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 TS and OP 1015.003A "Unit 1 Operations Logs." You must select the value of QPT from the most accurate equipment in order to retrieve the correct value for your logs.

In order from MOST accurate to LEAST accurate, the MOST accurate to LEAST accurate equipment for QPT is:

A. Excore NI QPT, Incore (PMS) QPT, Incore recorders

B. Incore (PMS) QPT, Excore NI QPT, Incore recorders

C. Incore (PMS) QPT, Incore recorders, Excore NI QPT

D. Incore recorders, Incore (PMS) QPT, Excore NI QPT

Answer
"B" is the correct answer, Incore (PMS) QPT is the most accurate for QPT, followed by Excore NI's for QPT, then last are the Incore (min/backup) 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	___X___

Question Cognitive Level:	Memory or Fundamental Knowledge	__X__
	Comprehension or Analysis	_____
	LOD = unclassified	

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 #	X
	Modified Bank #	
	New	

Question Cognitive Level:	Memory or Fundamental Knowledge	X
	Comprehension or Analysis	
	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.

Distractor Notes
"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 #	X
	Modified Bank #	
	New	

Question Cognitive Level:	Memory or Fundamental Knowledge	X
	Comprehension or Analysis	
	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
Unit 1 Plant Conditions:

Reactor is tripped from 100% power. Four CRDM's fail to drop according to indications in the control room. You are given the order by the CRS to initiate Emergency Boration in accordance with EOP 1202.012 (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.
Developed for 1998 RO Exam. Used in 2001 RO/SRO Exam, QID 0005, Rev date 6/17/98

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

Question Cognitive Level:	Memory or Fundamental Knowledge	__X__
	Comprehension or Analysis	_____
	LOD = 2	

Examination Outline Cross-reference:

Level	RO	SRO
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 #	X
	Modified Bank #	
	New	

Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	X
	LOD = 4	

Examination Outline Cross-reference:

Level	RO	SRO
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.

Distractors
"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 #	X
	Modified Bank #	
	New	

Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	X
	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 #	X
	Modified Bank #	
	New	

Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	X
	LOD = 3	

Examination Outline Cross-reference:

Level	RO	SRO
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 #	X
	Modified Bank #	
	New	

Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	X
	LOD = 4	

Examination Outline Cross-reference:

Level	RO	SRO
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	___X___

Question Cognitive Level:	Memory or Fundamental Knowledge	_____
	Comprehension or Analysis	___X___
	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 unit one reactor trips, and the following conditions are observed:

- NNI X Instrument Power Supply Status lights on C13 are OFF
- NNI Y 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	X

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

Examination Outline Cross-reference:

Level	RO	SRO
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 #	X
	Modified Bank #	
	New	

Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	X
	LOD = 2	

Examination Outline Cross-reference:

Level	RO	SRO
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
A fire occurs in unit 1 control room, forcing evacuation. All actions inside the control room are completed, with RO #1, RO#2, and CRS in the plant utilizing ONLY initial equipment as required. For the conditions below assume there is not enough time to light-off or start back-up pumps or utilize secondary tanks in the EFW system.

The SG levels are maintained at what level with what tank/pump combination:

A. SG levels controlled at 300”-320” with P-7B and T41

B. SG levels controlled at 300”-320” with P-7A and T41B

C. SG levels controlled at 280”-300” with P-7A and T41B

D. SG levels controlled at 280”-300” with P-7B and T41

Answer
“B” is correct, SG levels controlled at 300”-320” with P-7A and T41B is correct. 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	X

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

Examination Outline Cross-reference:

Level	RO	SRO
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 #	_____
	Modified Bank #	___X___
	New	_____

Question Cognitive Level:	Memory or Fundamental Knowledge	__X__
	Comprehension or Analysis	_____
	LOD = 2	

Examination Outline Cross-reference:

Level	RO	SRO
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
Initial Conditions:
Unit 1 is in EOP 1202.005 “Inadequate Core Cooling” procedure, in region 1 of the Figure 4 curves. Heat transfer from RCS to secondary has been restored and the RCS has been returned to saturation conditions with EFW pump P-7A supplying the feedwater to both OTSG’s.

The SG pressure should be controlled to:

A. The maximum cooldown rate achievable with EFW pump P-7A and the ADV’s / TBV’s

B. Prevent the RCS ERV from lifting

C. A value higher than the minimum steam pressure for EFW pump P-7A.

D. A value that will allow the OTSG levels to be maintained at 300”-320”

Answer
“C” is correct, A value higher than the minimum steam pressure for turbine-driven feed pumps, is the correct answer. “A” is incorrect because the initial conditions put the operator in region 1 with heat transfer in control so cooldown rate is limited to <300F/hr. “B” is incorrect because the PORV will lift and should be left open until a 100psid exists between RCS and OTSG’s. “D” is incorrect because level and pressure are not coupled directly and the level to be maintained is 370”-410”.

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

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

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

Examination Outline Cross-reference:

Level	RO	SRO
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 uncovery with certain size primary system LOCAs.

References
1202.002 (Rev 3)
1105.014 [Rev 6]
Modified from Exam Bank QID # 540
Used in A. Morris 98 RO Re-exam.

Question Source:	Bank #	X
	Modified Bank #	
	New	

Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	X
	LOD = 3	

Examination Outline Cross-reference:

Level	RO	SRO
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:

Level	RO	SRO
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
Unit one is in a normal startup Procedure. 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 then attempts to trip the reactor and goes to EOP 1202.001, Reactor Trip. The Reactor did not trip and CRD Power supply breaker A-501 does not trip. Which condition would prevent the shutdown of the reactor by emergency boration?

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.
1202.001 "Reactor Trip" EOP.

