise; rise
  - C. lower; rise
  - D. lower; lower
- 

**Answer:**

A. rise; lower

---

**Notes:**

This condition would cause an ASGT CPC trip due to the mismatch in SG power. With B MSIV closed, and turbine power stays at 100%, SG A would supply 100% of total steam flow. SG A steam flow would effectively double. The sudden stop in steaming of the B MSIV would initially cause the level to 'shrink'.

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**References:**

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**Historical Comments:**

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**Questions For 2006 RO/SRO Exam**

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22-May-06

<b>QID:</b>	0591	<b>Rev:</b>	0	<b>Rev Date:</b>	5/9/2006	<b>Lic Level:</b>	R	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>		<b>Source:</b>	ANO-OPS2-10638	<b>10CFR55.</b>	41.4	<b>Tier #</b>	2		
	62			<b>10CFR55.</b>		<b>Group #</b>	2		
<b>Taxonomy:</b>	1	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>				<b>Importance Rating</b>	2.7*		
<b>System Title:</b>	Main Turbine Generator				<b>System Number</b>	045	<b>K/A:</b>	A2.17	

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**Question:**

Consider the following:

- \* Unit 2 is at full power.
- \* An electrical fault causes the Power to Load Unbalance (PLUB) circuit to actuate.

Given these conditions, the high pressure turbine \_\_\_\_\_ valves would close in \_\_\_\_\_.

- A. stop; ~ 1 sec
  - B. stop; ~15 sec
  - C. control; ~ 1 sec
  - D. control; ~ 15 sec
- 

**Answer:**C. control; ~ 1 sec

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**Notes:**

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**References:**STM 2-24-1 section 2.2.7

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**Historical Comments:**

New 2006

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**Questions For 2006 RO/SRO Exam**

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22-May-06

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<b>QID:</b>	0612	<b>Rev:</b>	0	<b>Rev Date:</b>	5/15/2006	<b>Lic Level:</b>	R	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	63	<b>Source:</b>	New 2006	<b>10CFR55.</b>	41.12	<b>Tier #</b>	2		
				<b>10CFR55.</b>		<b>Group #</b>	2		
<b>Taxonomy:</b>	1	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>				<b>Importance Rating</b>	2.6		
<b>System Title:</b>	Condensate				<b>System Number</b>	056	<b>K/A:</b>	2.3.1	

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**Question:**

Unit 2 is in Mode 4 following a SGTR event and cooldown to Mode 5 for repair is in progress. Per the actions of Attachment 19, Control of Secondary Contamination, an RP Technician surveying the Turbine Building measures 3 mrem/hr at 30 cm on the south end of Condensate Inlet Filter 2F-807.

Which of the following postings, if any, are required for this dose rate at this location?

- A. High Radiation Area
  - B. Radiation Area
  - C. Hot Particle Area
  - D. Unrestricted Area
- 

**Answer:**

B. Radiation Area

---

**Notes:**

Radiation areas Outside Controlled Access starts at 2.0 mRem/hr.  
2F-807 is located in the turbine building basement.  
Hot particle info not relevant to the given survey data.

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**References:**

1012.017 section 4 definitions

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**Historical Comments:**



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**Questions For 2006 RO/SRO Exam**

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22-May-06

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<b>QID:</b> 0624	<b>Rev:</b> 0	<b>Rev Date:</b> 5/17/2006	<b>Lic Level:</b> R	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	<b>Source:</b> New 2006	<b>10CFR55.41.11</b>	<b>Tier #</b> 2		
64		<b>10CFR55.</b>	<b>Group #</b> 2		
<b>Taxonomy:</b> 1	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>		<b>Importance Rating</b> 2.7		
<b>System Title:</b> Area Radiation Monitoring	<b>System Number</b> 072	<b>K/A:</b> K5.01			

---

**Question:**

Area Radiation Monitors throughout the plant use \_\_\_\_\_ type detectors which have characteristics suitable for \_\_\_\_\_.

- A. Geiger-Mueller tube; general area trending
  - B. Ion chamber tube; general area trending
  - C. Ion chamber tube; remote dose rate surveys
  - D. Geiger-Mueller tube; remote dose rate surveys
- 

**Answer:**

- A. Geiger-Mueller tube; general area trending
- 

**Notes:**

Ion chamber tube detectors are typical to hand held detectors used by operators but are not applicable to the ARM system in the plant.

G-M detectors are not good for dose assessment due to their operating characteristics and by ARM system design are used for general area radiation trending.

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**References:**

STM 2-62 section 1.3  
2105.016 section 3.0 Description

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**Historical Comments:**

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**Questions For 2006 RO/SRO Exam**

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22-May-06

<b>QID:</b>	0584	<b>Rev:</b>	0	<b>Rev Date:</b>	5/8/2006	<b>Lic Level:</b>	R	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	Source:	New 2006	10CFR55	41.8	<b>Tier #</b>	2			
65			10CFR55		<b>Group #</b>	2			
<b>Taxonomy:</b>	2	1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis	<b>Importance Rating</b>			2.9			
<b>System Title:</b>	Fire Protection				<b>System Number</b>	086	<b>K/A:</b>	A1.05	

---

**Question:**

Annunciator 2K11 A9 FIRE ALARM is recieved in the control room. Investigation at 2C-343 fire panel reveals module 2-4-1 (T) 'B' HPSI Pump Area RED alarm is in.

Initially, ponding would NOT be a concern because:

- A. The room sprinkler valve has to be manually actuated at Panel 2C-343.
  - B. There are NO sprinklers in this room.
  - C. The room floor drains would keep up with sprinkler system flow.
  - D. The room sprinkler valve is normally isolated.
- 

**Answer:**

D. The room sprinkler valve is normally isolated.

---

**Notes:**

The sprinkler system for this room is normally isolated to prevent room flooding (2FS-161). The floor drains are normally isolated for train separation. The 'A' ESF room does not have sprinklers.

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**References:**

2203.009 Attachment A  
ANO Pre-Fire Plan for fire zone 2007-LL  
FP-2106 sheet 1  
M-2219 sheet 2

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**Historical Comments:**

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**Questions For 2006 RO/SRO Exam**

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22-May-06

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<b>QID:</b> 0585	<b>Rev:</b> 0	<b>Rev Date:</b> 5/8/2006	<b>Lic Level:</b> R	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	<b>Source:</b> New 2006	<b>10CFR55.41.10</b>	<b>Tier #</b> 3		
66		<b>10CFR55.</b>	<b>Group #</b>		
<b>Taxonomy:</b> 1	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>		<b>Importance Rating</b> 3.7		
<b>System Title:</b> Generic	<b>System Number</b> G	<b>K/A:</b> 2.1.7			

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**Question:**

Mode 1, 100% power lineup. Consider the following:

- \* Night shift, 0230
- \* Annunciator 2K04 B2 "CCAS INOP" alarms.
- \* Both indicating lamps for 2VSF-1C, Containment Cooling Fan, are de-energized.
- \* WCO reports that 2VSF-1C supply breaker, 2B63 L1 was 'trip free' and is now open.
- \* It is recommended that 2B63 L1 be re-closed and 2VSF-1C started until Day Shift maintenance arrives.

2VSF-1C \_\_\_\_\_ be started because \_\_\_\_\_.

- A. should NOT; the control power fuses will need to be changed
- B. should NOT; there is NO urgency for starting the fan
- C. should; it will prevent entry into a Tech Spec LCO
- D. should; the procedure allows one breaker closure prior to maintenance evaluation

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**Answer:**B. should NOT; there is NO urgency for starting the fan

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**Notes:**

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**References:**2107.001 section 14.5 note

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**Historical Comments:**

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**Questions For 2006 RO/SRO Exam**

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22-May-06

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<b>QID:</b>	0396	<b>Rev:</b>	001	<b>Rev Date:</b>	12/6/2001 1	<b>Lic Level:</b>	R	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	Source:	New 2002	10CFR55.		Tier #			3	
67			10CFR55.	43.5	Group #			2.1	
<b>Taxonomy:</b>	1	1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis		<b>Importance Rating</b>				3.3	
<b>System Title:</b>	Conduct of Operations			<b>System Number</b>		<b>K/A:</b>	2.1.22		

---

**Question:**

In accordance with OP 2102.016, Reactor Startup, when will the Shift Manager log into the Station Log that the Unit has entered into Mode 2

Entry in Mode 2 will be when:

- A. All Shutdown Bank CEAs have been fully withdrawn.
- B. Commencing withdrawal of Regulating Group 1 CEAs.
- C. Regulating Group 2 CEAs have been fully withdrawn.
- D. When the ATCO calls the reactor critical.

---

**Answer:**

- C. Regulating Group 2 CEAs have been fully withdrawn

---

**Notes:**

Per the Reactor Startup procedure, OP 2102.016, step 8.5, Mode 2 is entered when the Regulating Group 2 CEAs are fully withdrawn.

