

**Question 1**

Unit 1 is at 25% power and power escalation is in progress.

An asymmetric rod alarm comes in and control rod 7-3 API indicates 9% lower than the group average.

You are the CBOR and are required to enter the QPT because it has exceeded the allowed value by Technical Specifications and 1015.003A "Unit 1 Operations Logs."

Select the equipment listed from the most accurate to obtain QPT.

- A. Excore NI QPT, Full Incore System (PMS) QPT, Minimum/Backup Incore Recorders QPT
- B. Full Incore System (PMS) QPT, Excore NI QPT, Minimum/Backup Incore Recorders QPT
- C. Full Incore System (PMS) QPT, Minimum/Backup Incore Recorders QPT, Excore NI QPT
- D. Minimum/Backup Incore Recorders QPT, Full Incore System (PMS) QPT, Excore NI QPT

**Answer**

"B" is the correct answer, Full Incore System (PMS) is the most accurate for QPT, followed by Excore NI's, then last are the Minimum/Backup Incore Recorders.

**References**

1102.004 "Power Operation", page 8, change 041-05-0.

1015.003A "Unit 1 Operations Logs," Appendix D, page 65, change 050-04-0.

Question Source:	Bank #	_____
	Modified Bank #	_____
	New	<u>  X  </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>  X  </u>
	Comprehension or Analysis	_____
	LOD = 2	_____

Examination Outline Cross-reference:

Level	RO	SRO
K/A #	00005.K1.02	00005.K1.02
Importance Rating	3.1	3.9
Tier #	1	
Group #	1	
CFR References	41.8 / 41.10 / 45.3	

**Question 2**

The following conditions exist:

- Plant power escalation in progress, currently at 75% power.
- The following annunciators alarm:

RCP SEAL INJ FLOW LO (K08-A7)  
 RCP SEAL COOLING FLOW LO (K08-E7)  
 RCP BLEED OFF TEMP HI (K08-C7)

- CBOT reports that all above annunciators are caused by one RCP, P-32A.

Which of the following actions is procedurally directed for the above conditions?

- A. Trip P-32A RCP and verify proper ICS response.
- B. Trip all RCPs, trip reactor, and go to 1202.001, Reactor Trip
- C. Trip P-32A RCP and isolate seal bleedoff to all RCPs.
- D. Verify Letdown isolated and stop RCP Seal Cooling pumps P-114A/B

**Answer:**

"A" is correct, Trip P-32A RCP and verify proper ICS response.

**References:**

1203.031, Reactor Coolant Pump and Motor Emergency, change 014-04-0, page 10, step 3.1

TUOI A1LP-RO-AOP, objective 4.3, Created for 2002 SRO exam by S.Pullin  
 Pulled from ANO bank (QID 0452).

Question Source:	Bank #	<u>  X  </u>
	Modified Bank #	<u>          </u>
	New	<u>          </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>  X  </u>
	Comprehension or Analysis	<u>          </u>
	LOD = 2	

Examination Outline Cross-reference:

Level	RO	SRO
K/A #	000015AK2.08	000015AK2.08
Importance Rating	2.6	2.6
Tier #	1	
Group #	1	
CFR References	41.7 / 45.7 / 43.5	

**Question 3**

The plant is in a degraded power situation with natural circulation cooldown in progress. The ERV isolation valve CV-1000 has been closed due to leakage past the ERV. Which of the following best describes the appropriate action concerning operation of CV-1000 during the cooldown?

- A. CV-1000 should remain closed during the cooldown until repairs to the ERV are completed.
- B. CV-1000 should be cycled open and closed during cooldown to prevent thermal binding of the valve.
- C. CV-1000 should be opened to allow the pressurizer to go solid and transition to a HPI Cooldown.
- D. CV-1000 should be deenergized and hold carded to prevent operation of the valve during cooldown.

**Answer**

“B” is correct, CV-1000 should be cycled open and closed during cooldown to prevent thermal binding of the valve.

“A” is incorrect because the ERV should remain open or cycled approximately every 100 °F during cooldown. “C” is incorrect because with natural circulation cooling established it would be undesirable to transition to HPI Cooldown. “D” is incorrect because the ERV should remain open or cycled approximately every 100 °F during cooldown.

**References:**

1203.015, Pressurizer System Failures, provides guidance for closing CV-1000 due to leakage past the ERV.

1203.013, Natural Circulation Cooldown provides guidance for operation of CV-1000 during cooldown.

Training Objective:TUOI ANO-1-LP-RO-AOP, Objective 4.5

QID:0004, Rev Date:6/10/98

Question Source:	Bank #	<u>  X  </u>
	Modified Bank #	<u>      </u>
	New	<u>      </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>  X  </u>
	Comprehension or Analysis	<u>      </u>
	LOD = 3	

**Examination Outline Cross-reference:**

Level	RO	SRO
K/A #	BW/E09.K3.3	BW/E09.K3.3
Importance Rating	3.8	3.4
Tier #	1	
Group #	1	
CFR references	41.5 / 41.10, 45.6 / 45.13	

**Question 4**

Given:

- Reactor is tripped from 100% power
- Four CRDM's fail to insert according to indications in the control room
- The CRS directs you to initiate Emergency Boration in accordance with RT-12 "Emergency Boration"

You should set the INITIAL batch setting of the boric acid controller to:

- A. The batch size required to maintain make up tank level between 55 and 86 inches while maintaining pressurizer level >100 inches.
- B. The batch size required in order to obtain a shutdown margin of 1.5% delta K/K as determined by a reactivity balance calculation.
- C. The maximum batch size setting and commence adding boric acid to the make up tank.
- D. The batch size determined by the plant computer boron program to offset the reactivity worth of the four stuck rods.

**Answer**

"C" is the correct answer. RT-12 instructs the operator to commence emergency boration by setting the batch controller to the maximum batch size (999999 gals) and to begin adding boric acid via the batch controller if a boric acid pump is available. Therefore, answer "C" is correct. Answers "B" and "D" describe actions to determine the exact batch size after commencing emergency boration. The question is asking for the initial setting of the batch controller. Answer "A" uses a variety of setpoints associated with emergency boration incorrectly.

**References:**

1202.012 (Rev 004-01-0), Repetitive Tasks, RT-12, Emergency Boration.  
Used in 2001 RO/SRO Exam, QID 0005, Modified for 2004 RO exam.

Question Source:	Bank #	<u>          </u>
	Modified Bank #	<u>    X    </u>
	New	<u>          </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>    X    </u>
	Comprehension or Analysis	<u>          </u>
	LOD = 2	

Examination Outline Cross-reference:

	<u>RO</u>	<u>SRO</u>
Level		
K/A #	0024.K1.02	0024.K1.02
Importance Rating	3.6	3.9
Tier #	1	
Group #	1	
CFR references	41.8 / 41.10 / 45.3	

**Question 5**

Given:

- Process Radiation Monitor RI-2236, Nuclear ICW, is in alarm.
- Nuclear ICW flow rate is >3100 gpm
- Local reports of Nuclear ICW Surge Tank overflowing

A leak in which of the following components would be capable of causing these conditions?

- A. RCP Seal Return Coolers
- B. Spent Fuel Coolers
- C. Letdown Coolers
- D. Pressurizer Sample Cooler

**Answer**

"C" is correct, Letdown Coolers. "C" is correct since it is the only component with the piping size and differential pressure to cause the indications given. All of the other choices have either small piping size or relatively low differential pressures.

**References**

STM 1-43, rev. 3 ch. 1, Intermediate Cooling Water System, page 27, 28  
 Developed for 1998 SRO Exam. Used in 2001 RO/SRO Exam.  
 Training Objective: ANO-1-LP-AO-ICW:9  
 QID 0008, Rev date:7/9/98

Question Source:	Bank #	<u>  X  </u>
	Modified Bank #	<u>      </u>
	New	<u>      </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>      </u>
	Comprehension or Analysis	<u>  X  </u>
	LOD = 4	

Examination Outline Cross-reference:

Level	<u>RO</u>	<u>SRO</u>
K/A #	0026.A1.05	0026.A1.05
Importance Rating	3.1	3.1
Tier #	1	
Group #	1	
CFR references	41.7 / 45.5 / 45.6	

**Question 6**

In which of the following sets of post reactor trip responses is the pressurizer spray valve leaking?

- A. RCS temperature is going down, RCS pressure is going down, and pressurizer level is going down.
- B. RCS temperature is going up, RCS pressure is going up, and pressurizer level is going up.
- C. RCS temperature is stable, RCS pressure is going down, and pressurizer level is going down.
- D. RCS temperature is stable, RCS pressure is going down, and pressurizer level is stable.

**Answer**

"D" is correct, RCS temperature is stable, RCS pressure is going down, and pressurizer level is stable. A leaking PZR spray valve will cause RCS pressure to go down without affecting temperature or level.

"A", "B", and "C" are combinations of these parameters with one parameter moving in the wrong direction."

**References**

1203.015, Pressurizer Systems Failure, change 010-03-0, page 11, step "Used in 1999 exam.

Direct from ExamBank, QID# 2228 used in class exam

Selected for use in 2002 RO/SRO exam.

Training Objective: ANO-1-LP-RO-AOP:1

QID: 0344, REV DATE: 9-7-99

Question Source:	Bank #	<u>    X    </u>
	Modified Bank #	<u>          </u>
	New	<u>          </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	<u>    X    </u>
	LOD = 2.5	

**Examination Outline Cross-reference:**

Level	RO	SRO
K/A #	000027.G2.1.7	027.G2.1.7
Importance Rating	3.7	4.4
Tier #	1	
Group #	1	
CFR references	43.5/45.12/45.13	

**Question 7**

Given:

- A reactor trip has occurred.
- RCS pressure is 1800 psig,
- RCS T-cold is 532 degrees F,
- "A" OTSG pressure is 650 psig,
- "B" OTSG pressure is 970 psig,
- Reactor Building pressure is 6 psig.

Which emergency operating procedure contains the specific steps to mitigate the consequences of this event?

- A. ESAS 1202.010
- B. Overcooling 1202.003
- C. HPI Cooldown 1202.011
- D. Loss of Subcooling Margin 1202.002

**Answer**

"B" is correct, Overcooling 1202.003.

**References:**

The key to this question is in realizing that T-cold is lower than normal and that one OTSG is <900 psig. Also, RCS pressure is above ESAS actuation pressure but RB pressure is greater than ESAS actuation setpoint. These are three of the five possible entry conditions for 1202.003, the Overcooling EOP, and all of these conditions are indicative of a steam line rupture inside the RB. Also, the floating steps for the Reactor Trip EOP send the user to the Overcooling EOP. 1202.010, Rev. 005-00-0, ESAS page 2 Taken from Exam Bank QID # 556, Used in A. Morris 98 RO Re-exam, Used in 2001 RO/SRO Exam. QID:0156, REV DATE:06/28/97  
Training Objective: ANO-1-LP-RO-EOP03:7

Question Source:	Bank #	<u>  X  </u>
	Modified Bank #	<u>          </u>
	New	<u>          </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>          </u>
	Comprehension or Analysis	<u>  X  </u>
	LOD = 3	

Examination Outline Cross-reference:

Level	<u>RO</u>	<u>SRO</u>
K/A #	BW/E05.K1.3	BW/E05.K1.3
Importance Rating	3.8	3.8
Tier #	1	
Group #	1	
CFR references	43.5 / 45.13	

**Question 8**

Given:

Plant startup in progress with reactor power at 5 %.

Condenser E-11A Vacuum Pressure Switch (PS-2850) fails to 0" Hg.

What effect will this have on Turbine Bypass Valve (TBV) and Atmospheric Dump Valve (ADV) operations?

- A. All TBVs will remain open, both ADV isolations will open and both ADV control valves will remain closed.
- B. Only TBVs for E-11A will close, both ADV isolations open and 'A' SG ADV will begin controlling 'A' SG pressure.
- C. All TBVs will close, both ADV isolations will open and both ADV control valves control at setpoint
- D. Only TBVs for E-11A will close, both ADV control valves and both ADV isolations will open."

**Answer**

"C" is correct, All TBVs will close, both ADV isolations will open and both ADV control valves control at setpoint. With only one vacuum pressure switch made up, all condenser TBVs will close, both ADV isolations will open and both ADV control valves will control Steam Generator pressure at a setpoint of 1020 psig.

**References**

1106.016, Condensate Feedwater and Steam system Operation, change 039-05-0, page 12, step 6.4

"Developed for use on A. Morris 98 RO Re-exam, Selected for use in 2002 RO/SRO exam. AK3.01"

Training Objective: ANO-1-LP-AO-MS:13

QID:0229, REV DATE: 11/20/98

Question Source:	Bank #	<u>    X    </u>
	Modified Bank #	<u>          </u>
	New	<u>          </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	<u>    X    </u>
	LOD = 4	

Examination Outline Cross-reference:

Level	<u>    RO    </u>	<u>    SRO    </u>
K/A #	000051.K3.01	000051.K3.01
Importance Rating	2.8	3.1

Tier #	1
Group #	1
CFR references	41.5 / 41.10 / 45.6 / 45.13

**Question 9**

Unit 1 has been in a station blackout for 1.5 hours with battery bank D06 supplying bus D02 with power without a battery charger online for this entire time. If the equipment on bus D02 does NOT change, which one of the following statements describes the battery's discharge rate (in amps) as the battery is expended?

- A. The discharge rate will be fairly constant until the design battery capacity is exhausted.
- B. The discharge rate will go down steadily until the design battery capacity is exhausted.
- C. The discharge rate will go up steadily until the design battery capacity is exhausted.
- D. The discharge rate will be fairly constant until the design battery capacity is exhausted and then will rapidly go down.

**Answer**

"C" The discharge rate will go up steadily until the design battery capacity is exhausted is the correct answer.

**References**

OP 1202.008, Blackout  
 1203.036 Loss of 125V DC  
 1107.004 Battery and 125 VDC Distribution

Question Source:	Bank #	_____
	Modified Bank #	_____
	New	<u>  X  </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	_____
	Comprehension or Analysis	<u>  X  </u>
	LOD = unclassified	

**Examination Outline Cross-reference:**

Level	RO	SRO
K/A #	000055.A1.05	000055.A1.05
Importance Rating	3.3	3.6
Tier #	1	
Group #	1	
CFR references	41.7 / 45.5 / 45.6	

**Question 10**

During thunderstorm conditions the reactor trips, and the following conditions are observed:

- NNI X AC and NNI X DC Instrument Power Supply Status lights on C13 are OFF
- NNI Y AC and NNI Y DC Instrument Power Supply Status lights on C13 are ON

What is the expected position of CV-1235, the pressurizer level control valve?

- A. Indeterminate.
- B. Failed 0% open.
- C. Failed 50% open.
- D. Failed 100% open.

**Answer**

“C” is correct, Failed 50% open. On a loss of NNI X AC and NNI X DC, CV-1235 fails to 50% open; therefore “C” is the only correct response. If only NNI X DC had been lost then “D” would be correct.

**References**

SSSTM 1-69, NNI06, 3.3.12 Pressurizer Temperature and Level, PG 20  
 OP-1203.015 PRESSURIZER SYSTEMS FAILURE  
 OP-1203.047 LOSS OF NNI POWER

Question Source:	Bank #	_____
	Modified Bank #	_____
	New	<u>  X  </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	_____
	Comprehension or Analysis	<u>  X  </u>
	LOD = unclassified	

Examination Outline Cross-reference:

	<u>RO</u>	<u>SRO</u>
Level		
K/A #	000057.A2.12	000057.A2.12
Importance Rating	3.5	3.7
Tier #	1	
Group #	1	
CFR references	43.5/45.13	

**Question 11**

What should the operator's followup actions be if two SW pump strainers are clogged?

- A. Verify proper SW bay level on the standby pump and start it.
- B. Realign the standby SW pump to the emergency pond and start it.
- C. Start the standby pump when the low SW pressure alarm comes in.
- D. Realign the cross-ties to separate the standby pump from the pump with clogged strainers and start the standby pump.

**Answer**

"B" is correct, Realign the standby SW pump to the emergency pond and start it is the correct answer per the AOP. The standby pump's suction is aligned to the ECP, which should be free of the debris causing problems to the running pumps.

Answer "A" is incorrect; the standby pump's suction will still be from the lake which is causing problems for the running pumps. Answer "C" is incorrect; equipment-cooling problems will occur if this action is taken. Answer "D" is incorrect because with two pumps having clogged strainers, this will not be possible.

**References**

1203.030, Loss of Service Water, change 012-00-0, page 6, step 3.5

"Direct from regular exam bank QID 1899. Selected for use in 2002 RO/SRO exam."

Training Objective: A1LP-RO-AOP:5

QID: 0418, Rev Date: 4/24/2002

Question Source:	Bank #	<u>    X    </u>
	Modified Bank #	<u>          </u>
	New	<u>          </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>          </u>
	Comprehension or Analysis	<u>    X    </u>
	LOD = 2	

Examination Outline Cross-reference:

Level	<u>RO</u>	<u>SRO</u>
K/A #	000062.G2.1.23	000062.G2.1.23
Importance Rating	3.9	4.0
Tier #	1	
Group #	1	
CFR references	45.2 / 45.6	

**Question 12**

Given:

- Alternate shutdown is in progress due to a fire in the Unit 1 Control Room
- All immediate evacuation follow-up actions inside the control room have been completed.
- The CRS, RO #1, and RO#2, have gone out into the field to establish plant control.

Identify the desired OTSG level band and which pump / suction source which will be initially used:

- A. SG levels controlled at 300"-320" with Electric EFW Pump (P-7B) and Condensate Storage Tank (T-41)
- B. SG levels controlled at 300"-320" with Steam Driven EFW Pump (P-7A) and Q-Condensate Storage Tank (T41B)
- C. SG levels controlled at 280"-300" with Steam Driven EFW Pump (P-7A) and Q-Condensate Storage Tank (T41B)
- D. SG levels controlled at 280"-300" with Electric EFW Pump (P-7B) and Condensate Storage Tank (T-41)

**Answer**

"B" is correct, SG levels controlled at 300"-320" with Steam Driven EFW Pump (P-7A) and Q-Condensate Storage Tank (T41B). P-7B is the motor driven EFW pump and is used only if there is enough time to start and line-up and T41 is the tank used when T41B is exhausted, making "A" and "D" incorrect. The correct level is 300"-320", making "C" incorrect.