Question Source:	Bank #	
	Modified Bank #	
	New	X

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

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
Unit 2 is at 100% power, BOL, Tave and RCS Pressure are in the center of their normal operating bands with all ICS stations in Auto when alarm K07-B3 "ASYM ROD RUNBACK IN EFFECT" sounds. 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. Go down due to power reduction from rod movement
2. Go up because of negative MTC
3. Level out inside normal bands.

B. 1. Go up due to power reduction from ICS runback to turbine
2. Go down because of positive MTC
3. Level out inside normal bands.

C. 1. Go up due to load reduction from ICS runback to turbine
2. Go down due to FW demand matching new lower power at 40%
3. Level out inside normal bands.

D. 1. Go down due to power reduction from rod movement
2. Go up 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, Go down due to power reduction, Go up 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	___X___

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

Examination Outline Cross-reference:

Level	RO	SRO
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
Unit 1 of ANO-1 is in post trip recovery conditions. Plant conditions are as follows:

- A reactor trip from 55% rated power has occurred.
- Both OTSG pressures are less than 900 psig and LOWERING.
- The annunciator for K07-C5 "MSSV Open" is lit.
- An operator reports that a Main Steam Safety Valve (MSSV) near OTSG "B" is discharging to the atmosphere.

What control/safety equipment should be used FIRST to stabilize the plant IAW EOP 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 reseat the MSSV.

Answer
"D" is correct, attempt to reseat 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	X

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

Examination Outline Cross-reference:

Level	RO	SRO
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 #	X
	Modified Bank #	
	New	

Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	X
	LOD = 2	

Examination Outline Cross-reference:

Level	RO	SRO
K/A #	BW/A01.K3.2	BW/A01.K3.2
Importance Rating	3.2	3.6
Tier #	1	
Group #	2	
CFR references	41.5 / 41.10 / 45.6 / 45.13	

Question 21
Anticipatory rate trips for the Main Turbine in the RPS are provided to:

A. Trip the Reactor when above 43% power in order to limit reactor heat input to the system with no FW flow following a loss of the main feed pumps.

B. Trip the Reactor when above 41% power in those cases where a loss of secondary heat sinks would likely result in a reactor trip based on the primary response to the loss of heat removal capabilities.

C. Trip the Reactor when above 43% power in those cases where a loss of secondary heat sinks would likely result in a reactor trip based on the primary response to the loss of heat removal capabilities.

D. Trip the Reactor when above 41% power in order to limit reactor heat input to the system with no FW flow following a loss of the main feed pumps.

Answer
"C," Trip the Reactor when above 43% power in those cases where a loss of secondary heat sinks would likely result in a reactor trip based on the primary response to the loss of heat removal capabilities, is the correct answer.
The 41% value is the value that it resets when going down in power (hence "B" and "D" incorrect) while the main feed pump(s) have their own ART around 7% power.

References
STM 1-63, Rev 5, page 11.

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

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

Examination Outline Cross-reference:

Level	RO	SRO
K/A #	BW/A04.K2.2	BW/A04.K2.2
Importance Rating	3.3	3.5

Tier #	1
Group #	2
CFR references	41.7 / 45.7

Question 22
IA 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 #	X
	Modified Bank #	
	New	

Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	X
	LOD = 3	

Examination Outline Cross-reference:

Level	RO	SRO
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
A Small break LOCA has occurred at Unit 1 and the CBOR has tripped the reactor and the CBOT has tripped the turbine. Both OTSG Pressure's are at 895psig with all 4 RCP's running.

The OTSG levels are being maintained with EFW using ___1___ Level instrument(s) with a fill rate of ____2_____.

A. 1. Operating Range,
   2. 2" to 8"/min in manual or 280gpm/SG in Auto

B. 1. Startup Range
   2. 2" to 8"/min in Auto or 280gpm/SG in manual

C. 1. Operating Range
   2. 2" to 8"/min in Auto or 280gpm/SG in manual

D. 1. Startup Range
   2. 2" to 8"/min in manual or 280gpm/SG in Auto

Answer
"B" is correct, Startup Range, 2" to 8"/min in Auto or 280gpm/SG in manual. Operating Range does not cover the 20-40" 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 #	_____
	Modified Bank #	_____
	New	___X___

Question Cognitive Level:	Memory or Fundamental Knowledge	_____
	Comprehension or Analysis	___X___
	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
Unit 1 is at 100% Power when a medium to large break LOCA occurs. All safety injection equipment starts automatically. The purpose of piggyback mode during recovery from a LOCA is to:

A. Provide higherd reliability when combine with HPI pumps during the LOCA.

B. Provide an alternate source of water when the BWST empties.

C. Provide a low pressure discharge to the RCS when pressure in the primary is <250psig.

D. Provide a means of transferring to long-term core cooling with the LPI pumps and the RB sump when RCS Pressure is <150psig.

Answer
"B" is correct, Provide an alternate source of water when the BWST empties. Piggyback mode is implicitly designated for use when RCS pressure is >150psig and BWST is low so HPI pumps are required but RB sump water is needed.

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

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

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

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
Unit 1 at ANO has entered EOP 1202.011 "HPI Cooldown" and neither OTSG is available. The maximum cooldown rate is ____1_____ and if exceeded then ____2_____ is required.

A. 1. ≤ 100 degrees F
   2. Lower HPI flow and raise letdown flow

B. 1. ≤ 100 degrees F
   2. Lower HPI flow and lower letdown flow

C. 1. ≤ 150 degrees F
   2. Lower HPI flow and raise letdown flow

D. 1. ≤ 150 degrees F
   2. Lower HPI flow and lower letdown flow

Answer
"B" is correct. The others are combinations of wrong distracters such as SG tube differential cooldown rate of 150F and both flows are lowered if cooldown rate is exceeded per EOP.