---

**References:**

ANO-2-LP-RO-TS, Revision 7, Objective 1  
OP 2102.016, Reactor Startup, Revision 007-02-0, Step 8.5  
Technical Specifications Table 1.1

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**Historical Comments:**

Changed CBOR to ATCO (At the Controls Operator)

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**Questions For 2006 RO/SRO Exam**

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22-May-06

<b>QID:</b>	0586	<b>Rev:</b>	0	<b>Rev Date:</b>	5/8/2006	<b>Lic Level:</b>	R	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	68	<b>Source:</b>	ANO-OPS2-3890	<b>10CFR55.</b>	41.7	<b>Tier #</b>	3		
				<b>10CFR55.</b>		<b>Group #</b>			
<b>Taxonomy:</b>	1	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>				<b>Importance Rating</b>	2.8		
<b>System Title:</b>	Generic				<b>System Number</b>	G	<b>K/A:</b>	2.1.27	

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**Question:**

Which best describes a "cooling group" as related to the Containment Cooling System?

- A. One Spray Pump AND one Containment Cooler.
  - B. Two Containment Coolers for a given Service Water Header.
  - C. Two Containment Coolers with one of them in each Service Water header.
  - D. One Spray Pump AND two Containment Coolers for a given Service Water Header.
- 

**Answer:**

- B. Two Containment Coolers for a given Service Water Header.
- 

**Notes:**

- A & D: Spray is not part of the cooling group. The cooling group is supplemental to the spray system.  
C. The 2 coolers required for the group have to be from the same SW loop
- 

**References:**

TS 3.6.2.3 and bases  
STM 2-9 section 2.1  
Lesson Plan: A2LP-RO-CVENT Objective: 15

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**Historical Comments:**

New 2006

## Questions For 2006 RO/SRO Exam

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<b>QID:</b>	0241	<b>Rev:</b>	002	<b>Rev Date:</b>	3/6/2000 3:3	<b>Lic Level:</b>	R	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	69	<b>Source:</b>	New	<b>10CFR55.</b>		<b>Tier #</b>	3		
				<b>10CFR55.</b>		<b>Group #</b>			
<b>Taxonomy:</b>	1	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>				<b>Importance Rating</b>	3.7	3.6	
<b>System Title:</b>	Generic				<b>System Number</b>	G	<b>K/A:</b>	2.2.1	

### Question:

Which of the following statements correctly describes the position of 4160 VAC ESF Bus cross-tie breakers 2A-310 and 2A-410 prior to going from Mode 5 operation to Mode 4 operation?

- A. Racked down fully with control power energized.
- B. Racked up fully with control power energized.
- C. Racked down to approximately one (1) inch above the floor.
- D. Racked up with racking handle locked to prevent charging closing springs.

### Answer:

- B. Racked up fully with control power energized.

### Notes:

ESF bus x-tie breakers are racked up with springs charged to be available for emergency x-tie from the control room. Train separation is maintained by keeping the handswitches in the control room in PTL.

### References:

1. 2102.001, Plant Pre-heatup and Pre-critical Checklist, Rev 047-02-0, Step 7.8.8.
2. 2107.002, ESF Electrical System Operation, Rev 014-00-0, Step 5.7 and Att. A.
3. STM 2-32-2, High Voltage Electrical Distribution, Rev 3, Section 5.6

### Historical Comments:

02/24/00 - NRC Comment - When would breakers be placed in these positions (C & D).  
03/06/00 - Rev 001 - Added historical comments only. No changes to question after explaining to NRC examiner that C is a position used when taking ESF equipment out of service during power operations and D is not a position that is used at ANO-2.  
5-18-06 changed D distractor to a more credible choice. This position is used on swing component breakers. ClayS

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**Questions For 2006 RO/SRO Exam**

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22-May-06

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<b>QID:</b>	0587	<b>Rev:</b>	0	<b>Rev Date:</b>	5/8/2006	<b>Lic Level:</b>	R	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	70	<b>Source:</b>	ANO-OPS2-881	<b>10CFR55.</b>	41.10	<b>Tier #</b>	3		
				<b>10CFR55.</b>		<b>Group #</b>			
<b>Taxonomy:</b>	1	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>				<b>Importance Rating</b>	2.5		
<b>System Title:</b>	Generic				<b>System Number</b>	G	<b>K/A:</b>	2.2.26	

---

**Question:**

Consider the following:

- \* Unit 2 is in Mode 6
- \* RCS level is 90" for vessel head installation

Given these conditions, \_\_\_\_\_ operable loop(s) of SDC is/are required because \_\_\_\_\_.

- A. two; there is <23 feet of water above the active fuel in the core
  - B. two; local admin controls require two loops when in Mode 6
  - C. one; there is >23 feet of water above the active fuel in the core
  - D. one; Tech Specs require only one loop when in Mode 6
- 

**Answer:**

- A. two; there is <23 feet of water above the active fuel in the core
- 

**Notes:**

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**References:**

TS 3.9.8.2  
1015.008

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**Historical Comments:**

New 2006

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**Questions For 2006 RO/SRO Exam**

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22-May-06

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<b>QID:</b>	0614	<b>Rev:</b>	0	<b>Rev Date:</b>	5/16/2006	<b>Lic Level:</b>	R	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	Source:	New 2006	10CFR55.41.13	<b>Tier #</b>	3				
	71		10CFR55.	<b>Group #</b>					
<b>Taxonomy:</b>	1	1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis	<b>Importance Rating</b>	2.5					
<b>System Title:</b>	Generic	<b>System Number</b>	G	<b>K/A:</b>	2.3.9				

---

**Question:**

Unit 2 is in Mode 5 and preparations for the initial Containment Purge Gaseous Release are in progress.

To test the interlock functions, the control room operator places Containment Purge radmonitor 2RITS-8233 in PULSE CAL and checks \_\_\_\_\_.

- A. Containment Purge Supply and Exhaust Isolations 2CV-8283-1 and 2CV-8285-1 auto close
  - B. SPING 5 Stack Flow on RDACS goes to zero scfm
  - C. Containment Purge Supply and Exhaust Fans 2VSF-2 and 2VEF-15 automatically stop
  - D. Containment Purge Outside Exhaust Valves 2CV-8285-1 and 2CV-8286-2 auto close
- 

**Answer:**

- A. Containment Purge Supply and Exhaust Isolations 2CV-8283-1 and 2CV-8285-1 auto close
- 

**Notes:**

- B. SPING 5 should already be at zero because no purge flow has been started yet.
  - C. The fans are not started until after this test.
  - D. Only one exhaust valve and one supply valve are interlocked with the radmonitor.
- 

**References:**

2104.033 Sup 1 step 4.11

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**Historical Comments:**



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**Questions For 2006 RO/SRO Exam**

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22-May-06

<b>QID:</b>	0552	<b>Rev:</b>	0	<b>Rev Date:</b>	5/2/2006	<b>Lic Level:</b>	R	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	72	<b>Source:</b>	New 2006	<b>10CFR55.</b>	41.13	<b>Tier #</b>	3		
				<b>10CFR55.</b>		<b>Group #</b>			
<b>Taxonomy:</b>	2	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>				<b>Importance Rating</b>	2.7		
<b>System Title:</b>	Generic				<b>System Number</b>	G	<b>K/A:</b>	2.3.11	

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**Question:**

Consider the following:

- \* Unit 1 and Unit 2 are both at 100% Power
- \* Unit 2 waste tank 2T-69A radioactive release is in progress
- \* Excessive debris in the intake canal has caused Unit 1 to secure one circulating water pump and reduce power

What action, if any, should be taken with regard to the 2T-69A release?

- A. Reduce release flow to the value prescribed on the release preliminary report.
  - B. Discontinue the release and resubmit a permit for the new Unit 1 circulating water flow.
  - C. Suspend the release until radmonitor 2RE-2330 trip setpoint is adjusted for the new Unit 1 circulating water flow.
  - D. Continue the release until the desired termination level in 2T-69A is reached.
- 

**Answer:**

- B. Discontinue the release and resubmit a permit for the new Unit 1 circulating water flow.
- 

**Notes:**

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**References:**2104.014 Supplement 1, continuous action step 3.2

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**Historical Comments:**

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## Questions For 2006 RO/SRO Exam

22-May-06

QID:	0613	Rev:	0	Rev Date:	5/15/2006	Lic Level:	R	RO	SRO
Sample Plan Q#	Source:	New 2006	10CFR55.41.10	Tier #	3				
73			10CFR55.	Group #					
Taxonomy:	2	1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis	Importance Rating	3.3					
System Title:	Generic	System Number	G	K/A:	2.4.35				

### Question:

A fire on Unit Aux Transformer has resulted in a unit trip from 100% power. Consider the following:

- \* Unit Aux and SU3 transformers lockout
- \* The Fire Brigade is responding to the fire
- \* Control Room operators implement SPTAs in conjunction with Fire and Explosion AOP
- \* CRS determines the fire is NOT in an Area Affecting Safe Shutdown
- \* 2DG2 starts and aligns to 2A4
- \* 2DG2 Service Water Outlet valve 2CV-1504-2 fails to open (not related to the fire)

As directed by SPTAs, the \_\_\_\_\_ will secure 2DG2 and the \_\_\_\_\_ will locally open 2CV-1504-2.