**References**

1203.002 "Alternate Shutdown" page 50, 79.

Question Source:	Bank #	_____
	Modified Bank #	_____
	New	<u>  X  </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	_____
	Comprehension or Analysis	<u>  X  </u>
	LOD =	

Examination Outline Cross-reference:

	<u>RO</u>	<u>SRO</u>
Level		
K/A #	000068.K3.07	000068.K3.07
Importance Rating	4.0	4.3
Tier #	1	
Group #	1	
CFR references	41.5 / 41.10 / 45.6 / 45.13	

**Question 13**

What type of occurrence would make it necessary to use AOP 1203.005 (Loss of Rx Bld Integrity)?

- A. Failure to perform a LLRT on personnel hatch within 12 hours after opening during Mode 2 operations.
- B. An entry into the RB to repair an inner airlock door component failure during Mode 1 operations.
- C. A motor-operated outer containment isolation valve has lost power and has an inner valve that is manually operated and is closed during Mode 5 operations.
- D. The interlocks jam on the personnel hatch and both doors are open for < 5 minutes during Mode 2 operations.

**Answer**

"D" is correct, The interlocks jam on the personnel hatch and both doors are open for < 5 minutes during mode 2 operations. The time given is immaterial, if both doors are inoperable, then a loss of RB integrity exists.

Answer "A" is incorrect, up to 72 hours are allowed to perform LLRT.

Answer "B" is incorrect, entry is allowed without AOP entry to repair one airlock door provided the other is operable and closed. Answer "C" is incorrect, the requirements for an inoperable containment isolation valve are only during mode 1-4 operations.

**References**

1203.005, Loss of Reactor Building Integrity, change 010-01-0, page 1, step 1.1.2  
Modified from the regular exam bank QID 737, which was used in the 2002 RO/SRO exam.

Training Objective: A1LP-RO-AOP 4.1

QID: 0419, Rev Date:4/24/2002

Question Source:	Bank #	<u>          </u>
	Modified Bank #	<u>    X    </u>
	New	<u>          </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>    X    </u>
	Comprehension or Analysis	<u>          </u>
	LOD = 2	

Examination Outline Cross-reference:

Level	<u>RO</u>	<u>SRO</u>
K/A #	000069.A1.01	000069.A1.01
Importance Rating	3.5	3.7
Tier #	1	
Group #	1	
CFR references	41.7 / 45.5 / 45.6	

**Question 14**

Given:

- Plant tripped from 100% power
- Inadequate Core Cooling conditions exist
- Offsite power is available
- AFW pump, P-75, is inoperable
- Steam Driven EFW pump, P-7A, tripped on overspeed and won't reset
- A3 bus is locked out

What is the MAXIMUM steam generator pressure that would allow feeding of the OTSGs to establish primary to secondary heat transfer?

- A. 970 psig
- B. 720 psig
- C. 590 psig
- D. 50 psig

**Answer**

"C" is correct, 590 psig.

"A" is incorrect, 970 psig is the minimum normal post trip OTSG pressure band. "B" is incorrect, <720 is the criteria for bypassing MSLI. "D" is incorrect, applicable if only Service Water is available for steam generator feed.

**References**

EOP 1202.005 "Inadequate Core Cooling"  
TBD 74-1152414-09, Vol 3, III.F-8.

Question Source:	Bank #	_____
	Modified Bank #	_____
	New	<u>  X  </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	_____
	Comprehension or Analysis	<u>  X  </u>
	LOD = unclassified	

Examination Outline Cross-reference:

Level	<u>RO</u>	<u>SRO</u>
K/A #	000074.A2.02	000074.A2.02
Importance Rating	4.3	4.6
Tier #	1	
Group #	1	
CFR references	43.5 / 45.13	

**Question 15**

Given:

- A LOCA has occurred.
- All RCPs are running.
- SPDS ATOG display indicates "Loss of Subcooling Margin Elapsed Time 00:04:15"

Which of the following actions should be taken?

- A. Stop all RCPs.
- B. Stop one RCP in each loop.
- C. Stop all RCPs except for one RCP in PZR loop.
- D. Continue to keep all RCPs running.

**Answer**

"B" is correct, Stop one RCP in each loop.

Per 1202.002, if subcooling margin is lost and less than two minutes have elapsed, then all RCPs should be stopped. If more than two minutes have elapsed, then one RCP in each loop should be left running. The SPDS indication given shows that 4 minutes and 15 seconds have elapsed since subcooling margin was lost, therefore "B" is the correct answer. "A" would be correct if SPDS indication was 00:01:59 or less. "C" is an action taken during a normal shutdown to cold shutdown. "D" is totally incorrect, this action could lead to core uncover with certain size primary system LOCAs.

**References**

1202.002 (Rev 3)

1105.014 [Rev 6]

Direct from exam bank QID 0159, Modified from Exam Bank QID # 540

Used in A. Morris 98 RO Re-exam.

Question Source:	Bank #	<u>  X  </u>
	Modified Bank #	<u>          </u>
	New	<u>          </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	<u>  X  </u>
	LOD = 3	

Examination Outline Cross-reference:

	<u>RO</u>	<u>SRO</u>
Level		
K/A #	BW/E03.K2.2	BW/E03.K2.2
Importance Rating	4.3	4.3
Tier #	1	
Group #	1	
CFR references	41.7 / 45.7	

**Question 16**

Which of the following combinations of NNI power losses DOES NOT require a manual reactor trip?

- A. NNI-Y AC and NNI-Y DC
- B. NNI-X AC and NNI-X DC
- C. NNI-Y AC and NNI-X DC
- D. NNI-X AC and NNI-Y DC

**Answer**

"A" is correct, NNI-Y AC and NNI-Y DC.

**References**

1203.047, change 000-01-0, page 1-9.  
Davis-Besse 1 R 06/10/1996

Question Source: Bank #     X      
Modified Bank #             
New                   

Question Cognitive Level: Memory or Fundamental Knowledge     X      
Comprehension or Analysis             
LOD =

**Examination Outline Cross-reference:**

	<u>RO</u>	<u>SRO</u>
Level		
K/A #	BW/A02.A1.2	BW/A02.A1.2
Importance Rating	3.4	3.2
Tier #	1	
Group #	1	
CFR references	41.7 / 45.5 / 45.6	

**Question 17**

Given:

- Approach to criticality is in progress.
- Reactor power is in the Source Range.
- The CBOR commences sequential withdrawal of the regulating rods.

The following indications are observed:

- SR count rate rising
- Sustained SUR of 2.5 DPM
- Continued outward rod motion without a command.

The CBOR has attempted to trip the reactor, but all efforts to trip the reactor from the control have failed. The CRS directs performance of Emergency Boration per RT-12.

Which of the following conditions would prevent the shutdown of the reactor by Emergency Boration via the Batch Controller?

- A. Loss of power to boric acid pump P39A
- B. Batch controller stuck on 9999999
- C. Loss of Instrument Air to CV-1250
- D. Failure of the Aux key on the Boric Acid batch controller

**Answer**

“C” Loss of Instrument air is correct. This will cause the Boric acid batch control outlet valve (essentially the emergency boration valve, CV-1250) to fail shut, preventing emergency boration into the reactor. “A” is incorrect because there are two pumps that can be used (P39A and P39B). “B” is incorrect because 9999999 is the max setting for emergency boration and is the value specified in the EOP for the controller setting. “D” is incorrect because the Aux Keys are not used on the batch controller.

**References**

1103.004 “Soluble Poison Concentration Control”, page 4, and EOP 1202.001.

Question Source:	Bank #	_____
	Modified Bank #	_____
	New	<u>  X  </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	_____
	Comprehension or Analysis	<u>  X  </u>
	LOD = unclassified	

Examination Outline Cross-reference:

Level	RO	SRO
K/A #	000001.A2.02	000001.A2.02
Importance Rating	4.2	4.2
Tier #	1	
Group #	2	
CFR references	43.5 / 45.13	

**Question 18**

Given:

- 100% power, BOL
- Tave 579 degrees F
- RCS Pressure at 2155 psig
- ICS in AUTO

K07-B3 "ASYM ROD RUNBACK IN EFFECT" alarms. A runback is now in progress.

RCS Pressure and Tave will (respectively) \_\_\_1\_\_\_, then will \_\_\_2\_\_\_, and finally \_\_\_3\_\_\_ with no operator action.

- A.     1. Decrease due to power reduction from rod movement  
           2. Increase because of negative MTC  
           3. Level out inside normal bands.
- B.     1. Increase due to power reduction from ICS runback to turbine  
           2. Decrease because of positive MTC  
           3. Level out inside normal bands.
- C.     1. Increase due to load reduction from ICS runback to turbine  
           2. Decrease due to FW demand matching new lower power at 40%  
           3. Level out inside normal bands.
- D.     1. Decrease due to power reduction from rod movement  
           2. Increase because of negative MTC  
           3. Level out at values slightly lower than normal bands due to new lower power of 40%.

**Answer**

"A" is correct, Decrease due to power reduction, Increase because of negative MTC, level out inside normal bands.

All others are combinations that have incorrect statements in them. MTC is always negative in this range of temperatures, while bands return to normal after this transient. The initial power reduction is caused by the rods driving in due to the runback (turbine load rejection is occurring simultaneously, but is not the cause of Temp/Press decreases).

**References**

1203.012F, TSB B3.1.4-2, STM 1-3 RCS.

Question Source:	Bank #	_____
	Modified Bank #	_____
	New	<u>  X  </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	_____
	Comprehension or Analysis	<u>  X  </u>
	LOD = unknown	

Examination Outline Cross-reference:		
Level	<u>  RO  </u>	<u>  SRO  </u>

K/A #	000003.A1.06	000003.A1.06
Importance Rating	4.0	4.1
Tier #	1	
Group #	2	
CFR references	41.7 / 45.5 / 45.6	

**Question 19**

Following a reactor trip from 55% power, the following conditions exist:

- Both OTSG pressures are less than 900 psig and LOWERING
- K07-C5 "MSSV OPEN" is in alarm
- SPDS indicates that the open MSSV is on the "B" OTSG.

Which of the following actions should be taken FIRST to stabilize the plant in accordance with 1202.003, OVERCOOLING?

- A. Isolate SG "B" by depressing MSLI manual actuation pushbuttons and ensuring feedwater flow to both OTSG's.
- B. Control Turbine Bypass valves (TBVs) to maintain SG pressures and levels constant or slightly rising to stop the overcooling through the MSSV.
- C. Isolate BOTH OTSG's by depressing MSLI manual actuation pushbuttons and isolate EFW by closing EFW header isolation valve(s).
- D. Control Turbine Bypass valves (TBVs) to quickly reduce SG pressures in an attempt to reseal the MSSV.

**Answer**

"D" is correct, Control Turbine Bypass valves (TBVs) to quickly reduce SG pressures in an attempt to reseal the MSSV.

**References**

1202.003 EOP "OVERCOOLING", change 005-00-0, page 3.

1203.012F Annunciator K07 Corrective Action, change 026-04-0, page 25.

Question Source:	Bank #	_____
	Modified Bank #	_____
	New	<u>  X  </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>  X  </u>
	Comprehension or Analysis	_____
	LOD = unknown	

**Examination Outline Cross-reference:**

Level	<u>  RO  </u>	<u>  SRO  </u>
K/A #	BW/E10.A1.1	BW/E10.A1.1
Importance Rating	4.0	3.5
Tier #	1	
Group #	2	
CFR references	41.7 / 45.5 / 45.6	

**Question 20**

Given the following plant conditions:

- 100% power
- Condensate Pump P-2A OOS
- K06-E7 "COND PUMP MTR WDG TEMP HI" is in alarm
- AO reports fire in Condensate Pump P-2C motor

The CRS instructs the CBOT to trip P-2C.

Which of the following describes the correct response?

- A. Trip P-2C, perform immediate actions per 1203.027, Loss of Steam Generator Feed and dispatch the fire brigade per 1203.034, Smoke, Fire or Explosion.
- B. Trip P-2C, monitor ICS runback to 40% power and dispatch the fire brigade per 1203.034, Smoke, Fire or Explosion.
- C. Trip P-2C and reduce power per 1203.045, Rapid Plant Shutdown, to maintain adequate main feed pump suction pressure and dispatch the fire brigade per 1203.034, Smoke, Fire or Explosion.
- D. Trip P-2C then trip the turbine and reactor and carry out immediate actions per 1202.001, Reactor Trip and dispatch the fire brigade per 1203.034, Smoke, Fire or Explosion.

**Answer**

"B" is correct, Trip P-2C, monitor ICS runback to 40% power and dispatch the fire brigade per 1203.034, Smoke, Fire or Explosion. The plant is designed to survive a loss of 2 condensate pumps. ICS will run the plant back at 50%/min to 40% power (360 MWe). Immediate action for fire is to dispatch the fire brigade, therefore (b) is the correct response. "A" is actions for a loss of a main feedwater pump which should not occur. "C" main feed pump suction pressure will go down but recover as ICS runs plant back. "D" a reactor/turbine trip should not be required.

**References**

1105.004 Rev 014-00-0, Integrated Control System, page 10 step 6.20

1203.034, Rev. 012-03-0, Smoke, Fire, or Explosion, p. 4

Used in 2001 SRO Exam. Selected for use in 2002 SRO exam.

Training Objective: ANO-1-LP-RO-ICS:12

QID: 0062, Rev date:5/6/2002

Question Source:	Bank #	<u>    X    </u>
	Modified Bank #	<u>          </u>
	New	<u>          </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>          </u>
	Comprehension or Analysis	<u>    X    </u>
	LOD = 4	

Examination Outline Cross-reference:



**Question 22**

A leak exists on the upper tap of a Pressurizer level transmitter sensing line, causing a PZR steam space leak.

Indicated PZR level will \_\_\_\_\_ and actual PZR level will \_\_\_\_\_.

- A. Drop, Drop
- B. Drop, Rise
- C. Rise, Drop
- D. Rise, Rise

**Answer**

“D” is correct, rise, rise, “D” is correct since a leak on the upper tap will cause the differential pressure to go down on the affected transmitter, thus causing indicated level to rise. Likewise a steam space leak will cause actual level to go up. Answers “A” thru “C” are combinations of the correct answer, and could be correct if the leak was elsewhere.

**References**

1304.022, Rev. 023-00-0, Unit 1 Pressurizer Level & Temperature Channel Calibration, page 6, 7

Created for 2001 RO/SRO Exam, 11/13/00 by J.Cork.

Training Objective: ANO-1-LP-RO-NNI: 4

Modified from Regular exambank QID #5470.

Question Source:	Bank #	<u>    X    </u>
	Modified Bank #	<u>          </u>
	New	<u>          </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	<u>    X    </u>
	LOD = 3	

**Examination Outline Cross-reference:**

Level	<u>RO</u>	<u>SRO</u>
K/A #	000008.A2.27	000008.A2.27
Importance Rating	2.9	3.2
Tier #	1	
Group #	2	
CFR references	43.5 /45.13	

**Question 23**

Given:

- A Small Break LOCA has occurred.
- CBOR has tripped the reactor.
- CBOT has tripped the turbine.
- Both OTSG Pressure's are at 895 psig
- SCM is 25°F.
- All RCPs are OFF.

The desired final OTSG levels will be maintained with EFW using   1   Level instrument(s) and obtained with a fill rate of   2  .

- A.    1. EFIC Low Range  
      2. 2" to 8"/min in manual or 280gpm/SG in Auto
- B.    1. EFIC High Range  
      2. 2" to 8"/min in Auto or 280gpm/SG in manual
- C.    1. EFIC Low Range  
      2. 2" to 8"/min in Auto or 280gpm/SG in manual
- D.    1. EFIC High Range  
      2. 2" to 8"/min in manual or 280gpm/SG in Auto

**Answer**

"B" is correct, EFIC High Range, 2" to 8"/min in Auto or 280gpm/SG in manual. EFIC High Range does not cover the 370-410" level required for this EOP/RT. EOP/RT specifies the level and rate and the other three distracters are incorrect combinations of other instruments and manual versus auto modes of control.

**Reference**

1202.012 "Repetitive Tasks", RT 5 for EFW initiation.

Question Source:	Bank #	<u>          </u>
	Modified Bank #	<u>          </u>
	New	<u>  X  </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>          </u>
	Comprehension or Analysis	<u>  X  </u>
	LOD =	

Examination Outline Cross-reference:

Level	RO	SRO
K/A #	000009.K2.03	000009.K2.03
Importance Rating	3.0	3.3
Tier #	1	
Group #	2	
CFR references	41.7 / 45.7	

**Question 24**

Given:

- Unit 1 is at 100% Power.
- A LOCA occurs with RCS pressure stabilizing at 200 psig
- BWST level is 8 feet.

The purpose of the PIGGYBACK mode during recovery from a LOCA is to:

- A. Provide a minimum recirculation flowpath for the LPI pumps.
- B. Provide Net Positive Suction Head to the HPI pumps.
- C. Provide a low pressure discharge to the RCS when RCS pressure is <200psig.
- D. Provide a means of transferring to long-term core cooling with the LPI pumps and the RB sump when RCS Pressure is <200psig.

**Answer**

"B" is correct, ensures NPSH to HPI pumps prior to transfer to RB sump recirculation.

**References**

STM 1-05, Rev 11, pages 37-38.

Question Source:	Bank #	_____
	Modified Bank #	_____
	New	<u>  X  </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>  X  </u>
	Comprehension or Analysis	_____
	LOD =unclassified	

Examination Outline Cross-reference:

Level	RO	SRO
K/A #	000011.K2.02	000011.K2.02
Importance Rating	2.6	2.7
Tier #	1	
Group #	2	
CFR references	41.7 / 45.7	

**Question 25**

Given:

- Neither OTSG is available
- RCS CETs are 550°F and lowering
- SCM is 70°F
- HPI Cooldown in progress per 1202.011, HPI Cooldown
- Cooldown rate is 110°F/hr

Which of the following will reduce the cooldown rate to an acceptable value?

- A. Lower HPI flow / Raise letdown flow
- B. Lower HPI flow / Lower letdown flow
- C. Raise HPI flow / Lower letdown flow
- D. Raise HPI flow / Raise letdown flow

**Answer**

"B" is correct, Lower HPI flow / Lower letdown flow. "A" , "C" , "D" provide incorrect combinations to reduce cooldown rate.