References
EOP 1202.011 "HPI Cooldown"

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

Question Cognitive Level:	Memory or Fundamental Knowledge	_____
	Comprehension or Analysis	X
	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
Given:

- Plant was heating up in Mode 3
- RCS was at 420°F
- HPI pump P-36B is inoperable
- Operating HPI pump P-36A was secured due to a loss of suction event on 1/12/04 at 2330
- It is now 0000 on 1/16/04

What is the required Reactor condition and maximum RCS temperature allowed by the applicable Technical Specification LCO?

A. Less than or equal to 5% power, less than or equal to 525°F

B. Less than or equal to 0.99 Keff, less than or equal to 525°F

C. Less than or equal to 0.99 Keff, less than or equal to 350°F

D. Less than or equal to 0.99 Keff, less than or equal to 280°F

Answer
"C" is correct, Less than or equal to 0.99 Keff, less than or equal to 350°F.

References
Technical Specification 3.5.2
QID: 0469 , Not used.

Question Source:	Bank #	X
	Modified Bank #	
	New	

Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	X
	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 stablized.

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 stablized. 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 #	X
	Modified Bank #	
	New	

Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	X
	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?

AMSAC:

A. Trips the main turbine while DSS trips the regulating rods and starts the EFW pumps.

B. Trips the regulating rods while DSS trips the main turbine and starts EFW pumps.

C. Trips the main turbine and starts the EFW pumps while DSS trips the regulating rods.

D. Starts the EFW pumps and trips the regulating rods while DSS trips the main turbine.

Answer
"C", 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	X

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

Examination Outline Cross-reference:

Level	RO	SRO
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 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 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	___X___

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

Examination Outline Cross-reference:

Level	RO	SRO
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
AOP (1203.023) has been entered for a tube leak because of alarms on:

- 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)

SG-A N-16 AVG Leakrate GPM (SGALRGPM) is measuring 11 gpm. The required immediate actions to take are:

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	X

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

Examination Outline Cross-reference:

Level	RO	SRO
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
Unit 1 is at 100% power when a tube rupture is diagnosed from alarms and feed/level conditions for "B" OTSG. The EOP has been entered and you are designated by the CRS to check the core cooling monitor for core exit temperatures. The CET average is in an alarm state.

The alarm value is ___1____ and it is based on the average of ____2_____.

A. 1. The CET average of 770F
   2. All CET inputs EXCEPT the highest, lowest, and any that has a quality other than GOOD or LOW.

B. 1. The CET average of 770F
   2. All CET inputs EXCEPT the highest, lowest, and any that has a quality other than GOOD or HIGH.

C. 1. The CET average of 670F
   2. All CET inputs EXCEPT the highest, lowest, and any that has a quality other than GOOD or HIGH.

D. 1. The CET average of 670F
   2. All CET inputs EXCEPT the highest, lowest, and any that has a quality other than GOOD or LOW.

Answer
"C" is correct, The CET average of 670F, All CET inputs EXCEPT the highest, lowest, and any that has a quality other than GOOD or HIGH. The temperature setpoint is fundamental knowledge, making "A" and "B" incorrect. CET signal quality status is based on temperatures going high, so values excluded from the average should never be those that are high (ie only low and other than good quality), making "D" incorrect.

Reference
1105.008 Inadequate Core Cooling Monitor and Display, change 012-05-0.

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

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

Examination Outline Cross-reference:

Level	RO	SRO
K/A #	000038.A1.08	000038.A1.08
Importance Rating	3.7	3.8
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 #	X
	Modified Bank #	
	New	

Question Cognitive Level:	Memory or Fundamental Knowledge	X
	Comprehension or Analysis	
	LOD = 2.5	

Examination Outline Cross-reference:

Level	RO	SRO
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
During a LOOP at Unit 1 of ANO-1, The alarm is in for K01-D1, “EDG 1 Not AVAILABLE”. The report to the CRS is that engine DC control power was lost to EDG #1.

What will be the expected effect on Emergency Diesel Generator (EDG) #1 following a loss of engine DC control power?

The EDG will...

A. NOT start automatically and CANNOT be started manually

B. start and run at idle speed but will NOT accelerate to run speed.

C. NOT start automatically but may be started manually.

D. start and run at load rpm speed but CANNOT be placed on its associated 4160 VAC Essential Bus.

Answer
“C” 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 can 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 #	X
	Modified Bank #	
	New	

Question Cognitive Level:	Memory or Fundamental Knowledge	X
	Comprehension or Analysis	
	LOD = 2.5	

Examination Outline Cross-reference:

Level	RO	SRO
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
IN reference to the following excerpt from step 4 B.2 of EOP 1202.004, "Overheating":

4. IF any of the following criteria is met, THEN perform the following, while continuing attempts to restore secondary feed:

• ERV opens
• RCS press ≥2450 psig
• RCS press approaches NDTT Limit (Figure 3)
• Secondary feed not expected to become available

A. Initiate HPI cooling (RT 4).
1) Record current time for reference in step 10:_____

B. IF no HPI pumps are available, THEN perform the following:
1) IF SCM is adequate, THEN trip the running RCP.

2) Manually cycle ERV (PSV-1000) as follows, while continuing with this procedure:

a) Open ERV.

b) WHEN either of the following criteria is met, THEN place ERV in AUTO:
• RCS press drops to 1650 psig if ES is armed

• SCM approaches minimum adequate

c) WHEN RCS press reaches 2400 psig
OR
approaches NDTT Limit on Figure 3,THEN repeat steps a) and b) above.

Which ONE of the following describes the reason for MANUALLY operating the ERV instead of relying on automatic operation?

A. Automatic operation would result in more cycles on the ERV, which increases the chances of ERV failure.

B. Manual operation allows the pressure of the RCS to be reduced faster.

C. Automatic operation would result in over pressurization of the Quench Tank (T-42).

D. Manual operation precludes challenging the safety function of the ERV.

Answer
"A" is correct, Automatic operation would result in more cycles on the ERV, which increases the chances of ERV failure.