- A. CBOT; WCO
- B. CBOT; IAO or OAO
- C. IAO or OAO; WCO
- D. IAO or OAO; IAO or OAO

### Answer:

- D. IAO or OAO; IAO or OAO

### Notes:

During a fire, the WCO on the affected unit will respond with the Fire Brigade.  
SPTAs require local shutdown of a running DG with no SW which will be either of the AOs.

### References:

1015.007 Section 6  
2202.001 Step 4G contingency

### Historical Comments:

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## Questions For 2006 RO/SRO Exam

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22-May-06

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<b>QID:</b>	0592	<b>Rev:</b>	0	<b>Rev Date:</b>	5/9/2006	<b>Lic Level:</b>	R	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	Source:	New 2006	10CFR55.41.5	<b>Tier #</b>	3				
74			10CFR55.	<b>Group #</b>					
<b>Taxonomy:</b>	2	1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis	<b>Importance Rating</b>	3.4					
<b>System Title:</b>	Generic	<b>System Number</b>	G	<b>K/A:</b>	2.4.47				

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### Question:

Consider the following:

- \* Main Turbine Trip from full power
- \* Reactor is then manually tripped and SPTAs entered
- \* SDBCS has failed to respond
- \* SG pressures are being maintained at ~ 1070 psia with the Main Steam Safeties
- \* All other systems are responding normally for this condition

Using 2106.007 Exhibit 7, the expected MFRV Bypass position would be \_\_\_\_\_ for proper RTO response.

- A. 0%
- B. 20%
- C. 50%
- D. 70%

---

### Answer:

- C. 50%

---

### Notes:

Reference required for this question.

This is part of the CBOT expected actions for determining RTO status during SPTAs.

The student has to determine that Tave will be high in the band due to MSSVs controlling SG pressure.

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### References:

STM 2-69 section 3.3

2106.007 Exhibit 7

2202.010 Exhibit 7

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### Historical Comments:

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**Questions For 2006 RO/SRO Exam**

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22-May-06

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<b>QID:</b> 0588	<b>Rev:</b> 0	<b>Rev Date:</b> 5/8/2006	<b>Lic Level:</b> R	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	<b>Source:</b> ANO-OPS2-4551 Mod	<b>10CFR55:</b> 41.1	<b>Tier #</b>	3	
75		<b>10CFR55:</b>	<b>Group #</b>		
<b>Taxonomy:</b> 2	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>		<b>Importance Rating</b>	4.0	
<b>System Title:</b> Generic	<b>System Number</b>	G	<b>K/A:</b>	2.4.49	

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**Question:**

A reactor startup is in progress with reactor power at 1E-3%. The operator performing the startup withdraws Group 6 CEAs for the approach to the point of adding heat. Power is rising steadily at a rate of 1.8 dpm.

What action is required?

- A. Manually trip the reactor from 2C-03.
  - B. Insert Group 6 CEAs to obtain a startup rate < 1.0 dpm.
  - C. Allow power to continue to rise to the point of adding heat.
  - D. Initiate Emergency Boration using 2202.010 Exhibit 1.
- 

**Answer:**

- B. Insert Group 6 CEAs to obtain a startup rate < 1.0 dpm.
- 

**Notes:**

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**References:**

2101.016 step 5.10

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**Historical Comments:**

New 2006

Reference Exam

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## Questions For 2006 RO/SRO Exam

22-May-06

<b>QID:</b>	0625	<b>Rev:</b>	0	<b>Rev Date:</b>	5/18/2006	<b>Lic Level:</b>	S	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	76	<b>Source:</b>	New 2006	<b>10CFR55.</b>		<b>Tier #</b>			1
				<b>10CFR55.</b>	43.5	<b>Group #</b>			1
<b>Taxonomy:</b>	2	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>				<b>Importance Rating</b>			3.0
<b>System Title:</b>	Reactor Trip Stabilization/Recovery				<b>System Number</b>	007	<b>K/A:</b>	2.1.19	

### Question:

Consider the following:

- \* Reactor Trip Recovery EOP, 2202.002 is being implemented following an unplanned trip from 100%
- \* A plant cooldown is in progress
- \* 2K10 E-2, CHANNEL 1 MARG TO SAT LO alarms
- \* Margin to SAT chart recorder 2XR-4612 is NOT updating
- \* SPDS indication for margin to saturation on the SFD screen is 35 °F
- \* Channel 1 Margin to Sat Calculator locally indicates a flashing 28 °F
- \* Channel 2 Margin to Sat Calculator locally indicates a steady 40 °F

Which of the following actions should be taken for these indications?

- A. Secure RCPs and enter 2203.013 Natural Circulation Operation.
- B. Continue the cooldown and refer to TS 3.3.3.6 Post-Accident Instrumentation.
- C. Rediagnose using 2202.010 Exhibit 8 Diagnostic Actions.
- D. Restore saturation margin until all indicators are above 30 °F.

### Answer:

- B. Continue the cooldown and refer to TS 3.3.3.6 Post-Accident Instrumentation.

### Notes:

The flashing readout on the local indicator means the calculator is malfunctioning. Adequate MTS can be verified by using the SPDS computer point when in the EOP. 30 °F is required to maintain safety function. Since >30 °F can be validated then no other actions are required.

### References:

2203.012J ACA for 2K10 E-2

### Historical Comments:

## Questions For 2006 RO/SRO Exam

22-May-06

<b>QID:</b>	0224	<b>Rev:</b>	000	<b>Rev Date:</b>	2/6/2000 8:5	<b>Lic Level:</b>	S	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	77	<b>Source:</b>	New	<b>10CFR55</b>	NA	<b>Tier #</b>			1
				<b>10CFR55</b>	43.5	<b>Group #</b>			1
<b>Taxonomy:</b>	2	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>				<b>Importance Rating</b>			4.8
<b>System Title:</b>	Steam Generator Tube Rupture				<b>System Number</b>	038	<b>K/A:</b>	EA2.02	

### Question:

After a Reactor Trip the following parameter values and trends are noted:

- \* Pressurizer Level is 0%.
- \* RCS Pressure is 1500 psia and lowering.
- \* RCS Tcold is 530 °F and slowly trending down.
- \* Containment pressure is 14.3 psia and steady.
- \* Containment Average Temperature is 105 °F and lowering.
- \* 'A' Main Steam Line Radiation Monitor 2RITS-1007 is in alarm and trending up.
- \* "A" Steam Generator Level is 20% and dropping slowly.
- \* "B" Steam Generator Level is 5% and dropping slowly.

Assuming that all other equipment responded as designed, determine the events in progress.

- A. Main Steam Line Break and Loss of Coolant Accident inside Containment.
- B. Main Steam Line Break outside Containment and isolated LOCA in Letdown.
- C. Steam Generator Tube Rupture and isolated LOCA in the Letdown System.
- D. Main Steam Line Break outside Containment and Steam Generator Tube Rupture.

### Answer:

- D. Main Steam Line Break outside Containment and Steam Generator Tube Rupture.

### Notes:

### References:

2202.001, Standard Post Trip Action, Rev 004-00-0, Diagnostic Actions

### Historical Comments:

## Questions For 2006 RO/SRO Exam

22-May-06

<b>QID:</b>	0578	<b>Rev:</b>	0	<b>Rev Date:</b>	5/4/2006	<b>Lic Level:</b>	S	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	78	<b>Source:</b>	New 2006	<b>10CFR55.</b>		<b>Tier #</b>			1
				<b>10CFR55.</b>	43.2, 5	<b>Group #</b>			1
<b>Taxonomy:</b>	2	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>				<b>Importance Rating</b>			4.2
<b>System Title:</b>	SGTR				<b>System Number</b>	038	<b>K/A:</b>	EA2.12	

### Question:

SGTR in progress on 'B' SG with the following conditions:

- \* RCS Thot is 540 °F with a cooldown in progress
- \* 2K04 K9, MSIV Solenoid Trouble alarm actuates
- \* Investigation reveals that DC power is lost to 2SV-1010-2A and 2SV-1060-2A due to a blown fuse in 2C16

Considering the loss of power to the 'B' MSIV operating solenoid (2SV-1060-2A), 'B' MSIV operability \_\_\_\_\_ challenged, and the MSIV \_\_\_\_\_ be closed from the control room to isolate 'B' SG.

- A. is; can
- B. is; can not
- C. is not; can
- D. is not; can not

### Answer:

- A. is; can

### Notes:

Either of the redundant/independent SVs will close the MSIV. Operability is challenged because of the loss of redundancy to perform the safety function of closing the MSIV.