**References**

EOP 1202.011 "HPI Cooldown"

Question Source:	Bank #	_____
	Modified Bank #	_____
	New	<u>  X  </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	_____
	Comprehension or Analysis	<u>  X  </u>
	LOD = 4	

Examination Outline Cross-reference:

Level	RO	SRO
K/A #	BW/E08.A1.3	BW/E08.A1.3
Importance Rating	3.3	3.8
Tier #	1	
Group #	2	
CFR references	41.7 / 45.5 / 45.6	

**Question 26**

Following a refueling outage, a plant "Heatup to 800 psig" is in progress.

- RCS temperature is 290°F.
- HPI pump P-36B is out of service for maintenance.
- HPI pump P-36A is in ES standby and P-36C is in service.

After reviewing the surveillance data for P-36C, System Engineering determines that P-36C is inoperable.

Which of the following is allowable in accordance with Unit One Tech Specs?

- A. Heatup may continue up to normal operating temperature and pressure.
- B. Heatup should be stopped and RCS cooled down to < 200°F.
- C. Heatup should be stopped and RCS temp should not exceed 300°F.
- D. Heatup may continue up to, but not to exceed, an RCS temp of 350°F.

**Answer**

"D" is correct, Heatup may continue up to, but not to exceed, an RCS temp of 350°F.

**References**

Unit One Technical Specifications 3.3.2

Created for 2001 SRO Exam. QID # 0380.

Question Source:	Bank #	<u>  X  </u>
	Modified Bank #	<u>          </u>
	New	<u>          </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>          </u>
	Comprehension or Analysis	<u>  X  </u>
	LOD = unclassified	

Examination Outline Cross-reference:

Level	RO	SRO
K/A #	0022.G2.1.12	0022.G2.1.12
Importance Rating	2.9	4.0
Tier #	1	
Group #	2	
CFR references	43.2 / 43.5 / 45.3	

**Question 27**

An outage is in progress with the following conditions:

- The RCS is drained to 371.5 feet as indicated by RCS hot leg level.
- Decay heat removal flow becomes erratic.
- Indicated decay heat removal flow is ~2500 gpm.

Which ONE of the following actions is correct?

- A. Reduce decay heat removal flow until flow has stabilized.
- B. Stop the operating decay heat removal pump.
- C. Raise RCS level.
- D. Raise decay heat removal flow.

**Answer**

"A" is correct, Reduce decay heat removal flow until flow has stabilized. With erratic flow, actions should be taken to stabilize the flow by throttling flow back. "B" is incorrect. This is action for a loss of flow not erratic flow. "C" is incorrect. Although this may be necessary in the long term, the immediate response to the condition is to reduce DH flow. "D" is incorrect. This will make the condition worse instead of better."

**References**

1203.028, Loss of Decay Heat Removal, change 016-02-0, page 17, step 3.2. Taken from Exam Bank QID # 3070. Used in A. Morris 98 RO Re-exam. Selected for 2002 RO/SRO exam.

Training Objective: ANO-1-LP-RO-DHR:23

QID: 0164, Rev Date: 05/03/91

Question Source:	Bank #	<u>  X  </u>
	Modified Bank #	<u>      </u>
	New	<u>      </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	<u>  X  </u>
	LOD = 2	

Examination Outline Cross-reference:

Level	RO	SRO
K/A #	000025.K1.01	000025.K1.01
Importance Rating	3.9	4.3
Tier #	1	
Group #	2	
CFR references	41.8 / 41.10 / 45.3	

**Question 28**

Which one of the following describes the operation of the AMSAC (ATWS Mitigation Safety Actuation Circuit) and the DSS (Diverse Scram System) during an ATWS with a complete loss of Main Feedwater?

- A. AMSAC trips the main turbine while DSS trips the regulating rods and starts the EFW pumps.
- B. AMSAC trips the regulating rods while DSS trips the main turbine and starts EFW pumps.
- C. AMSAC trips the main turbine and starts the EFW pumps while DSS trips the regulating rods.
- D. AMSAC starts the EFW pumps and trips the regulating rods while DSS trips the main turbine.

**Answer**

“C”, AMSAC trips the main turbine and starts the EFW pumps while DSS trips the regulating rods, is the correct answer. The other distracters are incorrect combinations of the 4 items that both sub-systems due as parts of DROPS.

**References**

STM 1-59, Rev 1, page 9-10.

Question Source:	Bank #	_____
	Modified Bank #	_____
	New	<u>  X  </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>  X  </u>
	Comprehension or Analysis	_____
	LOD = unclassified	

Examination Outline Cross-reference:

	<u>RO</u>	<u>SRO</u>
Level		
K/A #	000029.K2.06	000029.K2.06
Importance Rating	2.9	3.1
Tier #	1	
Group #	2	
CFR references	41.7 / 45.7	

**Question 29**

The primary reason the Technical Specifications require one channel of SR NI to be OPERABLE is:

- A.
  1. To provide for primary power indication at  $< 1E-8$  amp on IR NI
  2. To provide the primary means for detecting reactivity transients initiated when RPS is NOT required to be OPERABLE and would require operator action.
- B.
  1. To provide for primary power indication at  $< 1E-10$  amp on IR NI
  2. To provide the primary means for detecting reactivity transients initiated at full power changes that trigger operator actions to anticipate RPS activation.
- C.
  1. To provide primary power indication at  $< 1E-8$  amp on IR NI
  2. To provide the primary means for detecting reactivity transients initiated at full power changes that trigger operator actions to anticipate RPS activation.
- D.
  1. To provide primary power indication at  $< 1E-10$  amp on IR NI
  2. To provide the primary means for detecting reactivity transients initiated when RPS is NOT required to be OPERABLE and would require operator action.

**Answer**

“D” To provide primary power indication at  $< 1E-10$  amp on IR NI and is the primary means for detecting reactivity changes and triggering operator actions to respond to reactivity transients initiated from conditions in which the Reactor Protection System (RPS) is not required to be OPERABLE, is correct.  $1E-8$  power is within range for IR NI making answers “A” and “C” incorrect. “B” is incorrect because SR is not used at full power for reactivity transients since power range detectors provide this function.

**References**

TSB 3.3.9

Question Source:	Bank #	_____
	Modified Bank #	_____
	New	<u>  X  </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>  X  </u>
	Comprehension or Analysis	_____
	LOD =	

Examination Outline Cross-reference:

	<u>RO</u>	<u>SRO</u>
Level		
K/A #	000032.K3.02	000032.K3.02
Importance Rating	3.7	4.1
Tier #	1	
Group #	2	

CFR references

41.5 / 41.10 / 45.6 / 45.13

**Question 30**

Given:

The following are in alarm:

- SG-A N-16 AVG Leakrate GPM (SGALRGPM)
- SG-A N-16 Leakrate ROC (Rate of Change) GPM/HR (SGAROC1)
- A OTSG N-16 TROUBLE (K07-A5)

The crew has just initiated a controlled shutdown from 100% power in accordance with 1203.023, SMALL STEAM GENERATOR TUBE LEAKS. The CBOT reports that SG-A N-16 AVG Leakrate GPM (SGALRGPM) has risen to 11 gpm.

What is the required action to take?

- A. Enter EOP for tube rupture (1203.006) because >1gpm
- B. Continue in AOP 1203.023, attachment 1, to use correlation table for N-16 since power is less than 100% and N-16 detectors are normally set to Gross mode.
- C. Continue in AOP 1203.023, attachment 1 to use PMS indications for leak rate and rate of change.
- D. Enter EOP for tube rupture, 1203.006 because > 10 gpm.

**Answer**

“D” Enter EOP for Tube Rupture (1203.006) because > 10 gpm, is the correct answer. This is an entry condition for the EOP when at power without a reactor trip. “A” is incorrect because a reactor trip has not occurred (with 1gpm leak rate), while “B” and “C” are incorrect because the AOP clearly states that tube leaks are defined as < 10 gpm and when above this value to enter the EOP 1203.006 for “Tube Rupture”.

**References**

EOP Tube Rupture (1203.006)-entry conditions

AOP Small Steam Generator Tube Leaks (1203.023)-entry conditions

Question Source:	Bank #	_____
	Modified Bank #	_____
	New	<u>  X  </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>  X  </u>
	Comprehension or Analysis	_____
	LOD =	_____

Examination Outline Cross-reference:

	<u>RO</u>	<u>SRO</u>
Level		
K/A #	000037.A2.06	000037.A2.06
Importance Rating	4.3	4.5
Tier #	1	
Group #	2	
CFR references	43.5 / 45.13	

**Question 31**

After a reactor trip, which of the following would indicate a ruptured tube in the "A" Steam Generator?

- |   |  |
|---|--|
| A. "A" EFIC level is 31 stable<br>"B" EFIC level is 35 rising | "A" MFW Flow is .3 mlb/hr<br>"B" MFW Flow is .2 mlb/hr |
| B. "A" EFIC level is 31 stable<br>"B" EFIC level is 29 rising | "A" MFW Flow is .3 mlb/hr<br>"B" MFW Flow is .4 mlb/hr |
| C. "A" EFIC level is 28 rising<br>"B" EFIC level is 31 stable | "A" MFW Flow is .5 mlb/hr<br>"B" MFW Flow is .3 mlb/hr |
| D. "A" EFIC level is 35 rising<br>"B" EFIC level is 31 stable | "A" MFW Flow is .1 mlb/hr<br>"B" MFW Flow is .3 mlb/hr |

**Answer**

"D" is correct, "A" EFIC level is 35 rising "A" MFW Flow is .1 mlb/hr  
"B" EFIC level is 31 stable "B" MFW Flow is .3 mlb/hr

"A" would indicate a tube rupture in the "B" OTSG. "B" & "C" choices indicate normal controls for post trip. "D" indicates a tube rupture in the "A" OTSG, i.e., level rising and low feedwater flow rates in "A" OTSG.

**Reference**

1202.006 Rev 7, 1202.001 Rev 27. Developed for 1999 exam.

Question Source:	Bank #	<u>    X    </u>
	Modified Bank #	<u>          </u>
	New	<u>          </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>          </u>
	Comprehension or Analysis	<u>    X    </u>
	LOD =	

Examination Outline Cross-reference:

Level	RO	SRO
K/A #	000038.A1.02	000038.A1.02
Importance Rating	4.2	4.1
Tier #	1	
Group #	2	
CFR references	41.7 / 45.5 / 45.6	

**Question 32**

Given:

- Loss of all Feedwater
- HPI core cooling started

What indicates adequate HPI core cooling?

- A. CET temperatures stable after 100 minutes.
- B. T-cold tracking associated SG T-sat.
- C. T-hot tracking CET temperatures.
- D. T-hot/T-cold differential temperature dropping.

**Answer**

"A" CET temperatures stable after 100 minutes. "A" is correct since the only criteria for evaluation of adequacy of core cooling via HPI is a go down in CET temps. "B", "C", and "D" are individual indications of adequate primary to secondary heat transfer.

**References**

1202.004 Rev 3

EOP Technical Bases Document, 074-1152414, Rev. 8 Developed for 1999 exam.

Training Objectives: ANO-1-LP-RO-EOP04: 6

QID: 0335, Rev Date: 9-7-99

Question Source:	Bank #	<u>    X    </u>
	Modified Bank #	<u>          </u>
	New	<u>          </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>    X    </u>
	Comprehension or Analysis	<u>          </u>
	LOD = 2.5	

Examination Outline Cross-reference:

Level	<u>RO</u>	<u>SRO</u>
K/A #	BW/E04. A1.3	BW/E04. A1.3
Importance Rating	3.6	3.8
Tier #	1	
Group #	2	
CFR references	41.7 / 45.5 / 45.6	

**Question 33**

Given:

- Degraded power event in progress
- K01-D1, "EDG 1 NOT AVAILABLE" is in alarm
- The Inside AO reports that engine DC control power was lost to EDG #1

What will be the expected effect on EDG #1 following a loss of engine DC control power?

- A. EDG#1 will NOT start automatically and CANNOT be started manually
- B. EDG#1 will start and run at idle speed but will NOT accelerate to run speed.
- C. EDG#1 will NOT start automatically but may be started manually.
- D. EDG#1 will start and run at load rpm speed but CANNOT be placed on its associated 4160 VAC Essential Bus.

**Answer**

"C" EDG#1 will NOT start automatically but may be started manually. The EDG can be started manually by mechanically overriding the governor run solenoid.

**Reference**

STM 1-31, rev 8, page 18.

Taken from/modified

Davis-Besse 1            08/03/1998

Question Source:	Bank #	_____
	Modified Bank #	_____ X _____
	New	_____

Question Cognitive Level:	Memory or Fundamental Knowledge	_____ X _____
	Comprehension or Analysis	_____
	LOD = unknown	

Examination Outline Cross-reference:

Level	RO	SRO
K/A #	000058.K3.01	000058.K3.01
Importance Rating	3.4	3.7
Tier #	1	
Group #	2	
CFR references	41.5, 41.10 / 45.6 / 45.1	

**Question 34**

What is the lowest instrument air pressure that Unit 1 and Unit 2 instrument air systems should remain cross-connected?

- A. 80 psig
- B. 60 psig
- C. 55 psig
- D. 35 psig

**Answer**

"B" 60 psig, is the correct value. "A" is the value at which Breathing Air can be cross-connected with IA. "C" is the value at which the TBV's will fail closed. "D" is the value at which IA is considered lost and the Rx should be tripped."

**References**

1203.024 Rev 9 PC-2

"Used in 1999 exam. Direct from Exam Bank, QID# 763 used in class exam"

Training Objectives: A1LP-RO-FH: 1.4

QID: 0346, Rev date: 9-7-99

Question Source:	Bank #	<u>    X    </u>
	Modified Bank #	<u>          </u>
	New	<u>          </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>    X    </u>
	Comprehension or Analysis	<u>          </u>
	LOD = 2.5	

**Examination Outline Cross-reference:**

Level	<u>RO</u>	<u>SRO</u>
K/A #	000065.K3.04	000065.K3.04
Importance Rating	3.0	3.2
Tier #	1	
Group #	3	
CFR references	41.5 / 41.10 / 45.6 / 45.13	

**Question 35**

Under which of the following conditions would PTS (Pressurized Thermal Shock) limits apply?

- A. All RCP's are off, HPI/break flow is causing a cooldown rate of 43 degrees per hour.
- B. All RCP's are on, HPI/break flow is causing a cooldown rate of 145 degrees per hour.
- C. All RCP's are on, RCS T-cold 480 degrees, cooldown rate is 145 degrees per hour.
- D. All RCP's are off, RCS T-cold is 296 degrees, cooldown rate is 43 degrees per hour.

**Answer**

"A" is correct, All RCP's are off, HPI/break flow is causing a cooldown rate of 43 degrees per hour.

**References**

1203.041, Rev. 004-02-0, note before step 1  
Modified regular exambank QID #3301.

Question Source:	Bank #	<u>  X  </u>
	Modified Bank #	<u>          </u>
	New	<u>          </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>          </u>
	Comprehension or Analysis	<u>  X  </u>
	LOD=4	

Examination Outline Cross-reference:

	<u>RO</u>	<u>SRO</u>
Level		
K/A #	BW/E13. K2.1	BW/E13. K2.1
Importance Rating	3.6	3.4
Tier #	1	
Group #	3	
CFR references	41.7 / 45.7	

**Question 36**

Given:

LOCA in progress with Degraded Power conditions  
 EDG #2 did NOT start  
 RCS pressure stabilized at 140 psig  
 SCM is 5 degrees

With these accident conditions, which of the following would pose the greatest challenge to core cooling?

- A. EDG #1 critical trouble alarm
- B. Tube Leak in the 'A' Steam Generator
- C. BWST level at 15 feet
- D. P-35A Reactor Building, Spray Pump trip

**Answer**

"A" is correct, EDG #1 critical trouble alarm.

**References**

STM 1-31, EDG, Rev 8.

AOP 1203.012A, Annunciator K01 Corrective Actions, change 034-01-0.

EDG OP 1104.036, change 041-09-0.

ANO, Unit 1            RO exam        12/10/1998

Question Source:	Bank #	<u>  X  </u>
	Modified Bank #	<u>      </u>
	New	<u>      </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>      </u>
	Comprehension or Analysis	<u>  X  </u>
	LOD = unknown	

Examination Outline Cross-reference:

	<u>RO</u>	<u>SRO</u>
Level		
K/A #	BW/A05.A1.3	BW/A05.A1.3
Importance Rating	3.7	3.7
Tier #	1	
Group #	3	
CFR references	41.7, / 45.5, 45.6	

**Question 37**

Given:

- Power escalation to 60% power is in progress.
- Current reactor power is 40%.
- There are 3 RCPs in service.
- "A" RCP is out of service due to an electrical fault in breaker H-11 (Reactor Coolant Pump P-32A).

Which of the following conditions would cause an automatic reactor trip?

- A. Annunciator "RCP TRIP" (K08-A6) is clear, RCS flow is lowering and "C" RCP amperage is zero on SPDS.
- B. Annunciator "RCP TRIP" (K08-A6) is in alarm, RCS flow is lowering and "H2 L.O. RELAY TRIP" (K02-A5) in alarm.
- C. Breaker B-7146 (ICW Booster Pump P-114A) trips open and P-114B fails to auto start causing a loss of RCP Seal Cooling.
- D. Breaker H-21 (Reactor Coolant Pump P-32D) trips open due to an over-current condition causing a loss of the "D" RCP."

**Answer**

"B" is correct, Annunciator "RCP TRIP" (K08-A6) is in alarm, RCS flow is lowering and "H2 L.O. RELAY TRIP" (K02-A5) in alarm. The indications are for a loss of H2 bus which leaves only one RCP running at power. RPS will trip if no RCPs are running in a loop when greater than 0% power.

"A" is incorrect because indications are of a sheared shaft which requires a manual reactor trip. "C" is incorrect because a loss of seal cooling alone will not cause a reactor trip. "D" is incorrect because a loss of "D" RCP would result in one RCP in each loop with reactor power <55% - no automatic reactor trip will result."