References
GEOG bases 74-1152414-09, Vol 2, part III.C, pages 1-37, revision 3/31/2000.
1202.004, EOP for "Overheating".
Crystal River, Unit 3, Date : 03/22/1996

Question Source:	Bank #	X
	Modified Bank #	
	New	

Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	X
	LOD=4	

Examination Outline Cross-reference:

Level	RO	SRO
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 #	X
	Modified Bank #	
	New	

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

Examination Outline Cross-reference:

Level	RO	SRO
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 #	X
	Modified Bank #	
	New	

Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	X
	LOD = 3	

Examination Outline Cross-reference:

Level	RO	SRO
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
For ANO Unit 1, The boron concentration is low in the RCS. The SRO directs you to create a 6000 ppmB batch of boric acid in the Boric Acid Makeup Tank (BMAT) in order to dump to the Boric Acid Addition Tanks (BAAT) using procedure 1104.003, “Chemical Addition.” A portion of section 7 of this Procedure, “Boric Acid Mix Tank (T-7) Operation“ is shown below:

7.3 Add water to BAMT as follows:

7.3.1 Verify a Condensate Transfer Pump (P-9A or P-9B) in service.

7.3.2 Verify BA Mix Tank Outlet (CA-63) closed.

7.3.3 Open Condensate Transfer Supply to BAMT (CS-45).

7.3.4 When BAMT is filled to required level for the desired batch concentration, close CS-45.

7.4 Start BAMT agitator.

7.5 Place BAMT Heater (M-33) in AUTO and heat water to >10°F above crystallization temperature per Exhibit B of this procedure for Unit 1, or higher if directed by Unit 2 Operations, when mixing for Unit 2.

7.6 Unless adding follow-up batch of DI water, add barrel of boric acid.

Adding additional DI water, as specified in step 7.6 above, would be required because:

A. At this concentration dilution is recommended to prevent exceeding the heat trace capability.

B. At this concentration a second batch must be added because the volume of water exceeds the capacity of the BAMT.

C. To restore BMAT level when the solution equilibrates at the new higher temperature.

D. To zero out the actual level indication on the BMAT (zero on the remote indicator does not actually correspond to empty).

Answer
"B" is correct, At this concentration a second batch must be added because the volume of water exceeds the capacity of the BAMT. "A" is incorrect, the actual concentration where heat trace capability is exceeded is 12,250ppmB. "C" is incorrect because during heating the level may actually go up some. "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	X

Question Cognitive Level:	Memory or Fundamental Knowledge	_____
	Comprehension or Analysis	X
	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 #	X
	Modified Bank #	
	New	

Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	X
	LOD = 3	

Examination Outline Cross-reference:

Level	RO	SRO
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
Unit 1 Plant Conditions:

- Reactor has tripped.
- The RS1 bus vital power supply breaker trips
- RCS pressure is 1200 psig, decreasing slowly.
- RB pressure is 4.4 psig, and increasing slowly.

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

ANALOG CHANNELS... / DIGITAL CHANNELS...

A. ...1, 2, and 3 / ...2, 4, 6

B. ...2 and 3 / ...1 and 2

C. ... 2 and 3 / ...5 and 6

D. ... 1, 2, and 3 /...1,3,5

Answer
"A" is correct, Analog Channels 1, 2, and 3 with Digital channels 2, 4, and 6.

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

Question Source:	Bank #	X
	Modified Bank #	
	New	

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

Examination Outline Cross-reference:

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

Question 41

An OTSG tube leak has occurred. The plant has been shutdown and a cooldown is in progress. The plant is operating at 100% power. The normal and backup power supplies have failed and inverter Y24 is deenergized.

After Y24 is reenergized, is a reset required on the analog and digital channels for ESAS?

A. Analog - yes; digital - yes

B. Analog - yes; digital - no

C. Analog - no; digital - yes

D. Analog - no; digital - no

Answer

"D" Analog - no; digital - no

Notes:

Y-24 powers RS-4 which does not power any of the ESAS channels, therefore the correct answer is "D".

References

1105.003, Rev. 011-01-0

Training Objective: A1LP-RO-ESAS:3

QID: 0479, Rev date: 10/7/2000

Direct from regular exambank QID#3765 for 2004 RO/SRO exam

Question Source:	Bank #	X
	Modified Bank #	
	New	

Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	X
	LOD = 4	

Examination Outline Cross-reference:

Level	RO	SRO
K/A #	013.K4.06	013.K4.06
Importance Rating	4.0	4.3
Tier #	2	
Group #	1	
CFR references	41.7	

Question 42
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 #	X
	Modified Bank #	
	New	

Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	X
	LOD = 3	

Examination Outline Cross-reference:

Level	RO	SRO
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 #	X
	Modified Bank #	
	New	

Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	X
	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 #	_____
	Modified Bank #	_____
	New	X

Question Cognitive Level:	Memory or Fundamental Knowledge	X
	Comprehension or Analysis	_____
	LOD = 2	

Examination Outline Cross-reference:

Level	RO	SRO
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 #	X
	Modified Bank #	
	New	

Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	X
	LOD = 2	

Examination Outline Cross-reference:

Level	RO	SRO
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

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.