### References:

ACA 2203.012D  
STM 2-15  
E-2160

### Historical Comments:



## Questions For 2006 RO/SRO Exam

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<b>QID:</b>	0626	<b>Rev:</b>	0	<b>Rev Date:</b>	5/18/2006	<b>Lic Level:</b>	S	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	79	<b>Source:</b>	New 2006	<b>10CFR55.</b>		<b>Tier #</b>			1
				<b>10CFR55.</b>	43.5	<b>Group #</b>			1
<b>Taxonomy:</b>	2	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>				<b>Importance Rating</b>			3.3
<b>System Title:</b>	Station Blackout				<b>System Number</b>	055	<b>K/A:</b>	2.2.20	

### Question:

Consider the following:

- \* 2DG2 out of service for governor repairs
- \* Severe weather causes loss of offsite power and plant trip from 100% power
- \* 2K08-H3, 2A3 L.O. RELAY FAILURE alarm is in due to a bus fault
- \* The AACG is unavailable due to wind damage to the radiator
- \* Station Blackout EOP, 2202.008, is being implemented
- \* SAE Emergency Class has been declared due to Blackout lasting more than 15 minutes
- \* ERO is fully staffed and Emergency Direction and Control has been shifted to the EOF

The \_\_\_\_\_ is responsible for developing the recovery strategy and the \_\_\_\_\_ is responsible for implementing the plan.

- A. Shift Manager; Work Week Manager
- B. EOF Director; Maintenance Manager
- C. OSC Director; Shift Manager
- D. TSC Director; OSC Director

### Answer:

- D. TSC Director; OSC Director

### Notes:

- A. Would be correct for the initial response before the OSC is manned
- B. EOF director has ED & C but management of mitigation activities falls on the TSC director
- C. The OSC will assign personnel to work the plan developed by the TSC director. The SM will assist in implementation but his responsibility is maintaining safety functions and EOP implementation.

### References:

1903.033 steps 4.1, 5.2, 5.4 and 5.8

### Historical Comments:

## Questions For 2006 RO/SRO Exam

22-May-06

<b>QID:</b>	0616	<b>Rev:</b>	0	<b>Rev Date:</b>	5/17/2006	<b>Lic Level:</b>	S	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	80	<b>Source:</b>	New 2006	<b>10CFR55.</b>		<b>Tier #</b>			1
				<b>10CFR55.</b>	43.5	<b>Group #</b>			1
<b>Taxonomy:</b>	2	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>				<b>Importance Rating</b>			2.6*
<b>System Title:</b>	Loss of Instrument Air				<b>System Number</b>	065	<b>K/A:</b>	AA2.02	

### Question:

Given the following:

- \* The plant is at full power.
- \* Annunciator 2K12-A8, INSTR AIR PRESS HI/LO comes in.
- \* Instrument Air Header pressure has lowered to 75 psig and dropping.
- \* The Loss of Instrument Air AOP 2203.021 has been entered.
- \* A local check of the Instrument Air Header flow indication shows 450 SCFM on 2FI-3001.

Which of the following actions should be directed to prevent inadvertent repositioning of certain plant components that would cause a plant transient when IA header pressure is restored?

- A. Take Steam Generator 'A' and 'B' MSIV Hand Switches 2CV-1060 and 2CV-1010 on 2C-16/17 to CLOSE.
- B. Take the SG Blowdown Inside Containment Isolation Hand Switches for 2CV-1015 and 2CV-1065 on 2C02 to CLOSE.
- C. Take the SDBCS Turbine Bypass Valves 2CV-302, 2CV-303, and 2CV-306 Permissive Switches on 2C02 to OFF.
- D. Take the Hand Indicating Controllers for the 'A' and 'B' FW Reg Valve Bypass Valves 2CV-0753 and 2CV-0744 on 2C02 to Manual and 100% Output.

### Answer:

- C. Take the SDBCS Turbine Bypass Valves 2CV-302, 2CV-303, and 2CV-306 Permissive Switches to OFF.

### Notes:

450 scfm identifies that a system rupture exists and future actions to isolate the rupture will cause sudden repressurization.

Distracter A is incorrect because taking this action although called for in the attachment would cause a severe plant transient and should not be taken.

Distracter B is incorrect because the inside containment isolations are Motor Operated Valves and the attachment calls for the outside containment isolations which are air operated valves.

Distracter D is incorrect because the attachment calls for Manual and 0% output. 100% output would cause a plant transient.

### References:

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<b>QID:</b>	0617	<b>Rev:</b>	0	<b>Rev Date:</b>	5/17/2006	<b>Lic Level:</b>	S	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	Source:	New 2006	10CFR55.		Tier #			1	
81			10CFR55.	43.5	Group #			1	
<b>Taxonomy:</b>	2	1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis	<b>Importance Rating</b>					4.1	
<b>System Title:</b>	Loss of Instrument Air				<b>System Number</b>	065	<b>K/A:</b>	AA2.05	

### Question:

Given the following:

- \* The plant is at full power.
- \* Annunciator 2K12-A8, INSTR AIR PRESS HI/LO comes in.
- \* Instrument Air Header pressure has lowered to 64 psig and dropping.
- \* The Loss of Instrument Air AOP 2203.021 has been entered.
- \* CNTMT Chill Water Isolation Valves 2CV-3581-1 and 2CV-3852-1 have failed CLOSED.
- \* I&C has commenced monitoring CEA CEDM Coil Temperatures and reports that CEA #1 Coil Temperature indicates 461 °F and is slowly rising.
- \* Restoration of Instrument Air is not imminent.

Which of the following actions should be taken based on these conditions?

- A. Immediately trip the Reactor and Perform Standard Post Trip Actions (SPTAs).
- B. Commence a Plant Shutdown with minimum use of CEA Group 'P' for ASI control.
- C. Immediately trip the Reactor and align Service Water to the Containment Coolers.
- D. Commence a Plant Shutdown with minimum use of CEA Group '5' for ASI control.

### Answer:

- B. Commence a Plant Shutdown with minimum use of CEA Group 'P' for ASI control.

### Notes:

Distracter A and C are incorrect because tripping the Reactor is called for in the procedure only after Coil temperature rises above 500 °F.  
Distracter D is incorrect because CEA Group 5 should not be used for ASI control during power operations.

### References:

2203.021 Step 13 Contingency Step B.6

### Historical Comments:

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<b>QID:</b> 0618	<b>Rev:</b> 0	<b>Rev Date:</b> 5/17/2006	<b>Lic Level:</b> S	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	<b>Source:</b> New 2006	<b>10CFR55:</b>	<b>Tier #</b>		1
82		10CFR55. 43.2	<b>Group #</b>		2
<b>Taxonomy:</b> 2	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>		<b>Importance Rating</b>		3.8
<b>System Title:</b> Dropped Control Rod	<b>System Number</b> 003	<b>K/A:</b> AA2.03			

### Question:

Given the following:

- \* Plant is at full power.
- \* Annunciator "CEAC 1/2 CEA DEVIATION" (2K04-J5/J6) comes in.
- \* PMS Pulse Counter CEA positions indicate all CEAs are 150 inches withdrawn.
- \* CEAC #1 indicates CEA #17 at 133.25 inches withdrawn.
- \* CEAC #2 indicates CEA # 17 at 134.00 inches withdrawn.
- \* I&C has been called to investigate and are setting up their equipment.

Which of the following actions is correct?

- A. Using OP 2105.001, CPC/CEAC Operations, Attachment F, decode CPC PIDs 415 through 418 to determine which sensors have failed.
- B. Enter T.S 3.1.3.1, CEA Position, and commence withdrawing CEA #17 to within 7 inches of its group average in 15 minutes.
- C. Using 2102.004, Power Operations, commence a plant shutdown within 1 hour of the CEA Deviation and be in Hot Standby in the next 7 hours.
- D. Enter T.S. 3.1.3.1 CEA Position, and commence a power reduction within 15 minutes of the CEA deviation alarm.

### Answer:

- D. Enter T.S. 3.1.3.1 CEA Position, and commence a power reduction within 15 minutes of the deviation.

### Notes:

Distracter A is incorrect because we do not have a sensor failure. The PMS CEA positions have to be manually reset to CEAC indications if the CEA does not drop all the way into the core.  
Distracter B is incorrect because the CEA should not be moved until power is reduced IAW AOP 2203.003 Attachment A for power peaking concerns during recovery.  
Distracter C is incorrect because this in an abnormal condition power reduction must commence in 15 minutes.

### References:

T.S 3.1.3.1, AOP 2203.003, CEA Malfunction, Entry Conditions and Step 19.