**References**

1203.012G, Rev. 032-03-0, Annunciator K08 Corrective Action, page 35  
 1105.001, Rev. 019-03-0, NI & RPS Operating Procedure, step 6.1, page 8"  
 Developed for 1998 RO Exam. Modified for use in 2002 RO/SRO exam. QID: 0002.  
 Training Objectives: ANO-1-LP-RO-AOP: 4.1

Question Source:	Bank #	<u>  X  </u>
	Modified Bank #	<u>      </u>
	New	<u>      </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>      </u>
	Comprehension or Analysis	<u>  X  </u>
	LOD = 3	

Examination Outline Cross-reference:		
Level	<u>  RO  </u>	<u>  SRO  </u>

K/A #	003.K2.01	003.K2.01
Importance Rating	3.1	3.1
Tier #	2	
Group #	1	
CFR references	41.7,/ 45.5, 45.6	

**Question 38**

The WCO is mixing a batch of acid with a concentration of 6,000 ppmB in accordance with 1104.003, CHEMICAL ADDITION.

Why must this batch be completed in two separate parts, of equal volume, one with boric acid and one without?

- A. For this concentration dilution is recommended to prevent exceeding the heat trace capability.
- B. For this concentration the required volume of water is greater than the capacity of the BAMT.
- C. To ensure the BAMT outlet piping is adequately flushed when the evolution is complete.
- D. To zero out the actual level indication on the BAMT (zero on the remote indicator does not actually correspond to empty).

**Answer**

"B" is correct, For this concentration the required volume of water is greater than the capacity of the BAMT.

"A" is incorrect, the actual concentration where heat trace capability is exceeded is 12,250ppmB. "C" is incorrect, while the BAMT outlet is flushed at the conclusion of dumping operations, it does not answer the question. "D" is incorrect because although partly true, water is not added to correct for this issue.

**References**

1104.003, "Chemical Addition, change 034-00-0, page 8-11.

Question Source:	Bank #	_____
	Modified Bank #	_____
	New	<u>  X  </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	_____
	Comprehension or Analysis	<u>  X  </u>
	LOD = 2	

**Examination Outline Cross-reference:**

Level	RO	SRO
K/A #	004.K1.16	004.K1.16
Importance Rating	3.3	3.5
Tier #	2	
Group #	1	
CFR references	41.2 to 41.9 / 45.7 to 45.8	

**Question 39**

The plant is operating at 100% power near EOL.

During pre-outage scaffolding construction in Lower North Piping Room (LNPR), the instrument air line to the following valves has been severed:

- CV-1235, Pressurizer Level Control
- CV-1222, Letdown Orifice Block
- CV-1223, Letdown Orifice Bypass
- CV-1207, RCP Seals Total Injection Flow

With no operator action, which of the following describes the expected system response?

- A. Pressurizer level will rise continuously.
- B. Pressurizer level will rise to a higher steady state value.
- C. Pressurizer level will drop continuously.
- D. Pressurizer level will drop to a lower steady state value.

**Answer**

"A" Pressurizer level will rise continuously. CV-1235 and CV-1222 fail as-is on a loss of instrument air. CV-1223 fails closed and CV-1207 fails open on a loss of instrument air. This will result in lower letdown flow and higher seal injection flow resulting in PZR level to continuously rise. All other answers are incorrect and could be chosen if candidate fails to recall failure modes.

**References**

1203.024, Loss of Instrument Air, change 010-05-0, page 13, Attachment A  
Developed for use in A. Morris 98 RO Re-exam, Modified for use in 2002 RO/SRO exam.

Training Objectives: A1LP-RO-MU:10

QID: 0189, Rev date: 5/6/2002

Question Source:	Bank #	<u>    X    </u>
	Modified Bank #	<u>          </u>
	New	<u>          </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>          </u>
	Comprehension or Analysis	<u>    X    </u>
	LOD = 3	

Examination Outline Cross-reference:

	<u>RO</u>	<u>SRO</u>
Level		
K/A #	004.K3.05	004.K3.05
Importance Rating	3.8	4.2
Tier #	2	
Group #	1	
CFR references	41.7 / 45.6	

**Question 40**

Given:

RS-1 is de-energized due to an electrical fault.

Subsequently, the following plant conditions exist:

- Reactor has tripped.
- RCS pressure is 1200 psig, lowering slowly.
- RB pressure is 4.4 psig, and rising slowly.

Which ONE of the following describes the Engineered Safeguards Channels that are expected to actuate?

- A. ANALOG CHANNELS 1, 2, and 3; DIGITAL CHANNELS 2, 4, and 6
- B. ANALOG CHANNELS 2 and 3; DIGITAL CHANNELS 1 and 2
- C. ANALOG CHANNELS 2 and 3; DIGITAL CHANNELS 5 and 6
- D. ANALOG CHANNELS 1, 2, and 3; DIGITAL CHANNELS 1, 3, and 5

**Answer**

"A" is correct, ANALOG CHANNELS 1, 2, and 3; DIGITAL CHANNELS 2, 4, and 6. RS-1 powers Analog Channel 1 and the Odd Digital Channels (1,3,5,7,9). Analog Channels are dennergized to to trip, Digital Channels are energized to trip. With RCS pressure < 1590 psig and RB Pressure > 4 psig, Analog Channels 1, 2, and 3 and Digital Channels 1 through 6 should actuate. The loss of RS-1 will prevent the Odd Digital Channels from actuating.

**References**

STM 1-65, Rev 3, page 5, 8, and 16.  
Oconee 1 bank, 12/07/1998

Question Source:	Bank #	<u>    X    </u>
	Modified Bank #	<u>          </u>
	New	<u>          </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>          </u>
	Comprehension or Analysis	<u>    X    </u>
	LOD = unknown	

Examination Outline Cross-reference:

Level	<u>RO</u>	<u>SRO</u>
K/A #	013.K2.01	013.K2.01
Importance Rating	3.6	3.8
Tier #	2	
Group #	1	
CFR references	41.7	

**Question 41**

Under what conditions can the Control Board Operator bypass or defeat a component automatically actuated by ESAS?

- A. Bypassing or defeating a component automatically actuated by ESAS is not allowed.
- B. The Control Board Operator, after careful consideration, determines that the component is no longer required.
- C. ONLY when procedurally directed by the Emergency Operating or the Abnormal Operating procedures.
- D. After it is determined that the component is no longer needed and approval is obtained from the SM/CRS.

**Answer**

“D” is correct, After it is determined that the component is no longer needed and approval is obtained from the SM/CRS.

“A” is incorrect, provisions are made for this action. “B” is partially correct, the component must not be needed but the CBO cannot make this decision on his own. “C” is only one of the directions where a component can be bypassed/reset, CRS/SS permission is the other. “D” contains all correct elements, lack of need and supervisory (SRO) permission.

**References**

1015.001, CONDUCT OF OPERATIONS

Taken from Exam Bank QID # 4791, Used in A. Morris 98 RO Re-exam.

Question Source:	Bank #	<u>  X  </u>
	Modified Bank #	<u>          </u>
	New	<u>          </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>  X  </u>
	Comprehension or Analysis	<u>          </u>
	LOD = 4	

Examination Outline Cross-reference:

	<u>RO</u>	<u>SRO</u>
Level		
K/A #	013.K4.10	013.K4.10
Importance Rating	3.3	3.7
Tier #	2	
Group #	1	
CFR references	41.7	

**Question 42**

Given:

- The plant is at 80% power.
- The NI SASS mismatch alarm is bypassed due to a mismatch.

What would be the predicted plant response if NI-6 failed to 125%?

- A. Control rods move inward, feedwater flows go up.
- B. Control rods move inward, feedwater flows do down.
- C. Control rods move outward, feedwater flows go up.
- D. Control rods move outward, feedwater flow go down.

**Answer**

"A" Control rods move inward, feedwater flows go up. The mismatch alarm disables the SASS module automatic operation. When NI-6 fails to 125% power, ICS will see NI-6 as the input power. ICS will generate an error to drive rods in. AT the same time a cross-limit is generated to keep feedwater balanced with reactor power. Feedwater will go up. Therefore, "B", "C", and "D" are incorrect.

**References**

STM 1-64, Integrated Control System, rev 6, page 33, step 2.6.1, page 43, step 2.7  
 Used in 1999 exam. Direct from ExamBank, QID# 3723, Selected for 2002 RO exam.  
 Training Objectives: ANO-1-LP-RO-NI: 10  
 QID: 0299, Rev date: 9-5-99

Question Source:	Bank #	<u>  X  </u>
	Modified Bank #	<u>          </u>
	New	<u>          </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>          </u>
	Comprehension or Analysis	<u>  X  </u>
	LOD = 3	

**Examination Outline Cross-reference:**

Level	<u>RO</u>	<u>SRO</u>
K/A #	015.K3.04	015.K3.04
Importance Rating	3.4	4.0
Tier #	2	
Group #	1	
CFR references	41.7 /45.6	

**Question 43**

Which ONE of the following is an indication that Intermediate Range NI-3 is OVER-compensated during a reactor startup?

- A. NI-1 and 2 read 3 E+4 cps, and NI-3 reads 8 E-11 amps
- B. NI-3 reads 5 E-11 amps, and NI-4 is not on scale
- C. NI-3 reads 3 E-6 amps, and NI-4 reads 8 E-7 amps
- D. NI-1 and 2 read 8 E+5 cps, and NI-3 reads 2 E-11 amps

**Answer**

“D” is correct, NI-1 and 2 read 8 E+5 cps and NI-3 reads 2 E-11 amps.

**References**

STM 1-67, Rev 7.

Taken from INPO bank, Davis-Besse, 07/08/1997

Question Source:	Bank #	<u>  X  </u>
	Modified Bank #	<u>      </u>
	New	<u>      </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>      </u>
	Comprehension or Analysis	<u>  X  </u>
	LOD = 3	

**Examination Outline Cross-reference:**

Level	RO	SRO
K/A #	015.K5.02	015.K5.02
Importance Rating	2.7	2.9
Tier #	2	
Group #	1	
CFR references	41.7 / 45.7	

**Question 44**

Which inputs are supplied to the ICCMDS subcooled margin indication?

- A. Core Exit Thermocouple and narrow range pressure (1700-2500 psig).
- B. Hot Leg Temperature and narrow range pressure (1700-2500 psig).
- C. Core Exit Thermocouple and wide range pressure (0-3000 psig).
- D. Hot Leg Temperature and wide range pressure (0-3000 psig).

**Answer**

“C” Core Exit Thermocouple and wide range pressure (0-3000 psig), is the correct answer.

**References**

1105.008 Rev. 012-05-0

New, QID#2304 for 2004 RO/SRO exam

Training Objectives: A1LP-RO-NNI: 25

Question Source:	Bank #	<u>  X  </u>
	Modified Bank #	<u>      </u>
	New	<u>      </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>  X  </u>
	Comprehension or Analysis	<u>      </u>
	LOD = 2	

Examination Outline Cross-reference:

Level	<u>RO</u>	<u>SRO</u>
K/A #	017.K4.01	017.K4.01
Importance Rating	3.4	3.7
Tier #	2	
Group #	1	
CFR references	41.7	

**Question 45**

Given:

- Plant is at 100% power
- All CETs indicate 602 °F

ICC train ""B"" Core Exit Thermocouple TE-1152 fails to 900 °F.

What is the effect of this failure?

- A. Core Exit Thermocouple TE-1152 will be removed from the average.
- B. ICC Core Exit Thermocouple indication will go to ~627 °F.
- C. "TRAIN B SUBCLG MARG LO" annunciator will alarm.
- D. "B" SPDS will switch from ATOG to the ICC display.

**Answer**

"A" Core Exit Thermocouple TE-1152 will be removed from the average. CETs are averaged together to generate alarms, indication, or action. Therefore, "B", "C", and "D" are incorrect and "A" is correct since ICCMDS will determine that TE-1152 is unreliable and remove it from the average.

**References**

1105.008 Rev 11      Developed for 1999 exam.  
 Training Objectives: ANO-1-LP-RO-NNI: 25  
 QID: 0240, Rev date: 8-17-99

Question Source:	Bank #	<u>    X    </u>
	Modified Bank #	<u>          </u>
	New	<u>          </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>          </u>
	Comprehension or Analysis	<u>    X    </u>
	LOD = 2	

Examination Outline Cross-reference:

Level	<u>RO</u>	<u>SRO</u>
K/A #	017.K6.01	017.K6.01
Importance Rating	2.7	3.0
Tier #	2	
Group #	1	
CFR references	41.7 /45.7	

**Question 46**

Given:

- A 5 square foot LOCA hot leg break has occurred.
- Offsite power has also been lost.
- #1 EDG will not start.
- All other ES systems actuate properly.

Will Reactor Building cooling be sufficient to prevent exceeding Reactor Building design limits?

- A. Yes, one Spray train and one Emergency Cooling unit provides 100% cooling.
- B. No, it takes two Spray trains to provide 100% cooling.
- C. Yes, one Emergency Cooling unit will provide 100% cooling.
- D. No, two Spray trains and two Emergency Cooling units provide 100% cooling.

**Answer:**

- A. Yes, one Spray train and one Emergency Cooling unit provides 100% cooling.

It takes any of the following combinations to provide 100% RB cooling:

Both trains of RB Spray

Both Emergency Cooling units

One RB Spray train and one Emergency Cooling unit.

The only answer that contains one of the above combinations considering the given conditions (only one ES train available) is "A", all other answers contain incorrect combinations or combinations that are not available with the conditions.

**References**

T.S. 3.6.5.1

STM 1-08, Rev. 7, 2.7

Question Source:	Bank #	_____
	Modified Bank #	_____
	New	<u>  X  </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	_____
	Comprehension or Analysis	<u>  X  </u>
	LOD = 3	

Examination Outline Cross-reference:

Level	RO	SRO
K/A #	022.A1.01	022.A1.01
Importance Rating	3.6	3.7
Tier #	2	
Group #	1	
CFR references	41.5 / 45.5	

**Question 47**

Which of the following Reactor Building parameters are trended on the Safety Parameter Display System (SPDS) primary graphic display for Reactor Building Conditions (RB)?

- A. RB pressure, RCS pressure, RB flood level
- B. RB temperature, RB pressure, RB hydrogen concentration
- C. RB radiation levels, RB pressure, RB humidity
- D. RB flood level, RCS hot leg level, hydrogen concentration

**Answer**

"B" RB temperature, RB pressure, RB hydrogen concentration is the only correct combination of parameters. "A" and "D" are incorrect because no RCS parameters are displayed. "C" is incorrect because the display does not include RB humidity.

**References**

1105.014 (Rev 6, PC-1), Safety Parameter Display System  
Developed for the 1998 SRO exam.

Training Objectives: AA51002-041 10

QID: 0061, Rev date: 7/12/98

Question Source:	Bank #	<u>    X    </u>
	Modified Bank #	<u>          </u>
	New	<u>          </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>          </u>
	Comprehension or Analysis	<u>    X    </u>
	LOD = 3	

**Examination Outline Cross-reference:**

	<u>RO</u>	<u>SRO</u>
K/A #	022.A4.05	022.A4.05
Importance Rating	3.8	3.8
Tier #	2	
Group #	1	
CFR references	41.7 /45.5 to 45.8	

**Question 48**

Given the following plant conditions:

- 100% power
- Condensate Pumps P-2A and P-2C are in service
- Startup Xfmr #2 Feed to A1 (A-111) is inadvertently closed.

What is the expected condensate pump response and necessary operator response to this condition?

- A. Condensate Pump P-2A will trip, P-2B will auto start; verify MFW pump suction pressure recovers to normal.
- B. Condensate Pump Start/Stop responses are not affected by Startup Transformer operations; no operator action is required.
- C. Condensate Pump P-2C will trip leaving only P-2A running; trip reactor and carry out immediate actions of 1202.001, Reactor Trip.
- D. Heater Drain Pump P-8A will trip causing P-2B to auto start; verify plant runs back to 40% of 902 MWe.

**Answer**

"C" Condensate Pump P-2C will trip leaving only P-2A running; trip reactor and carry out immediate actions of 1202.001, Reactor Trip is correct.

"B" is incorrect. Startup #1 transformer does not affect the start/stop responses of the condensate pump, however, load shed features of Startup #2 transformer do affect the start/stop features of the condensate pumps. "A" is incorrect. Condensate pump P-2A remains in service if both P-2A and P-2C are running. Also the standby condensate pump will not auto start on load shed. "D" is incorrect. P-8A will trip due to load shed, however, the standby condensate pump will not auto start on load shed."

**References**

STM1-32 Developed for A. Morris 98 RO Re-exam, QID: 0218.  
Training Objective: AA51002-007: 26

Question Source:	Bank #	<u>    X    </u>
	Modified Bank #	<u>          </u>
	New	<u>          </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>          </u>
	Comprehension or Analysis	<u>    X    </u>
	LOD = 3	

Examination Outline Cross-reference:

	<u>RO</u>	<u>SRO</u>
Level		
K/A #	056.A2.04	056.A2.04
Importance Rating	2.6	2.8
Tier #	2	
Group #	1	
CFR references	41.5 / 43.5 / 45.3 / 45.13	

**Question 49**

Given:

- 100% power
- ICS in full automatic

The CBOR places the ICS Delta T-Cold Hand Auto Station meter selection switch in "POS" (position). The meter reads 54%. What does this mean in terms of ICS control of main feed water?

- A. The average of feedwater loop A and feedwater loop B demand is 54%.
- B. Feedwater loop B demand is greater than feedwater loop A demand.
- C. The feedwater loop B demand is being boosted by a 4 °F Delta T-Cold error.
- D. Feedwater loop A demand is greater than feedwater loop B demand.

**Answer**

"D" Feedwater loop A demand is greater than feedwater loop B demand. A reading >50% indicates that loop A demand is > loop B demand, therefore "D" is the correct response.

"A" is incorrect because the meter does not indicate average demand, "B" is an opposite response, "C" applies to looking at the MV reading (for which it would still be incorrect).

**References**

STM 1-64, Rev. 6, page 35, step 2.6.2.      Developed for the 1998 RO/SRO Exam.

Selected for use in 2002 RO/SRO exam.