Notes:

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	X

Question Cognitive Level:	Memory or Fundamental Knowledge	_____
	Comprehension or Analysis	X
	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 #	X
	Modified Bank #	
	New	

Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	X
	LOD = 3	

Examination Outline Cross-reference:

Level	RO	SRO
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
Training Objective: AA51002-007 26
QID: 0218, Rev date: 11/18/98

Question Source:	Bank #	X
	Modified Bank #	
	New	

Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	X
	LOD = 3	

Examination Outline Cross-reference:

Level	RO	SRO

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 #	X
	Modified Bank #	
	New	

Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	X
	LOD = 3	

Examination Outline Cross-reference:

Level	RO	SRO

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
New, QID #1530 for use in 2004 RO/SRO exam.
Training Objective: A1LP-RO-EFIC:46

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

Question Cognitive Level:	Memory or Fundamental Knowledge	_____
	Comprehension or Analysis	X
	LOD = 3	

Examination Outline Cross-reference:

Level	RO	SRO
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 #	_____
	Modified Bank #	X
	New	_____

Question Cognitive Level:	Memory or Fundamental Knowledge	X
	Comprehension or Analysis	_____
	LOD = 2	

Examination Outline Cross-reference:

Level	RO	SRO
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 H2/O2 Analyzer is OOS with repairs on parts hold
- C-119 H2/O2 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 H2/O2 Analyzer system operation during the makeup tank venting operations?

A. Makeup tank venting is not allowed unless both H2/O2 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 H2/O2 concentrations occur.

C. Align C119 to T-18C and commence makeup tank venting operations while monitoring for high H2/O2 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 H2/O2 concentrations occur.

Notes:

Operating procedure requires at least one analyzer operable to continuously monitor H2/O2 concentrations. 1104.010, Hydrogen-Oxygen Analyzer System, limits and precautions state: If only one analyzer is operable, it shall monitor T-17 except when H2/O2 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 #	X
	Modified Bank #	
	New	

Question Cognitive Level: Memory or Fundamental Knowledge _____

	Comprehension or Analysis	X
	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 #	X
	Modified Bank #	
	New	

Question Cognitive Level:	Memory or Fundamental Knowledge	X
	Comprehension or Analysis	
	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:
New for 2004 RO exam
Training Objectives: A1LP-RO-EOP02:10
QID: 0471, Rev Date: 10/06/20

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

Question Cognitive Level:	Memory or Fundamental Knowledge	_____
	Comprehension or Analysis	X
	LOD = 3	

Examination Outline Cross-reference:

Level	RO	SRO
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
The following conditions at ANO Unit 1 exist:

A Reactor trip from 80% power occurred with a malfunction the Rapid Feedwater Reduction circuitry (RFRC). This caused the main Feedwater to overfeed both OTSG's.
Heater Bank 3 is in Auto.
No other operator actions are taken.

Heater Bank 3 does 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	X

Question Cognitive Level:	Memory or Fundamental Knowledge	_____
	Comprehension or Analysis	X
	LOD = 2	

Examination Outline Cross-reference:

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

Question 56
Initial conditions at Unit 1 of ANO-1.

-Unit 1 is at 100% power
-SASS is in manual

Which of the following statements describe the plant response to the controlling pressurizer level channel failing low (assume no operator action)?
The pressurizer level control valve:

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 #	_____
	Modified Bank #	___X___
	New	_____

Question Cognitive Level:	Memory or Fundamental Knowledge	__X__
	Comprehension or Analysis	_____
	LOD = 3	

Examination Outline Cross-reference:

Level	RO	SRO
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 #	X
	Modified Bank #	
	New	

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

Examination Outline Cross-reference:

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

Question 58
A Large break LOCA has been in progress for 1 minute with RCS pressure at 100 psig. RB pressure is 48 psig and rising. The annunciator K-11-C6, "RB Spray P35A ES Failure" is in alarm.

What are the immediate concern(s)?

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 spray block valve CV-2401 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, created for 2001 SRO exam.

Question Source:	Bank #	
	Modified Bank #	X
	New	

Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	X
	LOD = 4	

Examination Outline Cross-reference:

Level	RO	SRO
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
ANO Unit 1 has begun a reactor startup after an outage. Procedure 1104.033 for Reactor building ventilation was used to re-establish containment conditions for Mode 1 operations.

The reason the exhaust fan hand switch VEF-15 is placed in AUTO mode during the procedure is to ensure:

A. Negative containment pressure will be maintained when the outlet exhaust fan damper is opened.

B. SPING is aligned for proper monitoring of exhaust duct.

C. Negative containment pressure will be maintained when the supply fan VSF-2 is started.

D. Remote operation of the purge exhaust system from the control room is possible.

Answer
"C" is correct, Negative containment pressure will be maintained when the supply fan VSF-2 is started 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 the fan will open its associated damper when started but this does not ensure negative containment pressure. "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, "AUTO" is done for the interlock only.

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

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

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

Examination Outline Cross-reference:

Level	RO	SRO
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 #	X
	Modified Bank #	
	New	

Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	X
	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
Last week the Systems Engineering department completed a surveillance package on all of the Atmospheric Dump Valves (ADV's). All of the operating set points for all of the ADV's were set at the maximum by mistake.

Which one of the following consequences may occur?

A. Main steam pressure will be maintained at a lower value during transients because the main steam safety valves have a greater capacity

B. Main steam safety valves may not reseat after operation

C. Plant control during a loss of all AC event will be exacerbated because more secondary makeup will be required

D. Main steam safety valve's will cycle less frequently during an event, minimizing the probability of a release.

Answer
"B" is correct. Main steam safety valves may not reseat after operation.

References
STM 1-15, rev 7.

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

Question Cognitive Level:	Memory or Fundamental Knowledge	_____
	Comprehension or Analysis	X
	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
A plant startup is in progress with the reactor critical below the point of adding heat. 'B' SG Turbine Bypass Valve (CV-6688) fails full open and is unable to be closed with the handjack.

Given the following plant conditions:

- 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 the Overcooling tab (1202.003) of the EOP for actions to mitigate the oversteaming of the 'B' SG.