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<b>QID:</b>	0619	<b>Rev:</b>	0	<b>Rev Date:</b>	5/17/2006	<b>Lic Level:</b>	S	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	83	<b>Source:</b>	New 2006	<b>10CFR55.</b>		<b>Tier #</b>			1
				<b>10CFR55.</b>	43.2, 5	<b>Group #</b>			2
<b>Taxonomy:</b>	2	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>				<b>Importance Rating</b>			4.4
<b>System Title:</b>	Emergency Boration				<b>System Number</b>	024	<b>K/A:</b>	AA2.02	

### Question:

Consider the following:

- \* A rapid plant shutdown from 100% is in progress using 2102.004, Power Operations
- \* AOP 2203.038, Primary to Secondary Leakage has been entered due to a 28 gpm tube leak in 'B' SG
- \* The At the Controls Operator (ATCO) is using CEA group 'P' for ASI control
- \* CEA Group 'P' has been inserted to 128 inches withdrawn
- \* Plant Power is currently 78% and lowering

Which of the following actions should be taken? (Reference provided)

- A. Continue to reduce Power and commence tracking the time that CEA Group 'P' has been in the Long Term Steady State Insertion Limit.
- B. Direct the ATCO to stop inserting Group 'P' CEAs and use Group 6 CEAs for ASI control during the rest of the down power.
- C. Direct the ATCO to stop inserting Group 'P' CEAs and commence Emergency Boration due to exceeding Transient Insertion Limits.
- D. Continue to reduce power and restore CEA Group 'P' to above 135 inches withdrawn in the next 4 hours and document with a condition report.

### Answer:

- C. Direct the ATCO to stop inserting Group 'P' CEAs and commence Emergency Boration due to exceeding Transient Insertion Limits.

### Notes:

Question will require a copy of the COLR Figure 3 as a reference.

Distracter A is incorrect because the transient insertion limit requires immediate boration if the Reactor is critical and the Long term Steady State insertion limit begins at 112.5 inches withdrawn only when less than 65% power.

Distracter B is incorrect because the transient insertion limit requires immediate boration if the Reactor is critical.

Distracter D is incorrect IAW the T.S. 3.1.3.6 Action a. which calls for CEA restoration in 2 hours along with

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the more restrictive requirement to emergency borate.

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### References:

T.S 3.1.3.6, COLR Figure 3

AOP 2203.032, Emergency Boration, Entry Conditions.

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### Historical Comments:

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<b>QID:</b> 0631	<b>Rev:</b> 000	<b>Rev Date:</b> 5/19/2006 1:	<b>Lic Level:</b> S	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	<b>Source:</b> New 2006	<b>10CFR55:</b>	<b>Tier #</b>		1
84		10CFR55. 43.5, 6	<b>Group #</b>		2
<b>Taxonomy:</b> 2	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>		<b>Importance Rating</b>		4.3
<b>System Title:</b>	Loss of Containment Integrity	<b>System Number</b>	069	<b>K/A:</b>	AA2.01

### Question:

Given the following conditions:

- \* Core off load in progress.
- \* Steam Generator secondary manways are removed.
- \* The Steam Generator primary side manways are open with nozzle dams installed.
- \* There have been NO Containment Closure Instruction forms, 1015.008 Att H, issued for any work currently in progress.

Which of the following items noted during a plant tour would require suspending core alterations and movement of irradiated fuel in Containment?

- A. Containment Purge Exhaust valves open with 2VEF-15 running.
- B. Equipment Hatch open.
- C. Both Personnel Airlock doors open.
- D. Main Steam Safety valve 2PSV-1056 removed for bench testing.

### Answer:

D. Main Steam Safety valve 2PSV-1056 removed for bench testing.

### Notes:

Att H referenced in the stem is the instruction sheet inserted in a WO package (by an SRO) for administrative control of the penetration during maintenance. D. is correct because this job should have an Att H issued for it. A. This is the normal ventilation lineup during refuel and is specifically exempted by Att G B & C. These penetrations are controlled by Att I, emergency closure of equipment hatch and personnel lock.

### References:

1015.008, Att G step 2, 11, 14, 20, Att H  
Tech Spec 3.9.4, (Refueling Operations, Containment Building Penetrations)  
ANO-2-LP-RO-SDCC, Obj 5.0  
ANO-2-LP-RO-EAOP, Rev 03, Obj 6.0  
ANO-2-LP-SRO-AOP, Obj 8.0

### Historical Comments:

## Questions For 2006 RO/SRO Exam

22-May-06

<b>QID:</b> 0609	<b>Rev:</b> 001	<b>Rev Date:</b> 10/15/2001	<b>Lic Level:</b> S	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	<b>Source:</b> Modified 0161	<b>10CFR55:</b>	<b>Tier #</b>		
85		43.4	<b>Group #</b>		
<b>Taxonomy:</b> 2	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>		<b>Importance Rating</b>		
<b>System Title:</b> Functional Recovery	<b>System Number</b> E09	<b>K/A:</b> 2.3.10			

### Question:

Functional Recovery, 2202.009, Entry Section is in progress with the following plant conditions:

- \* 'A' Main Steam Line Radiation 25 mr/hr and trending up.
- \* RCS pressure is 1500 psia.
- \* Containment pressure is 16 psia and slowly rising.
- \* Containment Hi Range Radiation Monitors read 1300 R/Hr and trending up.
- \* Containment Low Range Radiation Monitors are in alarm and at maximum scale.
- \* Systems/components actuated as designed.

Which one of the following actions should be performed?

- A. Manually isolate letdown.
- B. Manually actuate CCAS.
- C. Manually actuate CIAS.
- D. Manually actuate CSAS.

### Answer:

C. Manually actuate CIAS.

### Notes:

SIAS would already have automatically actuated, therefore L/D would already have isolated. CCAS would have actuated at the same RCS pressure as SIAS. CIAS should be manually actuated due to high Containment Radiation to preclude the possibility of releases from containment. CSAS should not be manually actuated at the existing containment pressure and trend in order to maintain RCPs running for forced circ cooldown as long as possible.

### References:

2203.012J, Revision 028-04-0, 2K10-A6, (Alarm 2K10 Corrective Action for CNTMT Radiation HI)  
ANO-2-LP-RO-ELOCA, Revision 05, Objective 6.0

### Historical Comments:

New 2006



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<b>QID:</b>	0620	<b>Rev:</b>	0	<b>Rev Date:</b>	5/17/2006	<b>Lic Level:</b>	S	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	86	<b>Source:</b>	New 2006	<b>10CFR55.</b>		<b>Tier #</b>			2
				<b>10CFR55.</b>	43.2	<b>Group #</b>			1
<b>Taxonomy:</b>	2	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>				<b>Importance Rating</b>			3.5
<b>System Title:</b>	Reactor Coolant Pump				<b>System Number</b>	003	<b>K/A:</b>	2.2.18	

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**Question:**

Consider the following:

- \* The plant is shutdown and cooling down for 2R18 Refueling Outage
- \* RCPs 2P-32A and 2P-32C are in operation for acid reducing chemistry.
- \* Pressurizer level is 50%.
- \* RCS Tcold is 270 °F.
- \* RCS Pressure is 270 psia.
- \* Preparations are being made to place SDC in service.
- \* Maintenance has requested that all Pressurizer Heaters be tagged out in accordance with the Pressurizer replacement outage schedule.

Which of the following would be correct in response to this request from maintenance?

- A. Do not allow the tag out to be hung because PZR Heaters are being used for RCS pressure control and RCP operations.
  - B. Allow the tag out to be hung to ensure the outage schedule timeline maintained.
  - C. Do not allow the tag out to be hung because PZR Heaters are still required in Mode 4.
  - D. Allow the tag out to be hung since RCS pressure is already being reduced to atmospheric pressure to meet SDC entry requirements.
- 

**Answer:**

- A. Do not allow the tag out to be hung because PZR Heaters are being used for RCS pressure control and RCP operations.
- 

**Notes:**

OP 1015.016H, RCS Pressure VS Temperature Limits for Operating RCPs should be provided as a reference for this question.

Distracter B is incorrect because RCS pressure does not need to go any lower or RCP NPSH requirements will not be met.

Distracter C is incorrect because the PZR Heaters are only required in Modes 1, 2 and 3.

Distracter D is incorrect because SDC entry conditions already exist.

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### References:

1015.016H, RCS Pressure VS Temperature Limits for Operating RCPs

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### Historical Comments:

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<b>QID:</b>	0627	<b>Rev:</b>	0	<b>Rev Date:</b>	5/18/2006	<b>Lic Level:</b>	S	<b>RO</b>		<b>SRO</b>	
<b>Sample Plan Q#</b>	87	<b>Source:</b>	New 2006	<b>10CFR55.</b>		<b>Tier #</b>				2	
				<b>10CFR55.</b>	43.4, 5	<b>Group #</b>				1	
<b>Taxonomy:</b>	2	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>					<b>Importance Rating</b>			3.2*	
<b>System Title:</b>	Emergency Core Cooling					<b>System Number</b>	006	<b>K/A:</b>	A2.09		

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**Question:**

A large break LOCA event is in progress on Unit 2 with the following conditions:

- \* Loss of Coolant Accident EOP, 2202.003 section 3 Unisolated LOCA is being implemented
- \* RAS actuated 20 minutes ago with RWT level at 5.5%
- \* RP reports that contact readings on the pipe downstream of ESF Header Recirc Isolation Valve, 2CV-5628-2, are 30 mrem/hr and rising

Which of the following is required?