Training Objectives: ANO-1-LP-RO-ICS      11

QID: 0063, Rev date: 7/12/98

Question Source:	Bank #	<u>  X  </u>
	Modified Bank #	<u>      </u>
	New	<u>      </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>      </u>
	Comprehension or Analysis	<u>  X  </u>
	LOD = 3	

Examination Outline Cross-reference:

Level	<u>RO</u>	<u>SRO</u>
K/A #	059.A3.07	059.A3.07
Importance Rating	3.4	3.5
Tier #	2	
Group #	1	
CFR references	41.7 / 45.5	

**Question 50**

Which of the following contains an OTSG that will have its EFW flowpath ISOLATED by EFIC vector module?

- A. "A" = 585 psig, "B" = 495 psig
- B. "A" = 620 psig, "B" = 582 psig
- C. "A" = 475 psig, "B" = 565 psig
- D. "A" = 495 psig, "B" = 590 psig

**Answer:**

B. "A" = 620 psig, "B" = 582 psig

**Notes:**

EFIC Vector isolation occurs only when an OTSG is less than 600 psig or if both are less than 600, one OTSG is 100 psig less than the other. Only answer "B" contains conditions warranting Vector isolation.

**References**

1105.005, Rev. 027-00-0

Modified from QID #1530 for use in 2004 RO/SRO exam.

Training Objective: A1LP-RO-EFIC:46

Question Source:	Bank #	<u>          </u>
	Modified Bank #	<u>    X    </u>
	New	<u>          </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>          </u>
	Comprehension or Analysis	<u>    X    </u>
	LOD = 3	

**Examination Outline Cross-reference:**

	<u>RO</u>	<u>SRO</u>
Level		
K/A #	061.A3.04	061.A3.04
Importance Rating	4.1	4.2
Tier #	2	
Group #	1	
CFR references	41.7 / 45.5	

**Question 51**

Which of the following must be performed to release T-16A contents with the Liquid Radwaste Process Monitor (RI-4642) inoperable?

- A. Estimate radiation level every four hours during the release
- B. Have an independent sample obtained and analyzed prior to release
- C. Estimate flow rate at least once every three hours during release
- D. T-16A can NOT be released if RI-4642 is inoperable

**Answer**

"B" have an independent sample obtained and analyzed prior to release.

Answer "B" contains the requirement from Att. B1 of 1104.020. The other answers are incorrect.

**References**

1104.020, Rev. 041-03-0, Att. B1, step 2.8

Modified regular exambank QID #2765 for use in 2004 RO/SRO exam.

Question Source:	Bank #	<u>        </u>
	Modified Bank #	<u>    X    </u>
	New	<u>        </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>    X    </u>
	Comprehension or Analysis	<u>        </u>
	LOD = 2	

**Examination Outline Cross-reference:**

Level	<u>RO</u>	<u>SRO</u>
K/A #	068.G2.1.23	068.G2.1.23
Importance Rating	3.9	4.0
Tier #	2	
Group #	1	
CFR references	45.2 / 45.6	

**Question 52**

Given:

- C-119A H<sub>2</sub>/O<sub>2</sub> Analyzer is OOS with repairs on parts hold
- C-119 H<sub>2</sub>/O<sub>2</sub> Analyzer is aligned to T-17
- T-18C Waste Gas Decay Tank is in service

Chemistry has requested Operations to vent the makeup tank to raise hydrogen purity. Which of the following best describes the proper H<sub>2</sub>/O<sub>2</sub> Analyzer system operation during the makeup tank venting operations?

- A. Makeup tank venting is not allowed unless both H<sub>2</sub>/O<sub>2</sub> Analyzers are operable in accordance with Technical Specifications.
- B. Keep C119 aligned to T-17 and commence makeup tank venting operations, align C119 to T-18C if high H<sub>2</sub>/O<sub>2</sub> concentrations occur.
- C. Align C119 to T-18C and commence makeup tank venting operations while monitoring for high H<sub>2</sub>/O<sub>2</sub> concentrations.
- D. Keep C119 aligned to T-17 and have chemistry sample T-18C every 15 mins when venting the makeup tank.

**Answer:**

“B” Keep C119 aligned to T-17 and commence makeup tank venting operations, align C119 to T-18C if high H<sub>2</sub>/O<sub>2</sub> concentrations occur.

**Notes:**

Operating procedure requires at least one analyzer operable to continuously monitor H<sub>2</sub>/O<sub>2</sub> concentrations. 1104.010, Hydrogen-Oxygen Analyzer System, limits and precautions state: If only one analyzer is operable, it shall monitor T-17 except when H<sub>2</sub>/O<sub>2</sub> concentrations in T-17 reaches region B of Attachment A during compressor operation, then it shall monitor waste gas decay tank being filled.

**References**

1203.010, Rev. 007-03-0, 3.2.4 Caution

**History:**

Developed for 1998 RO/SRO Exam.

Selected for use in 2004 RO/SRO exams.

Training Objectives: A1LP-WCO-GZ01:12

QID: 0067, rev date: 7/13/98

Question Source:	Bank #	<u>    X    </u>
	Modified Bank #	<u>          </u>
	New	<u>          </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>          </u>
	Comprehension or Analysis	<u>    X    </u>
	LOD = 3	

## Examination Outline Cross-reference:

Level	RO	SRO
K/A #	071.A2.02	071.A2.02
Importance Rating	3.3	3.6
Tier #	2	
Group #	1	
CFR references	41.5 / 43.5 / 45.3 / 45.13	

**Question 53**

How is it determined which pressurizer relief valve is in alarm?

- A. The relief valve position indicator light on C-486 shows which PSV is open.
- B. The K09 control room annunciator identifies which relief valve is open.
- C. Red light on relief monitor on C-486 will flash on the relief that is open.
- D. By checking the analog position indication and Hi-alarm lights on panel C-486.

**Answer**

"D" By checking the analog position ind. and Hi-alarm lights on panel C-486.

"A" is incorrect because a valve open light does not exist on C-486. "B" is incorrect because a common annunciator is used for all pressurizer relief valves. "C" is incorrect because the high alarm will be on for the relief valve that is open.

**References**

1105.013 Rev 6, 1203.012H Rev 029-02-0

Used in 1999 exam. Direct from ExamBank, QID# 1848 used in class exam

Training Objectives: ANO-1-LP-RO-RCS: 17

QID: 0301, Rev Date: 9-5-99

Question Source:	Bank #	<u>  X  </u>
	Modified Bank #	<u>          </u>
	New	<u>          </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>  X  </u>
	Comprehension or Analysis	<u>          </u>
	LOD = 2	

## Examination Outline Cross-reference:

Level	RO	SRO
K/A #	002.K6.12	002.K6.12
Importance Rating	3.0	3.5
Tier #	2	
Group #	2	
CFR references	41.7 / 45.7	

**Question 54**

The RCS is solid following an accident.

RCS pressure = 1700 psig.

RCS temperature is stable.

The operators bump an RCP and RCS temperature cooled down 4 degrees F in one minute.

How will RCS pressure respond to this transient?

- A. Rise initially and then drop to 1600 psig.
- B. Remain stable due to PZR heater operation.
- C. Drop below the ESAS actuation setpoint.
- D. Rise to greater than 1800 psig.

**Answer**

“C” Drop below the ESAS actuation setpoint.

**Notes:**

When solid a 1 degree temperature change can cause a 100 psig pressure change, therefore on a 4 degree temperature drop, pressure will drop 400 psig. Thus the only correct answer is "c", where pressure drops below 1590 psig.

**References**

1202.011, Rev. 004-02-0, step 17.B

**History:**

Modified from QID 0471 for 2004 RO exam

Training Objectives: A1LP-RO-EOP02:10

Question Source:	Bank #	<u>  X  </u>
	Modified Bank #	<u>          </u>
	New	<u>          </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	<u>  X  </u>
	LOD = 3	

**Examination Outline Cross-reference:**

	<u>RO</u>	<u>SRO</u>
Level		
K/A #	006.K5.05	006.K5.05
Importance Rating	3.4	3.8
Tier #	2	
Group #	2	
CFR references	41.5 / 45.7	

**Question 55**

Given:

- Reactor has tripped from 80% power.
- A malfunction of Rapid Feedwater Reduction (RFR) has caused MFW to overfeed both OTSG's.
- All PZR heater banks are in AUTO.
- No other operator actions are taken.

PZR heaters do NOT energize because:

- A. The pressurizer spray valve is open.
- B. The PORV is open.
- C. AN insurge from the pressurizer has occurred.
- D. An outsurge from the pressurizer has occurred.

**Answer**

"D" An outsurge from the pressurizer has occurred (the low level interlock at 55" is met).

**References**

STM 1-03, Rev 9, page 12-13.

Question Source:	Bank #	_____
	Modified Bank #	_____
	New	<u>  X  </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	_____
	Comprehension or Analysis	<u>  X  </u>
	LOD = 2	

Examination Outline Cross-reference:

	<u>RO</u>	<u>SRO</u>
Level		
K/A #	010.K4.02	010.K4.02
Importance Rating	3.8	4.1
Tier #	2	
Group #	2	
CFR references	41.7	

**Question 56**

Given:

- 100% power
- LT-1001, Pressurizer Level Transmitter, is selected for control.

Which of the following statements describe the plant response to LT-1001 failing LOW (assume no operator action)?

The pressurizer level control valve, CV 1235:

- A. Position REMAINS THE SAME, actual pressurizer level and RCS pressure GOES UP
- B. Opens, actual pressurizer level and RCS pressure GOES UP
- C. Position REMAINS THE SAME, actual pressurizer level and RCS pressure GOES DOWN
- D. Closes, actual pressurizer level GOES DOWN and pressurizer heaters turn off

**Answer**

"B" Opens, actual pressurizer level and RCS pressure GOES UP.

**References**

STM 1-03, rev 9, page 11-14.

From INPO BW bank, Davis-Besse June 1996, modified stem and distractors to fit ANO application.

Question Source:	Bank #	<u>          </u>
	Modified Bank #	<u>    X    </u>
	New	<u>          </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>    X    </u>
	Comprehension or Analysis	<u>          </u>
	LOD = 3	<u>          </u>

Examination Outline Cross-reference:

	<u>RO</u>	<u>SRO</u>
K/A #	011.K3.02	011.K3.02
Importance Rating	3.5	3.7
Tier #	2	
Group #	2	
CFR references	41.7 / 45.6	

**Question 57**

Given:

-“A” RPS has been placed in Channel Bypass due to RCS pressure transmitter (PT-1021) failed low.

-Plant is at 100% power and stable

-A lightning strike by the Reactor Building has resulted in the trip of 120V Vital AC distribution panel RS-3.

What is the status of the reactor and the RPS following the trip of RS-3?

- A. Reactor is at 100% power with one channel of RPS tripped
- B. Reactor has tripped due to 1 channel of RPS tripped
- C. Reactor has tripped due to 2 channels of RPS tripped
- D. Reactor is at 100% power with no RPS channels tripped.

**Answer**

“A” is the correct answer, Reactor is at 100% power with one channel of RPS tripped.

**References**

STM 1-63, RPS, REV 5, page 16.

ANO, Unit 1            R        12/10/1998

Question Source:	Bank #	<u>  X  </u>
	Modified Bank #	<u>      </u>
	New	<u>      </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>  X  </u>
	Comprehension or Analysis	<u>      </u>
	LOD = unknown	

Examination Outline Cross-reference:

	<u>RO</u>	<u>SRO</u>
Level		
K/A #	012.K2.01	012.K2.01
Importance Rating	3.3	3.7
Tier #	2	
Group #	2	
CFR references	41.7	

**Question 58**

Given:

- A Large break LOCA has been in progress for 1 minute.
- RCS pressure at 100 psig.
- RB pressure is 48 psig and rising.
- Annunciator K11-C6, RB SPRAY P35A ES FAILURE, is in alarm.

What are the immediate concern(s) for this alarm?

- A. P35A spray pump has a high motor winding temperature >300 degrees F.
- B. P35A is not supplying spray flow, need to ensure P35B has started and has >1050gpm flow.
- C. P35A NaOH Addition valve CV-1616 is shut while ES signal is present.
- D. P35A is supplying too much spray flow, need to take manual control of RB spray block valve (CV-2401) and throttle flow to <1050gpm.

**Answer**

"B" P35A is not supplying spray flow, need to ensure P35B has started and has >1050gpm flow.

**References**

1203.012J, annunciator K11 corrective actions, page 6, 25, 29.

STM 1-65, rev 3

Modified from ANO bank, QID 0401.

Question Source:	Bank #	<u>          </u>
	Modified Bank #	<u>  X  </u>
	New	<u>          </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>          </u>
	Comprehension or Analysis	<u>  X  </u>
	LOD = 4	

Examination Outline Cross-reference:

Level	<u>RO</u>	<u>SRO</u>
K/A #	026.G2.4.4	026.G2.4.4
Importance Rating	4.0	4.3
Tier #	2	
Group #	2	
CFR references	41.10 / 43.2 / 45.6	

**Question 59**

Given:

- Unit 1 is in Mode 5.
- All Reactor Building hatches are closed.
- Commencing a Reactor Building Purge per 1104.033, Attachment B.

Why is VEF-15, RB Purge Exhaust Fan, handswitch placed in AUTO prior to starting VSF-2, RB Purge Supply Fan?

- A. VEF-15 must be in AUTO for VSF-2 to start.
- B. To ensure SPING-1 is properly aligned for monitoring the exhaust duct.
- C. To prevent pressurizing containment if VEF-15 fails to start when VSF-2 starts.
- D. To ensure VEF-15 starts prior to VSF-2 starting.

**Answer**

"C" is correct, To prevent pressurizing containment if VEF-15 fails to start when VSF-2 starts because of the interlock between the supply and exhaust fans such that when the supply fan is started the exhaust fan will automatically start. "A" is incorrect because VSF-2 can be started in "override". "B" is incorrect because the SPING suction valve is in the exhaust duct but is not interlocked thru the hand switch for the fan. "D" is incorrect, in "AUTO" VEF-15 starts when VSF-2 is started, not prior to.

**References**

Stm 1-9, Reactor Building Ventilation, rev 3, page 10.  
1104.033 Reactor Building Ventilation

Question Source:	Bank #	_____
	Modified Bank #	_____
	New	<u>  X  </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	_____
	Comprehension or Analysis	<u>  X  </u>
	LOD = unknown	

Examination Outline Cross-reference:

Level	<u>RO</u>	<u>SRO</u>
K/A #	029.K4.02	029.K4.02
Importance Rating	2.9	3.1
Tier #	2	
Group #	2	
CFR references	41.7	

**Question 60**

The WCO reports the Spent Fuel Pool level is +1.5 ft.

What problem could this level pose for Spent Fuel Pool operations or fuel handling in the SFP?

- A. SFP minimum water temperature limit will be exceeded.
- B. SFP ventilation ducts will be flooded.
- C. Area dose rates will rise.
- D. SFP must be sampled within 5 hours.

**Answer**

"B" is correct, SFP ventilation ducts will be flooded. Answer "B" is correct since normal level is 0 ft with a maximum allowable level of +1.0 ft which prevents water carryover into the ventilation ducts.

Answer "A" is incorrect because this answer is associated with SF cooling capacity which is largely unaffected by pool level. Answer "C" is incorrect since this problem is associated with a low water level. Answer "D" is incorrect but plausible since the time for sampling is correct but level is greater than maximum allowed.

**References**

STM 1-7, Rev. 2 Ch. 1, Spent Fuel Cooling System, page 2

"Developed for 1999 exam. Modified for 2001 RO/SRO Exam."

Training objectives: ANO-1-LP-RO-SFC:2

QID: 0312, Rev Date: 11/16/00:

Question Source:	Bank #	<u>  X  </u>
	Modified Bank #	<u>      </u>
	New	<u>      </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	<u>  X  </u>
	LOD = 3	

Examination Outline Cross-reference:

Level	RO	SRO
K/A #	033.K3.01	033.K3.01
Importance Rating	2.6	3.1
Tier #	2	
Group #	2	
CFR references	41.7 / 45.6	

**Question 61**

Given:

- Plant tripped from 95% power due to a rapid loss of condenser vacuum.
- Condenser vacuum is at 15 inches Hg.

If the pressure control setpoint for both of the Atmospheric Dump Valves (ADV's) was set at the MAXIMUM value by mistake, which one of the following consequences may occur?

- A. The ADV's will maintain a LOWER main steam pressure and prevent lifting of the Main Steam Safety Valves.
- B. Main Steam Safety Valves may NOT reseal after operation due to the HIGHER main steam pressure being maintained by the ADV's.
- C. The ADV's will remain ISOLATED and the Main Steam Safety Valves will provide main steam pressure control.
- D. Main Steam Safety Valves will cycle LESS frequently during the event, minimizing the probability of a release.

**Answer**

"B" is correct. Main Steam Safety Valves may NOT reseal after operation due to the HIGHER main steam pressure being maintained by the ADV's.

**References**

STM 1-15, rev 7.

Question Source:	Bank #	_____
	Modified Bank #	_____
	New	<u>  X  </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	_____
	Comprehension or Analysis	<u>  X  </u>
	LOD = unknown	

Examination Outline Cross-reference:

Level	RO	SRO
K/A #	035.K6.02	035.K6.02
Importance Rating	3.1	3.5
Tier #	2	
Group #	2	
CFR references	41.7 / 45.7	

**Question 62**

Given:

- A plant startup is in progress with the reactor critical below the point of adding heat.
- "B" OTSG Turbine Bypass Valve (CV-6688) fails full OPEN and is unable to be closed with the handjack.
- Tave 526 degrees and dropping
- Pressurizer level 205 inches and dropping
- RCS pressure 2120 psig and dropping

What is the proper course of action?

- A. Initiate MSLI for the 'B' SG and maintain the reactor critical using 'A' SG TBV to control RCS temperature and pressure.
- B. Continue the reactor startup maintaining startup rate <1 DPM while continuing to monitor primary and secondary plant parameters.
- C. Go directly to 1203.003, OVERCOOLING for actions to mitigate the oversteaming of the 'B' SG.
- D. Trip the reactor and follow the guidance of 1202.001 REACTOR TRIP.

**Answer**

"D" is correct, Trip the reactor and follow the guidance of 1202.001 REACTOR TRIP.  
 "A" is incorrect. You would not want to isolate a SG and maintain the reactor critical.  
 "B" is incorrect. With the reactor below the point of adding heat with a stuck open TBV, this would not be possible. "C" is incorrect. This will be the ultimate EOP that you will end up in, however, it is necessary to trip the reactor first and progress through the Reactor Trip EOP.