D. Trip the reactor and go to Reactor Trip tab (1202.001) of the EOP.

Answer
“D” is correct, Trip the reactor and go to Reactor Trip tab (1202.001) of the EOP.
“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 tab that you will end up in, however, it is necessary to trip the reactor first and progress through the Reactor Trip tab.

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 #	X
	Modified Bank #	
	New	

Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	X
	LOD = 3	

Examination Outline Cross-reference:

Level	RO	SRO

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
- 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 operations in accordance with AOP 1203.016 for loss of condenser vacuum.

D. Trip the Main Turbine and lower power.

Answer
“D” Trip the Main Turbine and lower power."Answer “D” is correct, 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	X

Question Cognitive Level:	Memory or Fundamental Knowledge	X
	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	X

Question Cognitive Level:	Memory or Fundamental Knowledge	X
	Comprehension or Analysis	_____
	LOD = 4	

Examination Outline Cross-reference:

Level	RO	SRO
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
A surveillance test for the alternate power supply breaker to D11 is being performed. The main concern during testing with the alternate power supply is:

A. The discharge rate of the battery cannot be monitored in this configuration.

B. With static guard circuit disabled, 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. Could cause EDG #2 to not start should it be required in an abnormal situation.

Answer
"C" is correct. 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	X

Question Cognitive Level:	Memory or Fundamental Knowledge	X
	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
ANO Unit 1 is at 100% power with a full load test of EDG #1 in progress. It is loaded to 2500 KW when a complete loss of off-site power occurs.

In these conditions, what are the immediate concerns and corresponding actions as the CBOT?

A. Overload/grid disruptions could trip the EDG(s), open the feeders to both ES buses (A-309 and A-409)

B. Overload/grid disruptions damaging the safety equipment on the bus powered by EDG #1, open the EDG output breaker (A-308)

C. Overload/grid disruptions could trip the reactor, open the feeders to both ES buses (A-309 and A-409)

D. Overload/grid disruptions could trip the reactor, open the EDG output breaker(s) for both ES buses (A-308 and A-408)

Answer
"A", Overload/grid disruptions could trip the EDG(s), open the feeders to both ES buses (A-309 and A-409)

References
1104.036, change 00-041-09, page 41.

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

Question Cognitive Level:	Memory or Fundamental Knowledge	X
	Comprehension or Analysis	_____
	LOD = 2	

Examination Outline Cross-reference:

Level	RO	SRO
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
During a 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 slightly)
Used in A. Morris 98 RO Re-exam K1.01
Training Objectives: ANO-1-LP-RO-RMS: 2
QID: 0136, Rev Date: 06/30/94

Question Source:	Bank #	X
	Modified Bank #	
	New	

Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	X
	LOD = 3	

Examination Outline Cross-reference:

Level	RO	SRO
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 #	X
	Modified Bank #	
	New	

Question Cognitive Level:	Memory or Fundamental Knowledge	X
	Comprehension or Analysis	
	LOD = 3	

Examination Outline Cross-reference:

Level	RO	SRO
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

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
MUST SUPPLY STUDENT WITH 1104.031 ATT. B
1104.031, Rev. 014-02-0
Training Objectives: A1LP-RO-RBVEN:14
New for 2004 RO/SRO exam.

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

Question Cognitive Level:	Memory or Fundamental Knowledge	_____
	Comprehension or Analysis	X
	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
ANO Unit 1 is in an outage and has started the procedure 1102.015, "Filling the Fuel Transfer Canal". The initial conditions are:

-Using only 1 SFP pump, PI-40A, flow rate of 1000gpm
-The initial height in the refueling canal is 396.5 ft.
-The gallons per foot in this section of the canal is 11,070 gal/ft
-Ignore the fuel tilt pit, incore instrument tank, and spent fuel pool water requirements

The minimum height to fill the Refueling canal in order to remove the core support assembly (minimizes radiation exposure) is ____1_____ and will be accomplished in _____2____ minutes.

A. ≥ 400 ft, 60.9

B. ≥ 401 ft, 49.8

C. ≥ 400 ft, 38.7

D. ≥ 399 ft, 27.7

Answer
"C" is correct. Per Procedure, the height must be at least 400 feet in the canal to remove the core support assembly, and using the (11,070 gal/ft X 3.5 ft)/1000 = 38.7 minutes.

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

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

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

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
During a normal startup with reactor power at 10%, a turbine bypass valve (TBV) inadvertently re-opens prior to the 50 psig bias being applied to the TBV's and prior to shifting from manual mode to "Integ Cont" mode. The turbine generator was being loaded when this occurred. The OTSG pressure drops several psig.

Steam header pressure will initially start to go up because:

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	X

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

Examination Outline Cross-reference:

Level	RO	SRO
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.	Goes Up……	Goes Up …..	Goes Up …….	Goes Up
B.	Goes Up ……	Goes Up …..	Goes Down ……	Goes Up
C.	Goes Down ..	Goes Down .	Goes Down ……	Goes Down
D.	Goes Down ..	Goes Up …..	Goes Up …….	Goes Up

Answer
"D" is correct. Neutron error becomes a large negative value while Tave goes up because of the large heat generation that initially is not removed fast enough to prevent the increase in Tave. Since Tave goes up, PZR level will rise (insurge) and this squeezes the bubble, causing NR Pressure to rise as well (making Goes Down, Goes Up, Goes Up, Goes Up… the correct answer).

References
STM 1-3, rev 9, RCS.
OP1203.018 turbine trip below 43% power.

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

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

Examination Outline Cross-reference:

Level	RO	SRO
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
Unit 1 at ANO-1 is at 50% power when an ES actuation occurs. Two Service water isolation valves, CV-3646 and CV-3640, failed to reposition due to power failure on the associated MCC load center ……. / of 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	X

Question Cognitive Level:	Memory or Fundamental Knowledge	X
	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
Instrument Air pressure has dropped to 75 psig.