- A. Direct the RP to post the area since this is an expected condition for a RAS actuation.
  - B. Direct the CBOT to place all HPSI Pump handswitches in Pull-to-Lock.
  - C. Direct the WCO to unlock and close 2BS-26, Recirc/Test Line Inlet Isolation.
  - D. Direct the CBOT to flush the line by cycling 2P-89A Recirc Isolation 2CV-5126-1.
- 

**Answer:**

- C. Direct the WCO to unlock and close 2BS-26, Recirc/Test Line Inlet Isolation.
- 

**Notes:**

- A. This is NOT expected. The line is checked to verify no backleakage to RWT to prevent an unmonitored release through the RWT vent.
  - B. Stopping the HPSI pumps may stop the backleakage but will also interrupt core cooling.
  - D. This flush would only make the rad levels and release worse.
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**References:**

2202.003 step 21.K.2) contingency step  
STM 2-08 section 2.1

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**Historical Comments:**

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<b>QID:</b> 0621	<b>Rev:</b> 0	<b>Rev Date:</b> 5/17/2006	<b>Lic Level:</b> S	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	<b>Source:</b> New 2006	<b>10CFR55:</b>	<b>Tier #</b>		
88		10CFR55, 43.5	<b>Group #</b>		
<b>Taxonomy:</b> 2	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>		<b>Importance Rating</b>		
<b>System Title:</b> Containment Spray	<b>System Number</b> 026	<b>K/A:</b> 2.4.46			

### Question:

Consider the following:

- \* The plant has tripped due to a large break LOCA.
- \* LOCA EOP 2203.003 has been entered.
- \* Containment Pressure is 47 psia and rising.
- \* RWT has lowered to the Recirculation Actuation Signal (RAS) setpoint.
- \* 2 minutes after the RAS, Alarm 2K05 E-1, 'B' SPRAY HDR FLOW LO comes in.

Which of the following is a correct statement based on these conditions?

- A. This is an expected alarm for these conditions as spray flow would lower after a RAS due to the position of the Spray Header Recirc valve to the RWT.
- B. This is an expected alarm for these conditions as spray flow should lower below alarm setpoint due to the rise in Containment pressure.
- C. This is NOT an expected alarm because 'B' Spray Pump Breaker, 2A-404, would automatically open with the RAS.
- D. This is NOT an expected alarm and all operating ECCS pumps should be monitored for possible suction blockage.

### Answer:

- D. This is NOT an expected alarm and all operating ECCS pumps should be monitored for possible suction blockage.

### Notes:

Distracter A is incorrect because the Recirc valve would close after a RAS raising spray flow.

Distracter B is incorrect because the Spray pump is designed to provide > 2000 gpm flow (alarm setpoint) at full Containment design pressure (~74 psia).

Distracter C is incorrect because the CSAS should keep the Pump Breaker Closed

### References:

2203.012E Alarm for 2K05 E-1.  
2202.003, LOCA EOP Steps 21 and 25.

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<b>QID:</b>	0622	<b>Rev:</b>	0	<b>Rev Date:</b>	5/17/2006	<b>Lic Level:</b>	S	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	89	<b>Source:</b>	New 2006	<b>10CFR55.</b>		<b>Tier #</b>			2
				<b>10CFR55.</b>	43.5	<b>Group #</b>			1
<b>Taxonomy:</b>	2	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>				<b>Importance Rating</b>			3.4*
<b>System Title:</b>	Emergency Feedwater				<b>System Number</b>	061	<b>K/A:</b>	A2.05	

### Question:

Consider the following:

- \* 2DG1 is out of service for its 18 month PMs.
- \* The plant trips from 100% due to a complete loss of Offsite Power.
- \* Both SG levels are 20% and lowering.
- \* EFW Pump 2P-7A trips on over speed and cannot be reset.

Which of the following would be the correct actions to take after completion of SPTAs?

- A. Enter OP 2202.006, Loss of Feedwater EOP, Energize Vital 4160 Volt Bus 2A3 using 2104.037 Attachment E, AAC Generator Emergency Start, and manually start EFW Pump 2P-7B.
- B. Enter OP 2202.007, Loss of Offsite Power, Energize Vital 4160 Volt Bus 2A3 using 2104.037 Attachment E, AAC Generator Emergency Start, and verify EFW Pump 2P-7B automatically starts.
- C. Enter OP 2202.006, Loss of Feedwater EOP, Crosstie Vital 4160 Volt Bus 2A3 from 2A4 using 2107.002, ESF Electrical System Operation, and verify EFW Pump 2P-7B automatically starts.
- D. Enter OP 2202.007, Loss of Offsite Power, Crosstie Vital 4160 Volt Bus 2A3 from 2A4 using 2107.002, ESF Electrical System Operation and manually start EFW Pump 2P-7B.

### Answer:

- A. Enter OP 2202.006, Loss of Feedwater EOP, Energize Vital 4160 Volt Bus 2A3 using 2104.037 Attachment E, AAC Generator Emergency Start, and manually start EFW Pump 2P-7B.

### Notes:

Distracters B and D are incorrect because the Loss of Feedwater Entry Conditions are met and will also provide guidance for restoration of plant power if lost. The Diagnostic Flowchart Exhibit 8 will direct the SRO to the Loss of Feedwater EOP usage.

Distracter C is incorrect because Crosstie of a Vital bus with only one EDG available is only allowed if the equipment were to fail after the bus was energized and was needed to satisfy the core heat removal safety

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function. See 2202.010, EOP Standard Attachment 11 Step 1E. Also procedural usage guidelines are to complete steps in the order written unless bulleted.

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### References:

2202.006, Loss of Feedwater EOP Entry Condition and Step 7.

2202.010, EOP Standard Attachment 11 Step 1D and Exhibit 8, Diagnostics.

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### Historical Comments:

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**Questions For 2006 RO/SRO Exam**22-May-06

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<b>QID:</b>	0604	<b>Rev:</b>	0	<b>Rev Date:</b>	5/15/2006	<b>Lic Level:</b>	S	<b>RO</b>		<b>SRO</b>	
<b>Sample Plan Q#</b>		<b>Source:</b>	New 2006	<b>10CFR55.</b>		<b>Tier #</b>					2
	90			<b>10CFR55.</b>	43.5, 7	<b>Group #</b>					1
<b>Taxonomy:</b>	2	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>				<b>Importance Rating</b>					3.6*
<b>System Title:</b>	Containment					<b>System Number</b>	103	<b>K/A:</b>	A2.04		

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**Question:**

The following plant conditions exist:

- \* Mode 6 with core off load in progress.
- \* The control room receives a report that as a spent fuel assembly was being inserted into the Containment Upender, the Upender inadvertently rotated to the horizontal position.
- \* A lot of bubbles are rising around the fuel assembly in the Upender.
- \* Containment Low Range Rad Monitors on the 404 elevation are indicating a large rise in radiation.

Which of the following actions should be directed for the given conditions?

- A. Have the Containment Evacuation alarm on 2C14 actuated, direct a localized evacuation of the 404 elevation of Containment using 1903.030, Plant Evacuation, and direct Containment Equipment hatch to be set with at least 8 bolts within 30 minutes.
  - B. Have the Containment Evacuation alarm on 2C14 actuated, direct an evacuation of everyone in Containment except those performing Containment closure, and direct Containment Equipment hatch to be set with at least 8 bolts within 1 hour.
  - C. Have the Containment Evacuation alarm on 2C22 actuated, direct an evacuation of everyone in Containment except those performing Containment closure, and direct Containment Equipment hatch to be set with at least 4 bolts within 30 minutes.
  - D. Have the Containment Evacuation alarm on 2C22 actuated, perform a localized evacuation of the 404 elevation of Containment using 1903.030, plant evacuation, and direct Containment Equipment hatch to be set with at least 4 bolts within 1 hour.
- 

**Answer:**

- C. Have the Containment Evacuation alarm on 2C22 actuated, direct an evacuation of everyone in Containment except those performing Containment closure, and direct Containment Equipment hatch to be set with at least 4 bolts within 30 minutes.
- 

**Notes:**

Distracter A is incorrect because the evacuation alarm is activated on the wrong panel, A localized evacuation is performed only if the accident is in the SFP and the equipment hatch only requires a minimum of 4 bolts

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## Questions For 2006 RO/SRO Exam

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22-May-06

Distracter B is incorrect because the evacuation alarm is activated on the wrong panel, the equipment hatch only requires a minimum of 4 bolts and must be secure within 30 minutes.

Distracter D is incorrect because a localized evacuation is performed only if the accident is in the SFP and the equipment hatch must be secured within 30 minutes.

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### References:

OP 2502.001 Attachment M Step 4.2, Refueling Accident Actions.

OP 1015.008, Attachment F, Containment Closure Checklist Note above step 4.0

A2LP-RO-FH Objective 4

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### Historical Comments:



## Questions For 2006 RO/SRO Exam

22-May-06

<b>QID:</b>	0556	<b>Rev:</b>	0	<b>Rev Date:</b>	5/3/2006	<b>Lic Level:</b>	S	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	91	<b>Source:</b>	New 2006	<b>10CFR55:</b>		<b>Tier #</b>			2
				<b>10CFR55:</b>	43.5	<b>Group #</b>			2
<b>Taxonomy:</b>	2	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>				<b>Importance Rating</b>			3.3*
<b>System Title:</b>	Non-Nuclear Instrumentation				<b>System Number</b>	016	<b>K/A:</b>	A2.03	

### Question:

Consider the following:

- \*Plant is manually tripped due to indications of a main steam line break in containment.
- \*A bus lockout on 2B5 causes 2B5 and 2A3 to be deenergized.
- \*2DG1 fails to start.