**References**

1102.008 (Rev 018-00-0), Approach to Criticality, page 4.  
 Developed for use in A. Morris 98 RO Re-exam, Used in 2001 RO/SRO Exam  
 ANO Bank, QID 0202, 11/23/98, Training Objective: AA51002-008:8.9

Question Source:	Bank #	<u>    X    </u>
	Modified Bank #	<u>          </u>
	New	<u>          </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>          </u>
	Comprehension or Analysis	<u>    X    </u>
	LOD = 3	

Examination Outline Cross-reference:

	<u>    RO    </u>	<u>    SRO    </u>
Level		
K/A #	039.A2.04	039.A2.04
Importance Rating	3.4	3.7
Tier #	2	
Group #	2	
CFR references	41.5 / 43.5 / 45.3 / 45.13	

**Question 63**

Given:

- Plant is at 100% power.
- Condenser vacuum is 24.9 in Hg and slowly trending down.

What action would be taken when condenser vacuum reaches ~24.5 in Hg?

- A. Trip the operating MFW Pump Turbine.
- B. Adjust programmable alarm setpoint to ~23 in Hg
- C. Continue power operations in accordance with AOP 1203.016 for Loss of Condenser Vacuum.
- D. Trip the Reactor and the Main Turbine.

**Answer**

"D" is correct, Trip the Reactor and the Main Turbine. A manual trip of the turbine is required when vacuum reaches 24.5 in Hg when turbine load is > 270 Mwe.

Answer "C" is incorrect, continued operation in this condition can lead to turbine blading damage. Answer "A" is incorrect, this action is not taken until vacuum drops to ~5" Hg.

Answer "B" is incorrect, this action would be taken at 25 in Hg (not 23 in Hg) if operating >270 Mwe to alert operator of approaching trip criteria of 24.5 in Hg.

**References**

1203.016 rev. 011-00-0, Loss of Condenser Vacuum, page 1

Question Source:	Bank #	_____
	Modified Bank #	_____
	New	<u>  X  </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>  X  </u>
	Comprehension or Analysis	_____
	LOD = 3	

Examination Outline Cross-reference:

Level	RO	SRO
K/A #	055.K3.01	055.K3.01
Importance Rating	2.5	2.7
Tier #	2	
Group #	2	
CFR references	41.7 / 45.5	

**Question 64**

The CRS would like you to evaluate load on several buses in accordance with Procedures 1107.001 and 1107.002 for ES and non-ES electrical systems. In order to perform the estimate of loads, you will need to use the ammeters provided for various buses on the primary side of their respective 4160v transformers. Some of these ammeters are:

- A. A3 to B3, A4 to B6, and A1 to B3
- B. A3 to B5, A4 to B6, and A1 to B3
- C. A3 to B5, A2 to B6, and A1 to B3
- D. A3 to B3, A4 to B6, and A1 to B5

**Answer**

"B" is correct, A3 to B5, A4 to B6, and A1 to B3. All other combinations are incorrect.

**References**

STM 1-32, rev 22, page 106, 107, and 116.

OP 1107.001, change 060-03-0, and OP 1107.002 change 019-05-0.

Question Source:	Bank #	_____
	Modified Bank #	_____
	New	<u>  X  </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>  X  </u>
	Comprehension or Analysis	_____
	LOD = 4	

**Examination Outline Cross-reference:**

	<u>RO</u>	<u>SRO</u>
Level		
K/A #	062.A3.01	062.A3.01
Importance Rating	3.0	3.1
Tier #	2	
Group #	2	
CFR references	41.7 / 45.5	

**Question 65**

Given:

- An electrical fault has made the normal supply to D11 inoperable.
- D11 is being powered from it's emergency supply.

Which of the following is a concern in this abnormal configuration?

- A. The discharge rate of the battery cannot be monitored in this configuration.
- B. The static guard circuit is disabled and could cause inadvertent grounds on the bus.
- C. A single fault may disable both trains of safety equipment such as EDG's and ES pumps.
- D. It will prevent EDG #2 from starting, should it be required in an emergency situation.

**Answer**

"C" is correct. A single fault may disable both trains of safety equipment such as EDG's and ES pumps. All others are incorrect distracters for this procedure.

**References**

1107.004, Section 5.2, page 6, change 012-07-0.

Question Source:	Bank #	_____
	Modified Bank #	_____
	New	<u>  X  </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>  X  </u>
	Comprehension or Analysis	_____
	LOD = unknown	

Examination Outline Cross-reference:

Level	RO	SRO
K/A #	063.A4.01	063.A4.01
Importance Rating	2.8	3.1
Tier #	2	
Group #	2	
CFR references	41.7 / 45.5 to 45.8	

**Question 66**

Given:

- Plant is at 100% power.
- Surveillance test of EDG #1 is in progress.
- EDG # 1 is paralleled to the grid and loaded to 2750 KW.

A grid disturbance causes a complete loss of off-site power.

Which of the following responses should be expected/verified?

- A. A1 to A3 tie breaker (A-309) opens, EDG#1 output breaker (A-308) remains closed.  
A2 to A4 tie breaker (A-409) opens, EDG#2 starts and it's output breaker (A-408) closes.
- B. A1 to A3 tie breaker (A-309) remains closed, EDG#1 output breaker (A-308) opens.  
A2 to A4 tie breaker (A-409) opens, EDG#2 starts and it's output breaker (A-408) closes.
- C. A1 to A3 tie breaker (A-309) remains closed, EDG#1 output breaker (A-308) opens.  
A2 to A4 tie breaker (A-409) remains closed, EDG#2 starts and it's output breaker (A-408) remains open.
- D. A1 to A3 tie breaker (A-309) remains closed, EDG#1 output breaker (A-308) remains closed.  
A2 to A4 tie breaker (A-409) remains closed, EDG#2 starts and it's output breaker (A-408) remains open.

**Answer**

"A" is correct, A1 to A3 tie breaker (A-309) opens, EDG#1 output breaker (A-308) remains closed. A2 to A4 tie breaker (A-409) opens, EDG#2 starts and it's output breaker (A-408) closes.

**References**

1104.036, Section 16.0.

Question Source:	Bank #	_____
	Modified Bank #	_____
	New	<u>  X  </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	_____
	Comprehension or Analysis	<u>  X  </u>
	LOD = 3	

Examination Outline Cross-reference:

Level	<u>  RO  </u>	<u>  SRO  </u>
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K/A #	064.A2.16	064.A2.16
Importance Rating	3.3	3.7
Tier #	2	
Group #	2	
CFR references	41.5 / 43.5 / 45.3 / 45.13	

**Question 67**

Given:

- LOCA inside the Reactor Building.
- RE-3814, Service Water Loop I Radiation Monitor alarms.
- SW Loop II indications are normal.

Which of the conditions below when combined with the above condition would make it necessary to isolate the "A" & "B" RB Emergency Coolers?

- A. Loop II Service Water monitor is also in alarm.
- B. Instrument Air is lost.
- C. Discharge Flume monitor is also in alarm.
- D. RB area monitors are also in alarm.

**Answer**

"C" Discharge Flume monitor is also in alarm is the correct answer. Since Loop II is OK, then the confirmation of an actual release via the Discharge Flume monitor necessitates the isolation of Loop I. "A" would not corroborate a problem with Loop I coolers and indicate a need to isolate the Loop I coolers. "B" would have no affect on the ability to isolate or determine the need to isolate Loop I. "D" sounds logical but the RB area monitors would be in alarm anyway due to the LOCA.

**References**

1203.012I [Rev 37]

Taken from Exam Bank QID # 2571 (modified), Training Obj: ANO-1-LP-RO-RMS: 2

Question Source:	Bank #	<u>  X  </u>
	Modified Bank #	<u>          </u>
	New	<u>          </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	<u>  X  </u>
	LOD = 3	

Examination Outline Cross-reference:

Level	<u>RO</u>	<u>SRO</u>
K/A #	073.K1.01	073.K1.01
Importance Rating	3.6	3.9
Tier #	2	
Group #	2	
CFR references	41.2-41.9 / 45.7-45.8	

**Question 68**

During the performance of a plant shutdown, cooldown and depressurization of the RCS, the following valves are required to be closed at one point during these evolutions:

- NaOH to P-34A/P-35A Suction (CA-61)
- NaOH to P-34B/P-35B Suction (CA-62)
- NaOH Storage Tank (T-10) Outlet (CA-49)

What is the reason for this action?

- A. Prevent contamination of the NaOH Tank from RCS back leakage during decay heat removal operations.
- B. Prevent NaOH from leaking into the DH system and causing chemical contamination of the RCS.
- C. To prevent NaOH from being sprayed into containment when access is open to RB.
- D. Prevent overpressurizing the NaOH tank outlet piping from backleak during decay heat removal operations.

**Answer**

"B" Prevent NaOH from leaking into the DH system and causing chemical contamination of the RCS. "A" and "D" are incorrect. The normal pressures are such that leakage will go into the decay heat removal system instead of into the NaOH system.

"B" is correct. The head of the T-10 is sufficient to cause potential leakage into the decay heat system which goes into the RCS. "C" is incorrect. The NaOH MOV's are deenergized to accomplish this.

**References**

1102.010 (Rev 49) Developed for use in A. Morris 98 RO Re-exam K1.01  
 Training Objectives: AA51001-007 7.4  
 QID:0209, Rev Date: 11/23/98

Question Source:	Bank #	<u>    X    </u>
	Modified Bank #	<u>          </u>
	New	<u>          </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>    X    </u>
	Comprehension or Analysis	<u>          </u>
	LOD = 3	

Examination Outline Cross-reference:

Level	<u>    RO    </u>	<u>    SRO    </u>
K/A #	027.K1.01	027.K1.01
Importance Rating	3.4	3.7
Tier #	2	
Group #	3	
CFR references	41.2 to 41.9 / 45.7 to 45.8	

**Question 69**

Given:

- A LOCA has occurred.
- Post-LOCA Reactor Building pressure is 26 psia.
- Pre-LOCA RB temperature was 90 degrees F.

What power setting is required when placing hydrogen recombiner M55A in service?

- A. 68 KW
- B. 69 KW
- C. 70 KW
- D. 71 KW

**Answer:**

"C" is correct, 70 KW. Answer "C" is correct from the graph, the other answers are possible misuses of the graph if correct parameters are not applied.

**References**

1104.031, Rev. 014-02-0

Training Objectives: A1LP-RO-RBVEN:14

MUST SUPPLY STUDENT WITH 1104.031 ATT. B

Question Source:	Bank #	_____
	Modified Bank #	_____
	New	<u>  X  </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	_____
	Comprehension or Analysis	<u>  X  </u>
	LOD = 3	

Examination Outline Cross-reference:

Level	RO	SRO
K/A #	028.A2.01	028.A2.01
Importance Rating	3.4	3.6
Tier #	2	
Group #	3	
CFR references	41.5 / 43.5 / 45.3 / 45.13	

**Question 70**

The unit is in a refueling outage. Preparations are being made to fill the Fuel Transfer Canal to remove the core support assembly.

- The fill will be conducted using only P-40A Spent Fuel Cooling Pump.
- P-40A discharge flow rate is 1000 gpm.
- The initial level in the Fuel Transfer Canal is 396.5 ft.
- Total Refueling Canal volume is 21,953 gal/ft.  
(includes Spent Fuel Pool, Cask Pit, Tilt Pit, Refueling Canal, and Incore Instrument Tank)

1. The minimum height required in the Fuel Transfer Canal when lifting or pulling the core support assembly is 400 ft. What is the basis for this limit?
2. Estimate how long will it take to fill the Fuel Transfer canal to the minimum level based on the given conditions?
  - A. 1. To minimize radiation exposure to personnel while lifting or pulling the core support assembly.  
2. ~66 minutes
  - B. 1. To ensure adequate water volume remains in the Fuel Transfer Canal after lifting or pulling the core support assembly.  
2. ~77 minutes
  - C. 1. To minimize radiation exposure to personnel while lifting or pulling the core support assembly.  
2. ~77 minutes
  - D. 1. To ensure adequate water volume remains in the Fuel Transfer Canal after lifting or pulling the core support assembly.  
2. ~66 minutes

**Answer**

“C” is correct, C. 1. To minimize radiation exposure to personnel while lifting or pulling the core support assembly.  
2. ~77 minutes.

Per Procedure, the height must be at least 400 feet to minimize radiation exposure.

Time for fill =  $(21,953 \text{ gal/ft} \times 3.5 \text{ ft.})/1000 = 76.8 \text{ minutes.}$

**References**

Procedure 1102.015, “Filling the Fuel Transfer Canal”, change 021-06-0, page 6 and 12.

Question Source:	Bank #	_____
	Modified Bank #	_____
	New	<u>  X  </u>

Question Cognitive Level: Memory or Fundamental Knowledge \_\_\_\_\_

Comprehension or Analysis  
LOD = unknown

  X  

Examination Outline Cross-reference:

Level	RO	SRO
K/A #	034.A1.02	034.A1.02
Importance Rating	2.9	3.7
Tier #	2	
Group #	3	
CFR references	41.5 / 45.5	

### Question 71

Given:

- During a normal startup with reactor power at 10%.
- Main Turbine is in Operator Auto.
- A turbine bypass valve (TBV) fails open.
- The OTSG pressure drops several psig.

Steam header pressure will initially lower, with NO OPERATOR ACTION, what causes steam header pressure to recover?

- A. TBV's will compete with turbine governor valves for control of steam header pressure.
- B. Primary Coolant Temperature dropping will raise reactor power because of moderator temperature coefficient.
- C. Turbine governor valves will modulate to maintain header pressure at 895 psig.
- D. The Primary Coolant Pressure drop will raise reactor power because of the moderator pressure coefficient.

### Answer

"B" Primary Coolant Temperature dropping will raise reactor power because of moderator temperature coefficient, is the correct answer. "A" and "C" are incorrect because prior to placing the turbine in "Integ Cont" mode, the governor valves are solely controlled by the operator. "D" is incorrect because pressure has an insignificant effect at power on reactivity.

### References

STM 1-64, ICS, Revision 7, page 29-30.

Question Source:	Bank #	_____
	Modified Bank #	_____
	New	<u>  X  </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>  X  </u>
	Comprehension or Analysis	_____

LOD = unknown

## Examination Outline Cross-reference:

Level	<u>RO</u>	<u>SRO</u>
K/A #	041.K5.07	041.K5.07
Importance Rating	3.1	3.6
Tier #	2	
Group #	3	
CFR references	41.5 / 45.7	

**Question 72**

The main turbine trips from 20% RTP.

Which ONE of the following combinations represents the expected normal responses of the following primary plant parameters during the FIRST 30 SECONDS of the trip?

	Neutron Error	Tave	NR Pressure	PZR Level
A.	Increases	Increases	Increases	Increases
B.	Increases	Increases	Decreases	Increases
C.	Decreases	Decreases	Decreases	Decreases
D.	Decreases	Increases	Increases	Increases

**Answer**

"A" is correct. Neutron error becomes a large positive value while Tave increases because of the large heat generation that initially is not removed fast enough to prevent the increase in Tave. Since Tave increases, PZR level will increase (insurge) and this squeezes the bubble, causing NR Pressure to increase as well (making Decreases, Increases, Increases, Increases the correct answer).

**References**

STM 1-3, rev 9, RCS.

OP1203.018 turbine trip below 43% power.

Question Source:	Bank #	_____
	Modified Bank #	_____
	New	<u>  X  </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>  X  </u>
	Comprehension or Analysis	_____
	LOD = unknown	

Examination Outline Cross-reference:

	RO	SRO
Level		
K/A #	045.A1.05	045.A1.05
Importance Rating	3.8	4.1
Tier #	2	
Group #	3	
CFR references	41.5 / 45.5	

**Question 73**

Following a reactor trip, ES channels 1 through 4 have actuated.

While performing RT-10 to verify proper ES actuation, the CBOT notes the following at C18:

- P4A to P4B Crosstie (CV-3646) has no position indication.
- P4B to P4C Crosstie (CV-3640) has no position indication.

The CBOT suspects that this is due to a loss of power to MCC load center \_\_\_\_\_ on the \_\_\_\_\_ train.

- A. B62 /Green
- B. B52 / Green
- C. B62 / Red
- D. B52 / Red

**Answer**

“D”, B52 on Red train is correct. Others are incorrect combinations and choices.

**References**

STM 1-42, Service and Auxiliary Cooling Water, rev 7, page 18.

Question Source:	Bank #	_____
	Modified Bank #	_____
	New	<u>  X  </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>  X  </u>
	Comprehension or Analysis	_____
	LOD = unknown	_____

Examination Outline Cross-reference:

Level	RO	SRO
K/A #	076.K2.08	076.K2.08
Importance Rating	3.1	3.3
Tier #	2	
Group #	3	
CFR references	41.7	

**Question 74**

Which of the following describes the normal alignment (mode of operation) of the Instrument Air system?

- A. Unit 1 and Unit 2 IA systems cross-connected through 2" line 2CV-3015, both units air compressors carrying a portion of the IA loads.
- B. Unit 1 IA compressors in Auto with system load carried by Unit 2 IA compressors with system cross-connected via the 3" line 2CV-3004 open.
- C. Unit 2 IA compressors in Auto with system load carried by Unit 1 IA compressors with system cross-connected via the 2" 2CV-3015 & 3" line 2CV-3004 open.
- D. Unit 1 and Unit 2 IA system are normally split out and only cross-connected during a loss of IA event.

**Answer**

"A" is correct, Unit 1 and Unit 2 IA systems cross-connected through 2" line 2CV-3015, both units air compressors carrying a portion of the IA loads.

**References**

STM 1-48, and 1104.024, Instrument Air System.

Direct from regular exam bank QID# 4462, Training Obj: ANO-1-LP-RO-AOP:3

Question Source:	Bank #	<u>  X  </u>
	Modified Bank #	<u>      </u>
	New	<u>      </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	<u>  X  </u>
	LOD = 3	

Examination Outline Cross-reference:

	<u>RO</u>	<u>SRO</u>
Level		
K/A #	078.G2.1.28	078.G2.1.28
Importance Rating	3.2	3.3
Tier #	2	
Group #	3	
CFR references	41.7	

**Question 75**

Following an ESAS actuation the CBOT is directed to perform RT-10 to verify proper actuation. The RT instructs you to verify each component properly actuated on C16, C18, and C26.