Which of the following is the appropriate response for the given plant conditions to restore or conserve Instrument Air pressure?

A. Verify Service Air to Instrument Air cross-connect automatically opens.

B. Open Unit 1 to Unit 2 Instrument Air cross-connect.

C. Trip Reactor, actuate EFW and MSLI on both SGs.

D. If ICW available, isolate Seal Injection by closing CV-1206.

Answer
"B" is correct, Open Unit 1 to Unit 2 Instrument Air cross-connect. Per 1203.024, the U1 to U2 cross connect should be opened first.
"A" is incorrect, this does not occur until pressure is at 50 psig.
"C" is incorrect, this would not be done until pressure was less than 35 psig.
"D" is incorrect, this would not be done until pressure was less than 60 psig.

References
1203.024 [Rev 9]
Developed for 1998 RO/SRO Exam QID 0102.
Modified for A. Morris 98 RO Re-exam
Training Objectives: ANO-1-LP-RO-AOP 3

Question Source:	Bank #	X
	Modified Bank #	
	New	

Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	X
	LOD = 3	

Examination Outline Cross-reference:

Level	RO	SRO
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 #	X
	Modified Bank #	
	New	

Question Cognitive Level:	Memory or Fundamental Knowledge	X
	Comprehension or Analysis	
	LOD = 2	

Examination Outline Cross-reference:

Level	RO	SRO
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 CRS verifies that LS-2842 indicates a level of 21% in the CR.

Prior to entering the AOP for low hotwell level, 1203.012E, a verification of actual hotwell level can be done by ……. . The recovery of the event due to water box cleaning can be accomplished by ……..

A. ……Local cycling of power to LI-2842. / …….Local cycling of power to Make-up Valve (CV-2873).

B. ……Local site glass on west side of hotwells near CW outlet. / ……Local cycling of power to Make-up Valve (CV-2873).

C. ……Local site glass on east side of hotwells near CW inlet. / ……. Local cycling of power to Make-up Valve (CV-2873).

D. ……Local cycling of power to LI-2842. / …...Stopping and starting a condensate pump from the control room or the local breaker panel.

Answer
"C" is correct, Local site glass on east side of hotwells near CW inlet, Local cycling of power to Make-up Valve (CV-2873). Cycling the LI-2842 does not have any effect since the DP across the two condensers is causing the issue with the make-up valve. Location of local site glass is on the east side of the hotwells.

References
STM 1-20, Condensate System, revision 7, page 10.
AOP 1203.012E, change 035-01-0, page 54.

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

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

Examination Outline Cross-reference:

Level	RO	SRO
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 a start-up IAW OP1102.002 and OP 1102.004. The second Main feed pump should be placed in service

A. Prior to exceeding 36% 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 (~250 MWe) on the Unit Load Demand (ULD) HI-Load Limit.

Answer
"B," Prior to exceeding 36% setting (~360 MWe) on the Unit Load Demand (ULD) HI-Load Limit, is the correct answer. "A" is incorrect because the actual procedure statement is "Verify MFW flow is >0.90 x 10^6 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	X

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

Examination Outline Cross-reference:

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

Question 78
ANO Unit 1 has experienced a Large Break LOCA,. Plant conditions are:

- 0 SCM, all 4 RCP's tripped.
- The RCS is in natural circulation mode
- OTSG level control set for reflux boiling per EOP RT5
- EFW pump P-7B is out of service
- OTSG pressure is 900psig.

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.

(Assume OTSG pressure is held constant and that EFW pump P-7A delivery is a constant 780gpm for the calculation).

The fill rate for the current condition is ____1_____, and the OTSG level set point of 378" is selected by _____2_____.

A. ……..4.4 inch/min / ……..by depressing the Train A and Train B REFLUX BOILING pushbuttons on C09.

B. …….4.4 inch/min / …….automatically selected by EFIC when RCP's are tripped.

C. ……4.0 inch/min / ……...by depressing the Train A and Train B REFLUX BOILING pushbuttons on C09.

D. …...4.0 inch/min / ……..automatically selected by EFIC 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	___X___

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

Examination Outline Cross-reference:

Level	RO	SRO
K/A #	061.A2.04	
Importance Rating	3.4	
Tier #	2	
Group #	1	
CFR references	41.5 / 43.5 / 45.13	

Question 79

The _____1_____ system has the greatest amount of radioactivity to process. The proper settings and operation of Radwaste Process Monitor(s) ensure that release/exposure is maintained below the regulatory limits and the quantity of material released is maintained in accordance with ____2_____.

A. ……..Clean Liquid Radioactive Waste / ……..Liquid RadWaste Release Permit and 10CFR21

B. ……..Dirty and Laundry Radwaste / …….. Dirty RadWaste Release Permit and 10CFR21

C. ……..Clean Liquid Radioactive Waste / …….Liquid RadWaste Release Permit and ALARA

D. ……..Dirty and Laundry Radwaste / …….Dirty Radwaste Release Permit and ALARA

Answer

"C" is correct. Clean Liquid Radioactive Waste, Liquid RadWaste Release Permit and ALARA. The STM 1-53, page 1 states that the clean liquid radwaste system has the greatest amount of radioactivity to process (as compared to the Dirty and Laundry Radwaste Systems), making "B" and "D" incorrect. 10CFR parts 20 and 50 cover radiation and exposure, making "A" incorrect.

References

STM 1-53, Clean Liquid Radioactive Waste, rev 6, page 1.
AOP 1203.007 LIQUID WASTE DISCHARGE LINE HIGH RADIATION ALARM, rev 8.
10CFR part 20 and part 50

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

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

Examination Outline Cross-reference:

Level	RO	SRO
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
New for RO 2004 Exam.

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

Question Cognitive Level:	Memory or Fundamental Knowledge	X
	Comprehension or Analysis	_____
	LOD = 2	

Examination Outline Cross-reference:

Level	RO	SRO

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 #	X
	Modified Bank #	
	New	

Question Cognitive Level:	Memory or Fundamental Knowledge	X
	Comprehension or Analysis	
	LOD = 2	

Examination Outline Cross-reference:

Level	RO	SRO
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, declare RI-8002 inoperable, and initiate a Condition Report.

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" MAI.

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 #	X
	Modified Bank #	
	New	

Question Cognitive Level:	Memory or Fundamental Knowledge	X
	Comprehension or Analysis	
	LOD = 2	

Examination Outline Cross-reference:

Level	RO	SRO
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 #	X
	Modified Bank #	
	New	

Question Cognitive Level:	Memory or Fundamental Knowledge	X
	Comprehension or Analysis	
	LOD = 3	

Examination Outline Cross-reference:

Level	RO	SRO
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 PC Pressure Selector, HS-1038, 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.

Notes:

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.
New for 2004 RO exam
Training Objectives: A1LP-RO-NNI: 14

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

Question Cognitive Level:	Memory or Fundamental Knowledge	_____
	Comprehension or Analysis	X
	LOD = 3	

Examination Outline Cross-reference:

Level	RO	SRO
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 EH oil pressure.
-Currently in a two pump line up for circ water with “A” and “B” pumps in service
-Circ water Pump “A” trips on over-current and won’t restart

Vacuum starts dropping and it is noticed that the discharge valve of circ water pump “B” is not fully open so the third circ water pump “C” is started to try to restore vacuum. The vacuum drops to 20” and all four Turbine bypass valves (TBV’s) go shut. An alarm sounds for “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	X

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

Examination Outline Cross-reference:

Level	RO	SRO
K/A #	075.A2.03	
Importance Rating	2.5	
Tier #	2	
Group #	2	
CFR references	41.5 / 45.5	

Question 86
Due to an Instrument Air Dryer malfunction on Unit Two Instrument Air pressure fell to 45 psig. Instrument Air pressure has now recovered to 65 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. Instrument Air to Service Air X-over valve, SV-5400

C. Cross-connect the Unit One Instrument Air Filters

D. Breathing Air to Instrument Air X-connection, HS-5503

Answer
"D" is the correct answer 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 #	
	Modified Bank #	X
	New	

Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	X
	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 discharge 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	___X___

Question Cognitive Level:	Memory or Fundamental Knowledge	__X__
	Comprehension or Analysis	_____
	LOD = 2	

Examination Outline Cross-reference:

Level	RO	SRO
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
New for 2004 RO/SRO exam.

Question Source:	Bank #	
	Modified Bank #	
	New	X

Question Cognitive Level:	Memory or Fundamental Knowledge	X
	Comprehension or Analysis	
	LOD = 2	

Examination Outline Cross-reference:

Level	RO	SRO
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 #	X
	Modified Bank #	
	New	

Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	X
	LOD = 3	

Examination Outline Cross-reference:

Level	RO	SRO
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% x 31 gpm/% divided by 5 minutes = 43.4 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 #	X
	Modified Bank #	
	New	

Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	X
	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 #	X
	Modified Bank #	
	New	

Question Cognitive Level:	Memory or Fundamental Knowledge	X
	Comprehension or Analysis	
	LOD = 3	

Examination Outline Cross-reference:

Level	RO	SRO
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.	>= 1.0%	1.5% delta k/k
B.	>= 5.0%	5.0% delta k/k
C.	>= 1.0%	5.0% delta k/k
D.	>= 5.0%	1.5% delta k/k

Answer
"A" >= 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 #	X
	Modified Bank #	
	New	

Question Cognitive Level:	Memory or Fundamental Knowledge	X
	Comprehension or Analysis	
	LOD = 3	

Examination Outline Cross-reference:

Level	RO	SRO
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	X

Question Cognitive Level:	Memory or Fundamental Knowledge	X
	Comprehension or Analysis	_____
	LOD = 2	

Examination Outline Cross-reference:

Level	RO	SRO
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 Hot Shutdown 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 Hot Shutdown within 1 hour.

Answer
"D" is correct, Place the unit in Hot Shutdown within 1 hour.Tech Spec 6.7 requires that the unit be placed in Hot Shutdown 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 #	X
	Modified Bank #	
	New	

Question Cognitive Level:	Memory or Fundamental Knowledge	X
	Comprehension or Analysis	
	LOD = 4	

Examination Outline Cross-reference:

Level	RO	SRO
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. Nuclear Engineers 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” Nuclear Engineers 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 #	X
	Modified Bank #	
	New	

Question Cognitive Level:	Memory or Fundamental Knowledge	X
	Comprehension or Analysis	
	LOD = 3	

Examination Outline Cross-reference:

Level	RO	SRO
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 = 1047mR.

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 #	_____
	Modified Bank #	_____
	New	___X___

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

Examination Outline Cross-reference:

Level	RO	SRO
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 #	X
	Modified Bank #	
	New	

Question Cognitive Level:	Memory or Fundamental Knowledge	X
	Comprehension or Analysis	
	LOD = 2	

Examination Outline Cross-reference:

Level	RO	SRO
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 #	X
	Modified Bank #	
	New	

Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	X
	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 #	_____
	Modified Bank #	_____
	New	X

Question Cognitive Level:	Memory or Fundamental Knowledge	X
	Comprehension or Analysis	_____
	LOD = 2	

Examination Outline Cross-reference:

Level	RO	SRO
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 #	
	Modified Bank #	
	New	X

Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	X
	LOD = 3	

Examination Outline Cross-reference:

Level	RO	SRO
K/A #	G2.4.8	
Importance Rating	3.0	
Tier #	G	
Group #	G	
CFR references	41.10 / 43.5 / 45.13	