Which of the following restoration actions would maximize monitoring and control capability in the control room?

- A. Re-close 2A3 normal supply breaker 2A-309 using 2202.005 Excess Steam Demand EOP.
- B. Cross tie 2Y1 and 2Y2 per EOP Standard Attachment 11, Degraded Power.
- C. Energize 2A3 with the AACG using 2104.037 Attachment E, AACG Emergency Start.
- D. Cross tie 2B5 and 2B6 per 2203.045 Loss of 480 Volt Vital Bus AOP.

### Answer:

- B. Cross tie 2Y1 and 2Y2 per EOP Standard Attachment 11, Degraded Power.

### Notes:

2B5/6 cannot be xted because of the lockout on 2B5  
2A3 could be energized as suggested but this would still not energize 2Y1 because of the 2B5 lockout.

### References:

2202.005 step 33  
2202.010 Att 11 step 1.F

### Historical Comments:

## Questions For 2006 RO/SRO Exam

22-May-06

QID:	0606	Rev:	0	Rev Date:	5/15/2006	Lic Level:	S	RO	SRO
Sample Plan Q#	92	Source:	New 2006	10CFR55:		Tier #			2
				10CFR55:	43.4, 5	Group #			2
Taxonomy:	2	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>				Importance Rating			4.1
System Title:	Liquid Radwaste				System Number	068	K/A:	2.4.41	

### Question:

Given the following:

- \* The plant is at full power.
- \* A Liquid Rad waste release of 2T-69A is in progress.
- \* Chemistry calls the Control Room and informs them that their release calculations were in error and 2T-69A activity was too high to release.
- \* The release is terminated.
- \* Chemistry takes lake water samples at the site boundary and performs a dose assessment.
- \* Chemistry determines that the release has exceeded the ODCM limits by a factor of 3.

Which of the following would be the required action to take? (Reference provided)

- A. Declare an NUE and make the required notification within 15 minutes.
- B. Declare an Alert and Make the required notifications within 15 minutes.
- C. Declare an NUE and make the required notification within 1 hour.
- D. Declare an Alert and make the required notification within 1 hour.

### Answer:

- A. Declare an NUE and make the required notification within 15 minutes.

### Notes:

Question will require OP 1903.010 Attachment 2 to be provided as a reference.

Distracter B is incorrect because an alert requires ODCM limits to be exceeded by a factor of 10.

Distracter C and D are incorrect because notification are required to be made in 15 minutes.

### References:

1903.010 Attachment 2 EAL 5.1

### Historical Comments:

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**Questions For 2006 RO/SRO Exam**22-May-06

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<b>QID:</b>	0623	<b>Rev:</b>	0	<b>Rev Date:</b>	5/17/2006	<b>Lic Level:</b>	S	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	93	<b>Source:</b>	New 2006	<b>10CFR55.</b>		<b>Tier #</b>			2
				<b>10CFR55.</b>	43.2	<b>Group #</b>			2
<b>Taxonomy:</b>	2	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>				<b>Importance Rating</b>			3.2
<b>System Title:</b>	Waste Gas Disposal				<b>System Number</b>	071	<b>K/A:</b>	2.3.8	

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**Question:**

Given the following:

- \* The plant is at full power 40 days following a refueling outage
- \* Preparation for a planned release of Gas Decay Tank 2T-18A is in progress
- \* During the source check on the GRW Radiation Monitor, 2RITS-2429, the meter does NOT move up scale.
- \* The Shift Manager declares 2RITS-2429 inoperable.

Which of the following statements is correct?

- A. The release of 2T-18A can NOT be performed until 2RITS-2429 has been returned to service and declared operable.
  - B. The release can be performed with permission obtained from the Operations Manager and the Radiation Protection Manager.
  - C. The release can be performed if the Unit 2 Radwaste Area Exhaust (2VEF-8A/B) SPING 6 is operable and monitored during the release.
  - D. The release can be performed if two gas samples are independently analyzed by chemistry and independent lineup verification of the release path are performed.
- 

**Answer:**

- D. The release can be performed if two gas samples are independently analyzed by chemistry and independent lineup verification of the release path are performed.
- 

**Notes:**

Distracter A is incorrect because the procedure allows alternate method of release per Answer D.

Distracter B is incorrect because it would violate alternate release method requirements.

Distracter C is incorrect because the SPING provide no termination protection and would violate alternate release method requirements.

**References:**2104.022 Supplement 1 Steps 2.6, 3.8, and 3.16.

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## Questions For 2006 RO/SRO Exam

22-May-06

<b>QID:</b> 0633	<b>Rev:</b> 0	<b>Rev Date:</b> 5/19/2006	<b>Lic Level:</b> S	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	<b>Source:</b> ANO-OPS2-3498	<b>10CFR55.</b>	<b>Tier #</b>		3
94		10CFR55. 43.2	<b>Group #</b>		
<b>Taxonomy:</b> 2	1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis	<b>Importance Rating</b>			3.8
<b>System Title:</b> Generic	<b>System Number</b> G	<b>K/A:</b> 2.1.11			

### Question:

Unit 2 is in Mode 1, 100% power operation. Channel "B" Log Power channel fails low due to "B" excore middle detector failure.

Which of the following satisfies the Tech Spec action statement(s)?

- A. Within 1 hour, bypass High Log Power Trip on "B" channel of PPS.
- B. Within 1 hour, bypass High Log Power, High Linear Power, LPD and DNBR trips on "B" channel PPS AND enter action statement for Remote Shutdown Panel Instrumentation.
- C. Within 1 hour, bypass High Log Power in "B" channel PPS AND enter action statement for Remote Shutdown Panel Instrumentation.
- D. Within 1 hour, bypass High Linear Power, LPD and DNBR trips in "B" channel PPS.

### Answer:

- B. Within 1 hour, bypass High Log Power, High Linear Power, LPD and DNBR trips on "B" channel PPS AND enter action statement for Remote Shutdown Panel Instrumentation.

### Notes:

- A & D: Remote shutdown instrument LCO is applicable
- C: LCO action lists multiple functional units for NI failures

### References:

- TS Table 3.3-1 Action 2
- 2203.026 Step 4
- Lesson plan: A2LP-RO-NIMAL Objective: 2 & 3

### Historical Comments:

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**Questions For 2006 RO/SRO Exam**

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22-May-06

<b>QID:</b>	0629	<b>Rev:</b>	0	<b>Rev Date:</b>	5/18/2006	<b>Lic Level:</b>	S	<b>RO</b>		<b>SRO</b>	
<b>Sample Plan Q#</b>		<b>Source:</b>	New 2006	<b>10CFR55.</b>		<b>Tier #</b>					3
	95			<b>10CFR55.</b>	43.5	<b>Group #</b>					
<b>Taxonomy:</b>	1	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>					<b>Importance Rating</b>				3,4
<b>System Title:</b>	Generic					<b>System Number</b>	G	<b>K/A:</b>	2.1.30		

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**Question:**

Given the following:

- \* A Fire in the Control Room renders the Control Room uninhabitable.
- \* AOP 2203.014, Alternate Shutdown has been entered.
- \* Section 3, CRS Follow Up Actions are being completed.
- \* CRS follow up action 26 states the following:  
WHEN EO has EFW pump 2P7A "TRIP & TV" valve (2CV-0336) throttled (EO step 8),  
THEN open 2D24 Breaker 1 "125V DC IN PANEL 2C16."

Which of the following describes where the CRS would go to open this breaker?

- A. 2D02 Vital DC Bus Electrical Room.
  - B. 2B9/10 480 Volt AC Bus Electrical Room.
  - C. Hallway in the Aux Building behind Door 340.
  - D. North Wall of Vital Battery 2D12 Room.
- 

**Answer:**

C. Hallway in the Aux Building behind Door 340.

**Notes:**

Distracters A, B, and D are all incorrect because these are separate rooms off of the hallway behind Door 340.

**References:**

AOP 2203.014, Alternate Shutdown, Section 3 Step 26  
STM 2-32-5 Section 2.2.4  
2107.004, Exhibit 6.