How is this accomplished for containment isolation valves?

- A. Verify all containment isolation valve ""closed"" indication lights are illuminated.
- B. Compare containment isolation valve positions to positions listed on chart in RT-10.
- C. All containment isolation valves have the same color coding for ease of verification.
- D. Verify containment isolation valves are in position marked with black tape background.

**Answer**

“D” Verify containment isolation valves are in position marked with black tape background, is the correct response. A black tape background identifies the proper actuation position of ES components.

“A” is incorrect because not all containment penetration valves will be closed. “B” is incorrect because there is no chart of valve positions in RT-10. “D” is incorrect because color-coding of panel does not identify proper actuation position.

**References**

1015.018 Plant Labeling, change 006-03-0, page 20. Step 7.5.1

1202.012 Repetitive Tasks, change 004-02-0, page 17 step F

Developed for 1998 RO Exam. Selected for use in 2002 RO/SRO exam.

Training Objectives: ANO-1-LP-RO-EOP10 15.5

QID: 0104, Rev date: 7/14/98

Question Source:	Bank #	<u>    X    </u>
	Modified Bank #	<u>          </u>
	New	<u>          </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>    X    </u>
	Comprehension or Analysis	<u>          </u>
	LOD = 2	

Examination Outline Cross-reference:

Level	<u>    RO    </u>	<u>    SRO    </u>
K/A #	103.A3.01	103.A3.01
Importance Rating	3.9	4.2
Tier #	2	
Group #	3	
CFR references	41.7 / 45.5	

**Question 76**

Initial conditions:

- Unit 1 is at 45% power
- Water Box Cleaning for E-11B is in progress

Alarm K06-F7, "HOTWELL LEVEL HI/LO" comes in and the CBOT reports that Hotwell Level indicates a level of 21% .

The CRS dispatches the AO to check the status of the Condensate Makeup to the Hotwell (CV-2873). The AO reports that the breaker to CV-2873 is tripped and will not reset.

Where must the AO be dispatched to manually operate CV-2873 to makeup to the hotwell?

- A. On the south end of the condenser in the basement.
- B. On the north end of the condenser in the basement.
- C. Northwest side of the condenser on the mezzanine.
- D. Southeast side of the condenser on the feedwater heater deck.

**Answer**

"C" is correct, Northwest side of the condenser on the mezzanine. Other answers are locations of other condenser connecting systems.

**References**

STM 1-20, Condensate System  
AOP 1203.012E, change 035-01-0, page 54.  
1106.016, Attachment A.

Question Source:	Bank #	_____
	Modified Bank #	_____
	New	<u>  X  </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>  X  </u>
	Comprehension or Analysis	_____
	LOD = unknown	_____

Examination Outline Cross-reference:

	<u>RO</u>	<u>SRO</u>
Level		
K/A #	056G2.1.30	
Importance Rating	3.9	
Tier #	2	
Group #	1	
CFR references	41.7 / 45.7	

**Question 77**

ANO Unit 1 has just completed a refueling outage and has commenced plant start-up in accordance with 1102.002 and 1102.004.

The second Main feed pump should be placed in service:

- A. Prior to exceeding 50% power using the Gamma Metrics Linear Power instrument.
- B. Prior to exceeding 36% setting (~360 Mwe) on the Unit Load Demand (ULD) HI-Load Limit.
- C. Prior to reaching 50% open on MFW pump Low Load Control Valve demand.
- D. Prior to exceeding 45% setting (~450 MWe) on the Unit Load Demand (ULD) HI-Load Limit.

**Answer**

"B" is correct, Prior to exceeding 36% setting (~360 Mwe) on the Unit Load Demand (ULD) HI-Load Limit.

"A" is incorrect because the actual procedure statement is "Verify MFW flow is  $>0.90 \times 106$  lbm/hr prior to Gamma Metrics Linear Power raising above 45% power. "C" is incorrect because section 7.9 states that "WHEN ~350 Mwe is reached OR prior to reaching 90% open on Low Load Control Valve demand, THEN perform the following: 7.9.1 Place second MFWP (P-1A or P-1B) in service. "D" is incorrect because the value is too high at 45% power.

**References**

OP 1102.004, Power Operation, page 9, Rev 041-05-0.

Question Source:	Bank #	_____
	Modified Bank #	_____
	New	<u>  X  </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>  X  </u>
	Comprehension or Analysis	_____
	LOD = unknown	

Examination Outline Cross-reference:

	<u>RO</u>	<u>SRO</u>
Level		
K/A #	059.A1.03	
Importance Rating	2.7	
Tier #	2	
Group #	1	
CFR references	41.5 / 45.5	

**Question 78**

Plant conditions are:

- SCM is less than adequate.
- The RCS is in natural circulation mode.
- EFW pump P-7B is out of service.
- Both OTSG pressures are 900 psig.

OTSG fill rate will vary from two inches per minute to eight inches per minute depending on OTSG pressure. When OTSG pressure is < 800 psig a fill rate of 2 inches per minute will be imposed. The maximum fill rate of 8 inches per minute is based on an OTSG pressure of 1050 psig. The Fill rate from 800 psig to 1050 psig is linear.

The fill rate for the current condition is \_\_\_\_\_, and the OTSG level set point of 378" is selected by \_\_\_\_\_.

- A. 4.4 inch/min  
depressing the Train A and Train B REFLUX BOILING pushbuttons on C09.
- B. 4.4 inch/min  
EFIC automatically when RCP's are tripped.
- C. 4.0 inch/min  
depressing the Train A and Train B REFLUX BOILING pushbuttons on C09.
- D. 4.0 inch/min  
EFIC automatically when RCP's are tripped..

**Answer**

"A" is correct, 4.4 inch/min, by depressing the Train A and Train B REFLUX BOILING pushbuttons on C09. (STM 1-27, rev 6, page 4). Candidate must use linear equation  $y=mx+b$  to solve for fill rate of 4.4in/min, making "C" and "D" incorrect. By Procedure 1106.006, Emergency Feedwater Pump operation, the 378" set point must be selected on C09 by the operator, therefore B is incorrect.

**References**

STM 1-27, rev 6, page 4.

EOP 1202.012 Repetitive Tasks, RT5, change 004-02-0.

OP 1106.006, Emergency Feedwater Pump Operation, change 063-08-0

Question Source:	Bank #	_____
	Modified Bank #	_____
	New	<u>  X  </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	_____
	Comprehension or Analysis	<u>  X  </u>
	LOD = unknown	

Examination Outline Cross-reference:



Level	<u>RO</u>	<u>SRO</u>
K/A #	068.K5.04	
Importance Rating	3.2	
Tier #	2	
Group #	1	
CFR references	41.5 / 45.7	

**Question 80**

When a high radiation condition occurs in the Waste Gas Discharge Header (instrument RI-4830), the radiation monitor will cause what automatic actions to occur?

1. C-9A and C-9B Waste Gas Compressors power supply breakers will trip open.
2. The Aux. Building Vent Header diverts to the Waste Gas Surge Tank.
3. The Waste Gas Decay Tank effluent control valve (CV-4820) shuts.
4. The Aux. Building Vent Header diverts to the Waste Gas Decay Tank in service.

- A. 1 and 4
- B. 3 and 4
- C. 1 and 2
- D. 2 and 3

**Answer:**

"D" is correct, 2 and 3.

Answer "D" is correct, on a high radiation signal from RI-4830 the discharge isolation CV-4820 closes, CV-4830 closes, and CV-4806 opens to allow flow to divert to the Waste Gas Surge Tank. All other answers are combinations of related but incorrect choices.

**References**

1104.022, Rev. 032-03-0, Att. C, step 3.5.7  
Direct from regular ExamBank QID #1399.

Question Source:	Bank #	<u>  X  </u>
	Modified Bank #	<u>          </u>
	New	<u>          </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>  X  </u>
	Comprehension or Analysis	<u>          </u>
	LOD = 2	

Examination Outline Cross-reference:

Level	<u>RO</u>	<u>SRO</u>
K/A #	071.A4.25	
Importance Rating	3.2	
Tier #	2	
Group #	1	
CFR references	41.7 / 45.5 to 45.8	

**Question 81**

The in-service Unit 1 Control Room Supply Vent Radiation Detector, 2RITS-8001A, detects a high radiation condition.

Which of the following will occur?

- A. Control Room Air Supply Fan (VSF-8A or 8B) starts.
- B. Control Room Chiller Unit (VCH-2A or 2B) trips.
- C. Normal ventilation ducts are isolated automatically.
- D. 2VSF-9 (CR Emerg. A/C Fan) starts.

**Answer**

"C" is correct, Normal ventilation ducts are isolated automatically. "C" is correct because the high radiation isolates the control room and starts emergency ventilation fan VSF 9. "A" is incorrect because VSF-8A and VSF-8B are stopped. "B" is incorrect because VCH-2A or 2B are unaffected. "D" is incorrect because VSF-9 is started, NOT 2-VSF-9.

**References**

2104.007 Rev 021-03-0

Used in 1999 exam. Direct from ExamBank, QID# 113

Training Objectives: ANO-1-LP-RO-CRVNT 4

QID: : 0273, Rev date: 9-2-99

Question Source:	Bank #	<u>X</u>
	Modified Bank #	_____
	New	_____

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>X</u>
	Comprehension or Analysis	_____
	LOD = 2	_____

Examination Outline Cross-reference:

Level	<u>RO</u>	<u>SRO</u>
K/A #	072.K1.04	
Importance Rating	3.3	
Tier #	2	
Group #	1	
CFR references	41.2 to 41.9 / 45.7 to 45.8	

**Question 82**

During your performance of 1305.001, Supplement 6, Area Radiation Monitor Monthly Alarm Check, you discover Relay Room Area Monitor, RI-8002, high alarm setpoint is greater than the maximum allowable value.

What are the required actions?

- A. Record the value found and document set-point drift in Section 3.0 of surveillance test, and obtain procedure deviation to continue.
- B. Adjust the setpoint to less than or equal to max high alarm setpoint before recording the As-Left Setpoint.
- C. Record the value found, then have I&C make the required adjustment under a "blanket" Work Order.
- D. Record the value found and continue, nothing else need be done since RI-8002 is not a Tech Spec required monitor.

**Answer**

"B" is correct per the procedure, Adjust the set point to less than or equal to max high alarm set point before recording the As-Left Set point.

Answer "A" would be correct for discrepancies not governed by a procedural response.

Answer "C" is how this was handled in the past. Answer "D" is how an incompetent operator might proceed.

**References**

1305.001, Radiation Monitoring System Check and Test, change 014-07-0, page 41, step 2.3.5.

Modified regular exambank QID #2645 for use in 2001 RO Exam. Selected for use in RO/SRO exam.

Training Objectives: A1LP-WCO-ARMS 7

QID: 0379, Rev Date: 11/15/00

Question Source:	Bank #	<u>    X    </u>
	Modified Bank #	<u>          </u>
	New	<u>          </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>    X    </u>
	Comprehension or Analysis	<u>          </u>
	LOD = 2	

Examination Outline Cross-reference:

	<u>    RO    </u>	<u>    SRO    </u>
Level		
K/A #	072.A4.01	
Importance Rating	3.0	
Tier #	2	
Group #	1	
CFR references	41.7 / 45.5 to 45.8	

**Question 83**

The CONTROL ROD ASYMMETRIC annunciator (K08-C2) in alarm indicates:

- A. A rod is greater than 7 inches from its group average as measured by Relative Position Indication (RPI).
- B. A rod is greater than 9 inches from its group average as measured by Relative Position Indication (RPI).
- C. A rod is greater than 9 inches from its group average as measured by Absolute Position Indication (API).
- D. A rod is greater than 7 inches from its group average as measured by Absolute Position Indication (API).

**Answer**

"D" A rod is greater than 7 inches from its group average as measured by Absolute Position Indication (API). Answer "D" is correct since API is used to generate this alarm and this alarm does NOT indicate a runback.

Answer "A" is incorrect, the setpoint is correct but RPI is not utilized to generate this alarm.

Answer "B" is incorrect, this setpoint is for a plant runback and RPI is not utilized to generate this alarm. Answer "C" is incorrect, although API is the system that generates this alarm, the >9" setpoint is for a plant runback.

**References**

1203.012G, Rev. 032-01-0, Annunciator K08 Corrective Action, p.12

1203.003, Rev. 019, pc-1, Control Rod Drive Malfunction, p.2.

Direct from regular exambank QID #5339 for use in 2001 RO/SRO Exam.

Training Objectives: ANO-1-LP-RO-CRD 22

QID:0381, Rev Date: 11/16/00

Question Source:	Bank #	<u>    X    </u>
	Modified Bank #	<u>          </u>
	New	<u>          </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>    X    </u>
	Comprehension or Analysis	<u>          </u>
	LOD = 3	

Examination Outline Cross-reference:

	<u>RO</u>	<u>SRO</u>
Level		
K/A #	014.K1.01	
Importance Rating	3.2	
Tier #	2	
Group #	2	
CFR references	41.3 to 41.9 / 45.7 to 45.8	

**Question 84**

The plant is shutdown and cooled down. RCS pressure is 220 psig. I&C is performing calibration checks on "A" RPS channel.

Why will I&C request the RPS Pressure Selector switch on C04 (HS-1038), to be placed in the "Y" position?

- A. To allow remote indications to be checked during calibration.
- B. To prevent rapid depressurization of the RCS.
- C. To maintain pressurizer heaters off during testing.
- D. To allow the ERV low setpoint to be checked.

**Answer:**

"B" To prevent rapid depressurization of the RCS.

When I&C calibrates the pressure channel they will take the signal to max of scale, this will cause the ERV to open on it's high setpoint and will cause rapid depressurization of the RCS. Therefore, answer "B" is correct. The other answers are probable and related to RPS but incorrect.

**References**

1105.006, Rev. 009-03-0, 3.17.

Training Objectives: A1LP-RO-NNI: 14, From Bank QID#5545.

Question Source:	Bank #	<u>    X    </u>
	Modified Bank #	<u>          </u>
	New	<u>          </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	<u>    X    </u>
	LOD = 3	

Examination Outline Cross-reference:

	<u>RO</u>	<u>SRO</u>
Level		
K/A #	016.K5.01	
Importance Rating	2.7	
Tier #	2	
Group #	2	
CFR references	41.5 / 45.7	

**Question 85**

Initial conditions:

- A turbine trip and subsequent reactor trip occurred due to low condenser vacuum.
- Condenser vacuum continues to drop and all four Turbine bypass valves (TBV's) go shut.
- An alarm sounds K05-C2, VACUUM LOW ADV CONTROL ACTUATED.
- Condenser vacuum is restored shortly after this to 25" in both condensers.

The CRS directs you to continue secondary heat removal with the TBV's instead of the Atmospheric Dump Valves (ADV's).

To do this, you should:

- A. Place the hand switch on panel C02 "Turbine Bypass Low Vacuum override" in the "Cond" position
- B. Place the hand switch on panel C02 "Turbine Bypass Low Vacuum override" in the "AUTO" position
- C. Push the two buttons on panel C02 for "Low Vacuum Reset"
- D. Take the ADV control switches on panel C02 to "TBV mode".

**Answer**

"C" is correct, Place the hand switch on panel C02 "Turbine Bypass Low Vacuum override" in the "AUTO" position. "D" does not exist, while "B" is already in auto and won't change anything. "A" is incorrect because this can damage the condenser if placed in override.

**References**

STM 1-15, Main Steam, rev 7, page 21.

STM 1-40, Circ Water System and Intake Structure, rev 6.

Question Source:	Bank #	_____
	Modified Bank #	_____
	New	<u>  X  </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>  X  </u>
	Comprehension or Analysis	_____
	LOD = unknown	

Examination Outline Cross-reference:

	<u>RO</u>	<u>SRO</u>
Level		
K/A #	075.A2.03	
Importance Rating	2.5	
Tier #	2	
Group #	2	
CFR references	41.5 / 43.5 / 45.3 / 45.13	

**Question 86**

Given:

- Unit 2 is in a refueling outage with Breathing Air in use.
- An Instrument Air Dryer malfunction on Unit 2 causes Unit 1 Instrument air pressure to fall rapidly to 45 psig.
- Unit 1 Instrument Air pressure has now recovered to 50 psig.

Which of the following will be in use to restore or conserve Instrument Air pressure?

- A. Cross-connect with Unit Two Instrument Air
- B. Breathing Air to Instrument Air X-connection, HS-5503
- C. Pallet Air Compressor X-connection
- D. Instrument Air to Service Air X-over valve, SV-5400

**Answer**

"D" is the correct answer. The Service Air X-over valve will open at 50 psig and closes at 54 psig. "A" is incorrect since the low air pressure condition was caused by Unit Two, the IA cross connect between the units will have been closed. Unit 2's use of breathing precludes x-connection with breathing air, making "B" incorrect. "C" is incorrect, since this compressor is abandoned in place. since the Service Air X-over valve will be closed and Unit Two is not using Breathing Air. Since the low air pressure condition was caused by Unit Two, the IA cross connect between the units will have been closed.

**References**

1104.024, Rev. 026-08-0, Instrument Air System

STM 1-48, Compressed Air, Rev 8, page 42-43.

AOP 1203.024, change 010-07-0.

Modified Question from QID 0102, changed answer and stem as well as rearranged answer order.

Question Source:	Bank #	<u>          </u>
	Modified Bank #	<u>    X    </u>
	New	<u>          </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>          </u>
	Comprehension or Analysis	<u>    X    </u>
	LOD = 2	

Examination Outline Cross-reference:

Level	RO	SRO
K/A #	079.K4.01	
Importance Rating	2.9	
Tier #	2	
Group #	2	
CFR references	41.7	

**Question 87**

You are on watch in the Control Room when the following annunciator alarms:

- K12-A1, "FIRE"

As Fire Water Header pressure drops from 110 psig to 80psig select the order that fire pumps would start.

- A. Jockey FWP P-11; Diesel Fire Pump P-6B starts second; Electric Fire Pump P-6A starts last.
- B. Electric Fire Pump P-6A; Diesel Fire Pump P-6B starts second; Jockey FWP P-11 starts last.
- C. Electric Fire Pump P-6A; Jockey FWP P-11 starts second; Diesel Fire Pump P-6B starts last.
- D. Jockey FWP P-11; Electric Fire Pump P-6A starts second; Diesel Fire Pump P-6B starts last.

**Answer**

"D" is correct, Jockey FWP P-11; Electric Fire Pump P-6A starts second; Diesel Fire Pump P-6B starts last. The other choices are incorrect based on pressure to start for each one.

**References**

STM 1-60, Fire Protection System, rev 6, page 2.

Question Source:	Bank #	_____
	Modified Bank #	_____
	New	<u>  X  </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>  X  </u>
	Comprehension or Analysis	_____
	LOD = 2	

Examination Outline Cross-reference:

	<u>RO</u>	<u>SRO</u>
Level		
K/A #	086.A1.01	
Importance Rating	2.9	
Tier #	2	
Group #	2	
CFR references	41.5 / 45.5	

**Question 88**

Which ONE of the following contains all of the required information that should be included when making entries onto the Plant/Safety System Status Board?

- A. Component name/number, component status, date and time, initials of person making entry.
- B. Component name/number, component status, date and time.
- C. Component name/number, component status, initials of person making entry.
- D. Component status, date and time, initials of person making entry.

**Answer**

"A" Component name/number, component status, date and time, initials of person making entry. Only answer "A" contains all of the requirements, the other choices are either missing a piece or contain an incorrect piece of information.

**References**

1015.001, Rev. 054-08-0, step 12.7  
Pulled from Bank QID#5643.

Question Source:	Bank #	<u>    X    </u>
	Modified Bank #	<u>          </u>
	New	<u>          </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>    X    </u>
	Comprehension or Analysis	<u>          </u>
	LOD = 2	

Examination Outline Cross-reference:

Level	<u>    RO    </u>	<u>    SRO    </u>
K/A #	GG 2.1.2	
Importance Rating	3.0	
Tier #	3	
Group #		
CFR references	41.10 / 45.13	

**Question 89**

Given:

- Plant is at 100% power.
- On C13, the RCP Seal Leakage Collecting Tank (T-111) Fill Timer "A" reads 20.0 and "TIMER ON" light is ON.
- Fill Timer "B" reads 25.0 and "TIMER ON" light is OFF.

What is the current total RCP seal leakage?

- a. 1.1 gpm
- b. 1.6 gpm
- c. 2.0 gpm
- d. 2.5 gpm

**Answer**

"B" 1.6 gpm ( $40 / 25 = 1.6$ ) is the correct answer. Candidate should recall the volume of the T-111 tank pumped from high level to low level is 40 gallons.

He must also know that the Fill Timer to use is the timer which is NOT running and the timer units are in minutes. Therefore, 40 gallons divided by 25.0 equals 1.6 gpm and so "B" is correct.

"C" could be chosen if the candidate used a volume of 50 gallons or the "A" timer reading. "D" could be chosen if the candidate used a volume of 50 gallons and the "A" timer reading. "A" could be chosen if the candidate makes a math error.

**References**

1103.007 [Rev 5]

Developed for use in A. Morris 98 RO Re-exam

Training Objectives: AA51002-001:1.9

QID: 0190 Rev Date: 11/24/98

Question Source:	Bank #	<u>    X    </u>
	Modified Bank #	<u>          </u>
	New	<u>          </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	<u>    X    </u>
	LOD = 3	

Examination Outline Cross-reference:

	<u>RO</u>	<u>SRO</u>
Level		
K/A #	G2.1.7	
Importance Rating	3.7	
Tier #	G	
Group #	G	
CFR references	43.5 / 45.12 / 45.13	

**Question 90**

A rapid plant shutdown at 4 % per minute is in progress due to a RCS leak inside the reactor building. The CBOT reports that the RB Sump has risen 7% over the past 5 minutes.

Which of the following best describes the correct response?

- A. Continue the rapid plant shutdown at 4 % per minute.
- B. Raise the shutdown rate to 8 % per minute.
- C. Initiate HPI to maintain pressurizer level >200 inches.
- D. Trip the reactor and turbine and perform immediate actions.

**Answer**

“A” Continue the rapid plant shutdown at 4 % per minute. A 7% rise in reactor building sump level over 5 minutes corresponds to a conservative leak rate of ~43 gpm. ( $7\% \times 31 \text{ gpm}/\% \text{ divided by } 5 \text{ minutes} = 43.4 \text{ gpm}$ ).

1203.039, Excess RCS Leakage, provides recommended shutdown rates of 0.5 to 5 %/min for RCS leaks <50 gpm and 5 to 10 %/min for RCS leaks >50 gpm. Therefore, (a) is the correct response. (b) is incorrect since the leak rate is <50 gpm. (c) and (d) are incorrect since leak rate is within the capacity of normal makeup (if HPI is required due to the leak the reactor should be tripped).

**References**

1203.039 (Rev 4, PC-1), Excess RCS Leakage, pages  
 Developed for 1998 RO/SRO Exam. 2.1.20  
 Training Objectives: ANO-1-LP-RO-AOP: 4.3  
 QID:0050 Rev Date: 7/13/98

Question Source:	Bank #	<u>  X  </u>
	Modified Bank #	<u>      </u>
	New	<u>      </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>      </u>
	Comprehension or Analysis	<u>  X  </u>
	LOD = 3	

Examination Outline Cross-reference:

Level	RO	SRO
K/A #	G2.1.20	
Importance Rating	4.3	
Tier #	G	
Group #	G	
CFR references	41.10/43.5/45.12	

**Question 91**

Of the following CRD operating limits which one is NOT due to heat removal considerations?

- A. Maximum CRD travel is 420 inches per hour.
- B. Maximum CRD running time is 30 minutes per hour.
- C. No more than 2 phases are energized when movement is stopped.
- D. Latching control rods in JOG speed.

**Answer**

"D" Latching control rods in JOG speed. Answer "D" is correct, this limit is to prevent damage to CRDM spider.

Answers "A", "B", "C" are all limits associated with heat removal from CRDM and are therefore incorrect.

**References**

1105.009, Rev. 016-02-0, CRD System Operating Procedure, page 11.

Direct from regular exambank, QID #2322, for 2001 SRO Exam.

Training Objectives: ANO-1-LP-RO-CRD: 7

QID: 0400, Rev Date: 11/21/00

Question Source:	Bank #	<u>    X    </u>
	Modified Bank #	<u>          </u>
	New	<u>          </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>    X    </u>
	Comprehension or Analysis	<u>          </u>
	LOD = 3	

Examination Outline Cross-reference:

	<u>RO</u>	<u>SRO</u>
Level		
K/A #	G2.1.32	
Importance Rating	3.4	
Tier #	G	
Group #	G	
CFR references	41.10 / 43.2 / 45.12	

**Question 92**

During a Reactor Startup, the licensed Control Room Operators performing/supervising the startup shall not conduct shift relief until the reactor is critical and power is above a specific level OR the reactor is shutdown by a specific margin. This does not apply during physics testing.

Choose the answer with the correct power and shutdown margin at which a shift relief can be conducted.

POWER	SDM
A. $\geq 1.0\%$	1.5% delta k/k
B. $\geq 5.0\%$	5.0% delta k/k
C. $\geq 1.0\%$	5.0% delta k/k
D. $\geq 5.0\%$	1.5% delta k/k

**Answer**

"A"  $\geq 1.0\%$  power 1.5% delta k/k is correct per caution in 1102.008. (b), (c) & (d) are incorrect combinations of the same parameters.

**References**

1102.008, Approach to Criticality, change 018-02-0, page 5, step 5.12  
 Developed for A. Morris 98 RO Re-exam, Selected for use in 2002 RO exam.  
 Training Objectives: ANO-1-LP-RO-ADMIN 4  
 QID:0232, Rev Date: 11/25/98

Question Source:	Bank #	<u>  X  </u>
	Modified Bank #	<u>      </u>
	New	<u>      </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>  X  </u>
	Comprehension or Analysis	<u>      </u>
	LOD = 3	

Examination Outline Cross-reference:

	<u>RO</u>	<u>SRO</u>
Level		
K/A #	G2.2.1	
Importance Rating	3.7	
Tier #	G	
Group #	G	
CFR references	45.1 / 41.10	

**Question 93**

During plant startup at approximately 170 MWe which of the following control manipulations are performed?

- A. Place the second MFW pump in service at C02.
- B. Remove the Auxiliary FW pump from service at C12.
- C. Close the High Pressure Turbine drains at C02.
- D. Place Heater Drain Pumps in service at C12.

**Answer**

“C” Close the High Pressure Turbine drains at C02.

Only the HP Turbine drains are operated at 170 MWe, all the other manipulations are controlled at other stages of startup.

**References**

1102.002, Rev. 069-08-0, step 18.17

New, developed for 2004 RO exam.

Training Objectives: A1LP-RO-NOP: 4

Question Source:	Bank #	_____
	Modified Bank #	_____
	New	<u>  X  </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>  X  </u>
	Comprehension or Analysis	_____
	LOD = 2	_____

Examination Outline Cross-reference:

Level	<u>RO</u>	<u>SRO</u>
K/A #	G2.2.2	
Importance Rating	4.0	
Tier #	3	
Group #		
CFR references	45.2	

**Question 94**

Which of the following actions is required per Technical Specifications if you discover that a safety limit had been exceeded?

- A. Place the unit in Mode 3 within 12 hours.
- B. Maintain stable plant conditions until management and engineering determine a correct course of action.
- C. Immediately begin a slow, conservative shutdown at <5%/min.
- D. Place the unit in Mode 3 within 1 hour.

**Answer**

"D" is correct, Place the unit in Mode 3 within 1 hour. Tech Spec 6.7 requires that the unit be placed in Mode 3 within 1 hour and notification of the NRC, therefore "D" is the only correct response.

**References**

Technical Specification Section 2.0, Amend. 186  
 Developed for the 1998 RO/SRO exam  
 Training Objectives: AA61002-009: 4  
 QID: 0115, Rev Date: 7/14/98

Question Source:	Bank #	<u>  X  </u>
	Modified Bank #	<u>          </u>
	New	<u>          </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>  X  </u>
	Comprehension or Analysis	<u>          </u>
	LOD = 4	

**Examination Outline Cross-reference:**

	<u>RO</u>	<u>SRO</u>
Level		
K/A #	G2.2.22	
Importance Rating	3.4	
Tier #	G	
Group #	G	
CFR references	43.2 / 45.2	

**Question 95**

When is the Aux. Building Equipment Hatch on 404' NOT allowed to be opened?

- A. Operators are moving Irradiated Fuel in the SF area.
- B. The spent fuel Crane is being used to move a pump in the SF area.
- C. Operators are moving new fuel in the new fuel storage pit.
- D. Spent Fuel pool level is being raised.

**Answer**

"A" Operators are moving Irradiated Fuel in the SF area. "A" is correct because movement of irradiated fuel necessitates closure of equipment hatch in case of fuel handling accident.

"B" and "D" are incorrect, these do not pose a risk of a fuel handling accident. "C" is incorrect since it involves new fuel and is in the new fuel pit vs. in or over the SFP.

**References**

1502.003, REV. 006-03-0

Used in 1999 exam. Direct from ExamBank, QID# 3236"

Training Objectives: ANO-1-LP-RO-FH: 1

QID: 0362, Rev Date: 11/29/99

Question Source:	Bank #	<u>    X    </u>
	Modified Bank #	<u>          </u>
	New	<u>          </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>    X    </u>
	Comprehension or Analysis	<u>          </u>
	LOD = 3	

Examination Outline Cross-reference:

	<u>RO</u>	<u>SRO</u>
Level		
K/A #	G2.2.30	
Importance Rating	3.5	
Tier #	G	
Group #	G	
CFR references	45.12	

**Question 96**

During a refueling outage, a fully qualified licensed operator has the following radiological exposure:

- 875 mR TEDE this year (not including this week)
- 78 mR TEDE dose this week

What is the maximum dose that this operator can receive for the remainder of the year without exceeding the ENS routine annual administrative TEDE limit?

- A. 4047 mR TEDE
- B. 3047 mR TEDE
- C. 2047 mR TEDE
- D. 1047 mR TEDE

**Answer**

“D” is correct, 1047 Mr TEDE.

The ANO administrative annual limit is 2000 mR TEDE. The operator has received a total dose of 953 mR (875 + 78). So  $2000 - 953 = 1047\text{mR}$ .

**References**

RP-201, Dosimetry Administration (5.2.3)

Developed from regular exam bank QID 3308 for 2004 RO exam.

TUOI: ASLP-RO-RADP:14

Question Source:	Bank #	<u>    X    </u>
	Modified Bank #	<u>          </u>
	New	<u>          </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>          </u>
	Comprehension or Analysis	<u>    X    </u>
	LOD = unknown	

Examination Outline Cross-reference:

Level	<u>    RO    </u>	<u>    SRO    </u>
K/A #	G2.3.1	
Importance Rating	2.6	
Tier #	G	
Group #	G	
CFR references	41.12/43.4 / 45.9/45.10	

**Question 97**

A qualified Category III advanced radworker is assigned to perform a valve lineup in an area with a posted general area dose rate of 150 mR/hr.

To enter this area without an HP escort, which of the following is NOT required?

- A. Radworker must be logged in on the appropriate Radiation Work Permit.
- B. Radworker must be in possession of a suitable survey meter.
- C. Radworker must be knowledgeable of the area dose rates.
- D. Radworker must have a pocket ion-chamber self reading dosimeter (SRD).

**Answer**

"D", Radworker must have a pocket ion-chamber self reading dosimeter (SRD), is correct, an alarming dosimeter is required for entry into high radiation areas NOT a SRD.

(a) (b) & (c) are required for entry into high radiation areas per 1012.017.

**References**

1012.017 (Rev 05)

Developed for A. Morris 98 RO Re-exam

Training Objectives: EOI-S-LP-GET-RWT01.07 RWT44

QID:0144, Rev Date: 12/8/98

Question Source:	Bank #	<u>    X    </u>
	Modified Bank #	<u>          </u>
	New	<u>          </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>    X    </u>
	Comprehension or Analysis	<u>          </u>
	LOD = 2	

Examination Outline Cross-reference:

Level	<u>    RO    </u>	<u>    SRO    </u>
K/A #	G2.3.2	
Importance Rating	2.5	
Tier #	G	
Group #	G	
CFR references	41.12 / 43.4 / 45.9 / 45.10	

**Question 98**

Given:

- Reactor tripped
- OTSG pressures 830 psig and decreasing
- Tave 536 degrees F

Which plant condition below correlates to these parameters?

- A. All rods not on bottom
- B. Turbine did not trip
- C. A1 did not transfer to SU1
- D. RCS is saturated

**Answer**

“B” Turbine did not trip is the correct answer. The failure of the turbine to trip would cause OTSG pressures to be dropping and an overcooling that would cause the given Tave.

“A” is incorrect. This condition would not result OTSG pressures dropping. It would result in a Tave higher than that given. “B” is correct. “C” is incorrect. This result in loss of A1 however the DG would pick up A3 and therefore none of the conditions stated should have occurred. “D” is incorrect. The condition is causing an overcooling condition, however, the parameters given are not indicative of a saturated RCS.

**References**

1202.001 (Rev 26)

Used in A. Morris 98 RO Re-exam

Training Objectives: AA51003-006: 4

QID:0165, Rev Date: 05/13/93

Question Source:	Bank #	<u>    X    </u>
	Modified Bank #	<u>          </u>
	New	<u>          </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>          </u>
	Comprehension or Analysis	<u>    X    </u>
	LOD = 3	

Examination Outline Cross-reference:

Level	RO	SRO
K/A #	G2.4.1	
Importance Rating	4.3	
Tier #	G	
Group #	G	
CFR references	41.10 / 43.5 / 45.13	

**Question 99**

Identify the post trip RCS Tcold temperature at which entry into 1202.003 Overcooling is required.

- A. 560 degrees and dropping
- B. 550 degrees and dropping
- C. 540 degrees and dropping
- D. 530 degrees and dropping

**Answer**

"C" is correct, 540 degrees and dropping.

**References**

1202.003, Overcooling.

Developed from regular exam bank QID 366 for use on 2004 RO exam.

Question Source:	Bank #	<u>  X  </u>
	Modified Bank #	<u>          </u>
	New	<u>          </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>  X  </u>
	Comprehension or Analysis	<u>          </u>
	LOD = 2	

Examination Outline Cross-reference:

	<u>RO</u>	<u>SRO</u>
Level		
K/A #	G2.4.4	
Importance Rating	4.0	
Tier #	G	
Group #	G	
CFR references	41.10 / 43.2 / 45.6	

**Question 100**

The plant is operating at 100% power when the CBOR reports a loss of all ICS power as indicated by the ICS instrument power supply status lights on C13 OFF and a loss of all HAND and AUTO lights on ICS H/A stations.

The CRS has entered AOP 1203.001, ICS Abnormal Operations.

Which procedure is used in conjunction with this AOP?

- A. 1203.047, Loss of NNI Power
- B. 1202.003, Overcooling
- C. 1202.001, Reactor Trip
- D. 1203.027, Loss of Steam Generator Feed

**Answer**

“C” 1202.001, Reactor Trip is correct.

A loss of ICS power requires a manual reactor trip per 1203.001 making “C” correct. “A” is incorrect because no indication of a loss of NNI power is given. “B” and “D” are incorrect but are plausible disclaimers due to the potential feed water problems created from the loss of ICS power, however 1203.001 does not provide a transition to either of these procedures.

**References**

1203.001, ICS Abnormal Operation

Developed from regular exam bank QID 749 for use on 2004 RO exam.

Question Source:	Bank #	<u>  X  </u>
	Modified Bank #	<u>      </u>
	New	<u>      </u>

Question Cognitive Level:	Memory or Fundamental Knowledge	<u>      </u>
	Comprehension or Analysis	<u>  X  </u>
	LOD = 3	

Examination Outline Cross-reference:

Level	<u>RO</u>	<u>SRO</u>
K/A #	G2.4.8	
Importance Rating	3.0	
Tier #	G	
Group #	G	
CFR references	41.10 / 43.5 / 45.13	