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**Historical Comments:**

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**Questions For 2006 RO/SRO Exam**22-May-06

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<b>QID:</b> 0630	<b>Rev:</b> 000	<b>Rev Date:</b> 5/18/2006 4:	<b>Lic Level:</b> S	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	<b>Source:</b> Modified QID 422	<b>10CFR55:</b>	<b>Tier #</b>		3
96		10CFR55. 43.3	<b>Group #</b>		
<b>Taxonomy:</b> 2	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>		<b>Importance Rating</b>		3.3
<b>System Title:</b> Equipment Control	<b>System Number</b>		<b>K/A:</b> 2.2.10		

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**Question:**

As the responsible supervisor, you are performing an INTERIM approval for a permanent procedure change (PC) with the following noted with the change forms:

- \* PC is required to continue a HPSI pump quarterly surveillance in progress (2104.039)
- \* The 50.59 SCREENING for this PC indicates that a 50.59 EVALUATION must be completed
- \* PC does NOT create an Intent Change

Which of the following statements describes the correct action for processing this PC?

- A. Interim approval can be granted as long as the 50.59 EVALUATION is completed within fourteen days.
  - B. Interim approval can NOT be used because a 50.59 EVALUATION is required.
  - C. Interim approval can be granted because there is NO Intent Change.
  - D. Interim approval can NOT be used unless a special OSRC, Onsite Safety Review Committee, meeting is called to review the change.
- 

**Answer:**

- B. Interim approval can NOT be used because a 50.59 EVALUATION is required.
- 

**Notes:**

A SRO cannot approve an interim procedure change if the 50.59 screening requires a 50.59 evaluation since the change could affect a license bases document and therefore requires more scrutiny, additional reviews, prior to implementation. A standard procedure change process must be implemented.

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**References:**

Form 1000.006B  
1000.006, Procedure Control section 7.10 and Attachment 1  
EN-LI-101, ATTACHMENT 9.1, 50.59 Review Form

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**Historical Comments:**

Modified QID 422 for use on 2006 exam. ClayS 5-18-06

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## Questions For 2006 RO/SRO Exam

22-May-06

<b>QID:</b>	0269	<b>Rev:</b>	001	<b>Rev Date:</b>	2/7/2000 3:4	<b>Lic Level:</b>	S	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	97	<b>Source:</b>	New	<b>10CFR55.</b>		<b>Tier #</b>			3
				<b>10CFR55.</b>	43.3	<b>Group #</b>			
<b>Taxonomy:</b>	1	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>				<b>Importance Rating</b>			3.4*
<b>System Title:</b>	Equipment Control				<b>System Number</b>	G	<b>K/A:</b>	2.2.11	

### Question:

An emergency Temporary Alteration is installed on Saturday at 0300.

What is the maximum time allowed before completion of a design package or an approved Temporary Alteration to support the 'emergency' alteration?

- A. Next full working day.
- B. Within seven (7) days.
- C. Within fourteen (14) days.
- D. Within thirty (30) days.

### Answer:

- C. Within fourteen (14) days.

### Notes:

### References:

1000.028, Control of Temporary Alterations, Step 6.1.1.B.

### Historical Comments:

Updated to current policy of completing a design/Talt package vs PSC approval. Used on 2006 exam. ClayS 5-18-06

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**Questions For 2006 RO/SRO Exam**

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22-May-06

<b>QID:</b>	0632	<b>Rev:</b>	000	<b>Rev Date:</b>	5/19/2006 2:	<b>Lic Level:</b>	S	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	98	<b>Source:</b>	Modified 0425	<b>10CFR55.</b>		<b>Tier #</b>			3
				<b>10CFR55.</b>	43.4	<b>Group #</b>			
<b>Taxonomy:</b>	1	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>				<b>Importance Rating</b>			3.1
<b>System Title:</b>	Generic				<b>System Number</b>		<b>K/A:</b>	2.3.6	

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**Question:**

Waste Gas tanks (2T-18s) require to be isolated for 30 days prior to release.  
Which of the following best describes the reason for this requirement AND how is isolation time controlled?

- A. Allow short lived gaseous activity in the tank to decay;  
Installation of Danger Tags.
  - B. Ensure that all the gases have sufficient time to diffuse throughout the tank for sampling;  
Installation of Danger Tags.
  - C. Allow short lived gaseous activity in the tank to decay;  
Status board entry.
  - D. Ensure that all the gases have sufficient time to diffuse throughout the tank for sampling;  
Status board entry.
- 

**Answer:**

- A. Allow short lived gaseous activity in the tank to decay;  
Installation of Danger Tags.
- 

**Notes:**

Distracter 'B' is incorrect since any gas present in the tank will readily diffuse throughout the tank.  
C & D are incorrect because Status board is not used to control the 30 day time.

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**References:**

OP 2104.022, Gaseous Radwaste System Supplement 1  
Commitment P-2244, 30-day hold up time on gaseous radioactive release.

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**Historical Comments:**



## Questions For 2006 RO/SRO Exam

22-May-06

<b>QID:</b>	0628	<b>Rev:</b>	0	<b>Rev Date:</b>	5/18/2006	<b>Lic Level:</b>	S	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	99	<b>Source:</b>	New 2006	<b>10CFR55.</b>		<b>Tier #</b>			3
				<b>10CFR55.</b>	43.2	<b>Group #</b>			
<b>Taxonomy:</b>	2	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>				<b>Importance Rating</b>			2.8
<b>System Title:</b>	Generic				<b>System Number</b>	G	<b>K/A:</b>	2.4.36	

### Question:

Given the following conditions:

- \* The plant is at full power.
- \* "LETDOWN RADIATION HI/LO" annunciator (2K12-A1) alarm comes in at 08:00.
- \* Letdown radiation monitor gross activity currently reading 2.3 E2 CPM and trending up.
- \* Letdown radiation monitor I-131 specific activity currently reading 1.3 E2 CPM and trending up.
- \* The latest RCS Average Disintegration Energy (E-Bar) sample was 0.1  $\mu\text{Ci}/\text{gram}$
- \* The following Chemistry sample results of the RCS are obtained at 09:30:
  - Dose Equivalent Iodine 131 activity is 2.5  $\mu\text{Ci}/\text{gram}$
  - Gross activity is 5.5  $\mu\text{Ci}/\text{gram}$ .

Which of the following actions should be taken for these conditions? (Reference provided)

- A. Be in Hot Standby with Tave less than 500 °F by 15:30 and direct RP to perform Aux Building Area surveys.
- B. Direct chemistry to perform Isotopic Analysis for Iodine once every 4 hours and direct RP to perform Aux Building Area surveys.
- C. Be in Cold Shutdown with Tave less than 200 °F by 09:30 the next day and direct RP to perform Turbine Building Area surveys.
- D. Direct chemistry to perform Isotopic Analysis for Iodine every 12 hours and direct RP to perform Turbine Building Area surveys.

### Answer:

- B. Direct chemistry to perform Isotopic Analysis for Iodine once every 4 hours and direct RP to perform Aux Building Area surveys.

### Notes:

TS 3.4.8 will be provided with this question

Distracter A is in correct because this is the set of action to take if the 100/E-Bar limit is exceeded and it has not been or the I-131 activity continues for 48 hours or exceeding the limit line in T.S Figure .

Distracter C is incorrect because the 100/E-Bar RCS Activity limit has not been exceeded

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**Questions For 2006 RO/SRO Exam**

22-May-06

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Distracter D is incorrect because this chemistry action is only directed for a power change of > 15% in one hour which has not occurred

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**References:**

AOP 2203 .020 Step 4. T.S 3.4.8 Action c.

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**Historical Comments:**

## Questions For 2006 RO/SRO Exam

22-May-06

<b>QID:</b> 0634	<b>Rev:</b> 000	<b>Rev Date:</b> 5/19/2006 3:	<b>Lic Level:</b> S	<b>RO</b>	<b>SRO</b>
<b>Sample Plan Q#</b>	<b>Source:</b> Mod 0237	<b>10CFR55:</b>	<b>Tier #</b>		3
100		10CFR55: 43.5	<b>Group #</b>		
<b>Taxonomy:</b> 2	<small>1 = Memory or Fundamental Knowledge 2 = Comprehension or Analysis</small>		<b>Importance Rating</b>		3.8
<b>System Title:</b> Generic	<b>System Number</b> G	<b>K/A:</b> 2.4.48			

### Question:

Volume Control Tank (VCT) Level Transmitter 2LT-4857 fails LOW as indicated on 2LI-4857 on 2C09.

Which of the following would be the effect of this failure on the Chemical and Volume Control System and the correct action for the CRS to direct?

- A. VCT automatic makeup demand signal would be present with the VCT Level HI/LO alarm locked in; monitor VCT level using the plant computer.
- B. Charging pump suction automatically aligns to the RWT and the VCT suction path isolates; commence diluting the RCS using OP 2104.003 Attachment R, RCS Boration form the RWT.
- C. Charging pump suction automatically aligns to the Boric Acid Makeup Tanks and the VCT suction path isolates; secure all Charging pumps and Letdown.
- D. The VCT inlet valve would automatically divert to the Boron Management System, BMS, with VCT Level HI/LO alarm locked in; monitor VCT level using the plant computer.

### Answer:

- A. VCT automatic makeup demand signal would be present with the VCT Level HI/LO alarm locked in; monitor VCT level using the plant computer.

### Notes:

### References:

1. STM 2-04, Chemical and Volume Control System, Rev 8, Section 2.1.21.1

### Historical Comments: