



Indian Point Station  
Simulator/Energy Education Center  
Buchanan, New York

July 29, 1994

Mr. Jim Prell  
Lead Examiner  
NRC Region I  
475 Allendale Road  
King of Prussia, PA 19046

Dear Mr. Prell:

As per our conversation the attached comments of the written exam are acceptable.

Thank you,

Frank Inzirillo  
Operations Training Manager

**NRC EXAMINATION COMMENTS**

<i>No.</i>	<i>Original Comment</i>	<i>New Comment</i>	<i>Still Contains Discrepancy</i>	<i>Suggested Resolution</i>
<i>Discrepancies/Clarifications/Corrections by ConEd missed on original examination review.</i>				
20		<i>Setpoint is 35 steps, not twenty. No correct answer.</i>		<i>Delete Question.</i>
22		<i>Missed statement that we were at 80% power. Therefore, target flux at 100% needs to corrected for 80%, making B correct answer.</i>		<i>Change Key back from A to B.</i>
29		<i>Need to identify Alternative C as a channel that provides pressure compensation to the steam flow signal, not all three channels provide this service.</i>		<i>Probably all selected C. If not, delete the question.</i>
<i>Original ConEd Review Comments Still in Question</i>				
53	<i>Clarification as to being in ES-0.1</i>		<i>Alternative A is correct but key still shows D as the answer.</i>	<i>Change Key from D to A.</i>
70	<i>Clarification of basis for differentiation.</i>		<i>Shows B as the Correct Answer. Lots of disagreement among reviewers as to correct answer. Still don't know basis. Old Answer B was changed to the new Answer B. Not sure what the correct answer is and why.</i>	<i>This question still makes us feel uncomfortable in terms of what is the correct answer and basis for the answer. Delete this question.</i>
3	<i>Identify specific nomenclature for Control Interlocks</i>		<i>They were spelled out, but NO answer is correct.</i>	<i>If everybody identified the fact that it should have been OTDT, give everybody full credit. If not, delete the question.</i>

**POST-EXAMINATION FACILITY COMMENTS AND SIMULATOR FIDELITY REPORT**

Indian Point, Unit 2, provided post-examination comments to six questions from the written examination. For question numbers 3, 20 and 70 the facility felt there were no correct answers. The NRC concurred and these three questions were deleted from the written examination. Facility comments on the remaining three questions were resolved as follows:

	Comment	Resolution
Q22	Correct answer is b. instead of a. to account for 80% power level.	NRC concurred that b. is the correct answer with power at 80%
Q29	Answer c. needed to be modified to more accurately identify it as the correct answer. Recommended that the question be deleted.	NRC did not concur. Alternative c. is the only possible correct answer. It should be noted all candidates correctly answered question.
Q53	Correct answer should be a. instead of d.	NRC concurred and changed answer key to reflect that the correct answer is a.

**ATTACHMENT 2**

**SIMULATOR FIDELITY REPORT**

## **SIMULATOR FIDELITY REPORT**

**Facility Licensee:** Indian Point Nuclear Station, Unit 2

**Facility Docket No:** 50-247

**Operating Tests Administered on:** July 26, 1994

This form is to be used only to report observations. These observations do not constitute audit or inspection findings and are not, without further verification and review, indicative of noncompliance with 10 CFR 55.45(b). These observations do not affect NRC certification or approval of the simulation facility other than to provide information that may be used in future evaluations. No licensee action is required in response to these observations.

During the conduct of the simulator and JPM portions of the operating tests, there were no problems noted. It was noted that the facility is in the process of installing and testing a new simulator. The design of the new simulator will allow trainers and examiners more flexibility in designing scenarios and JPMs to better evaluate students and crews.

**ATTACHMENT 3**

**SRO EXAMINATION AND ANSWER KEY**

U. S. NUCLEAR REGULATORY COMMISSION  
SITE SPECIFIC EXAMINATION  
SENIOR OPERATOR LICENSE  
REGION 1

CANDIDATE'S NAME: \_\_\_\_\_  
FACILITY: Indian Point 2  
REACTOR TYPE: PWR-WEC4  
DATE ADMINISTERED: 94/07/25

INSTRUCTIONS TO CANDIDATE:

Use the answer sheets provided to document your answers. Staple this cover sheet on top of the answer sheets. Points for each question are indicated in parentheses after the question. The passing grade requires a final grade of at least 80%. Examination papers will be picked up four (4) hours after the examination starts.

<u>TEST VALUE</u>	<u>CANDIDATE'S SCORE</u>	<u>%</u>	
<u>100.00</u>		<u>    </u>	TOTALS
	<u>FINAL GRADE</u>	<u>    </u>	

All work done on this examination is my own. I have neither given nor received aid.

\_\_\_\_\_  
Candidate's Signature

ANSWER SHEET

Multiple Choice (Circle or X your choice)

If you change your answer, write your selection in the blank.

MULTIPLE CHOICE

- |                |              |              |              |              |                              |     |   |   |   |   |     |
|----------------|--------------|--------------|--------------|--------------|------------------------------|-----|---|---|---|---|-----|
| 001            | a            | b            | c            | d            | ___                          | 023 | a | b | c | d | ___ |
| 002            | a            | b            | c            | d            | ___                          | 024 | a | b | c | d | ___ |
| <del>003</del> | <del>a</del> | <del>b</del> | <del>c</del> | <del>d</del> | <del>___</del> <i>delete</i> | 025 | a | b | c | d | ___ |
| 004            | a            | b            | c            | d            | ___                          | 026 | a | b | c | d | ___ |
| 005            | a            | b            | c            | d            | ___                          | 027 | a | b | c | d | ___ |
| 006            | a            | b            | c            | d            | ___                          | 028 | a | b | c | d | ___ |
| 007            | a            | b            | c            | d            | ___                          | 029 | a | b | c | d | ___ |
| 008            | a            | b            | c            | d            | ___                          | 030 | a | b | c | d | ___ |
| 009            | a            | b            | c            | d            | ___                          | 031 | a | b | c | d | ___ |
| 010            | a            | b            | c            | d            | ___                          | 032 | a | b | c | d | ___ |
| 011            | a            | b            | c            | d            | ___                          | 033 | a | b | c | d | ___ |
| 012            | a            | b            | c            | d            | ___                          | 034 | a | b | c | d | ___ |
| 013            | a            | b            | c            | d            | ___                          | 035 | a | b | c | d | ___ |
| 014            | a            | b            | c            | d            | ___                          | 036 | a | b | c | d | ___ |
| 015            | a            | b            | c            | d            | ___                          | 037 | a | b | c | d | ___ |
| 016            | a            | b            | c            | d            | ___                          | 038 | a | b | c | d | ___ |
| 017            | a            | b            | c            | d            | ___                          | 039 | a | b | c | d | ___ |
| 018            | a            | b            | c            | d            | ___                          | 040 | a | b | c | d | ___ |
| 019            | a            | b            | c            | d            | ___                          | 041 | a | b | c | d | ___ |
| <del>020</del> | <del>a</del> | <del>b</del> | <del>c</del> | <del>d</del> | <del>___</del> <i>delete</i> | 042 | a | b | c | d | ___ |
| 021            | a            | b            | c            | d            | ___                          | 043 | a | b | c | d | ___ |
| 022            | a            | b            | c            | d            | ___                          | 044 | a | b | c | d | ___ |
|                |              |              |              |              |                              | 045 | a | b | c | d | ___ |

## ANSWER SHEET

Multiple Choice (Circle or X your choice)

If you change your answer, write your selection in the blank.

- |     |   |   |   |   |     |                |              |              |              |              |                              |
|-----|---|---|---|---|-----|----------------|--------------|--------------|--------------|--------------|------------------------------|
| 046 | a | b | c | d | ___ | 069            | a            | b            | c            | d            | ___                          |
| 047 | a | b | c | d | ___ | <del>070</del> | <del>a</del> | <del>b</del> | <del>c</del> | <del>d</del> | <del>___</del> <i>delete</i> |
| 048 | a | b | c | d | ___ | 071            | a            | b            | c            | d            | ___                          |
| 049 | a | b | c | d | ___ | 072            | a            | b            | c            | d            | ___                          |
| 050 | a | b | c | d | ___ | 073            | a            | b            | c            | d            | ___                          |
| 051 | a | b | c | d | ___ | 074            | a            | b            | c            | d            | ___                          |
| 052 | a | b | c | d | ___ | 075            | a            | b            | c            | d            | ___                          |
| 053 | a | b | c | d | ___ | 076            | a            | b            | c            | d            | ___                          |
| 054 | a | b | c | d | ___ | 077            | a            | b            | c            | d            | ___                          |
| 055 | a | b | c | d | ___ | 078            | a            | b            | c            | d            | ___                          |
| 056 | a | b | c | d | ___ | 079            | a            | b            | c            | d            | ___                          |
| 057 | a | b | c | d | ___ | 080            | a            | b            | c            | d            | ___                          |
| 058 | a | b | c | d | ___ | 081            | a            | b            | c            | d            | ___                          |
| 059 | a | b | c | d | ___ | 082            | a            | b            | c            | d            | ___                          |
| 060 | a | b | c | d | ___ | 083            | a            | b            | c            | d            | ___                          |
| 061 | a | b | c | d | ___ | 084            | a            | b            | c            | d            | ___                          |
| 062 | a | b | c | d | ___ | 085            | a            | b            | c            | d            | ___                          |
| 063 | a | b | c | d | ___ | 086            | a            | b            | c            | d            | ___                          |
| 064 | a | b | c | d | ___ | 087            | a            | b            | c            | d            | ___                          |
| 065 | a | b | c | d | ___ | 088            | a            | b            | c            | d            | ___                          |
| 066 | a | b | c | d | ___ | 089            | a            | b            | c            | d            | ___                          |
| 067 | a | b | c | d | ___ | 090            | a            | b            | c            | d            | ___                          |
| 068 | a | b | c | d | ___ | 091            | a            | b            | c            | d            | ___                          |

A N S W E R   S H E E T

Multiple Choice    (Circle or X your choice)

If you change your answer, write your selection in the blank.

- 092    a    b    c    d    \_\_\_\_\_
- 093    a    b    c    d    \_\_\_\_\_
- 094    a    b    c    d    \_\_\_\_\_
- 095    a    b    c    d    \_\_\_\_\_
- 096    a    b    c    d    \_\_\_\_\_
- 097    a    b    c    d    \_\_\_\_\_
- 098    a    b    c    d    \_\_\_\_\_
- 099    a    b    c    d    \_\_\_\_\_
- 100    a    b    c    d    \_\_\_\_\_

(\*\*\*\*\* END OF EXAMINATION \*\*\*\*\*)

## NRC RULES AND GUIDELINES FOR LICENSE EXAMINATIONS

During the administration of this examination the following rules apply:

1. Cheating on the examination means an automatic denial of your application and could result in more severe penalties.
2. After the examination has been completed, you must sign the statement on the cover sheet indicating that the work is your own and you have not received or given assistance in completing the examination. This must be done after you complete the examination.
3. Restroom trips are to be limited and only one applicant at a time may leave. You must avoid all contacts with anyone outside the examination room to avoid even the appearance or possibility of cheating.
4. Use black ink or dark pencil ONLY to facilitate legible reproductions.
5. Print your name in the blank provided in the upper right-hand corner of the examination cover sheet and each answer sheet.
6. Mark your answers on the answer sheet provided. USE ONLY THE PAPER PROVIDED AND DO NOT WRITE ON THE BACK SIDE OF THE PAGE.
7. Before you turn in your examination, consecutively number each answer sheet, including any additional pages inserted when writing your answers on the examination question page.
8. Use abbreviations only if they are commonly used in facility literature. Avoid using symbols such as < or > signs to avoid a simple transposition error resulting in an incorrect answer. Write it out.
9. The point value for each question is indicated in parentheses after the question.
10. Show all calculations, methods, or assumptions used to obtain an answer to any short answer questions.
11. Partial credit may be given except on multiple choice questions. Therefore, ANSWER ALL PARTS OF THE QUESTION AND DO NOT LEAVE ANY ANSWER BLANK.
12. Proportional grading will be applied. Any additional wrong information that is provided may count against you. For example, if a question is worth one point and asks for four responses, each of which is worth 0.25 points, and you give five responses, each of your responses will be worth 0.20 points. If one of your five responses is incorrect, 0.20 will be deducted and your total credit for that question will be 0.80 instead of 1.00 even though you got the four correct answers.
13. If the intent of a question is unclear, ask questions of the examiner only.

14. When turning in your examination, assemble the completed examination with examination questions, examination aids and answer sheets. In addition, turn in all scrap paper.
15. Ensure all information you wish to have evaluated as part of your answer is on your answer sheet. Scrap paper will be disposed of immediately following the examination.
16. To pass the examination, you must achieve a grade of 80% or greater.
17. There is a time limit of four (4) hours for completion of the examination.
18. When you are done and have turned in your examination, leave the examination area (EXAMINER WILL DEFINE THE AREA). If you are found in this area while the examination is still in progress, your license may be denied or revoked.

QUESTION: 001 (1.00)

WHICH ONE (1) of the following is the purpose of Rod Insertion Limits?

- a. To provide proper control bank overlap.
- b. To eliminate the affects of rod shadowing.
- c. To provide axial flux shaping at full power.
- d. To ensure adequate shutdown margin for reactor trip.

QUESTION: 002 (1.00)

Given the following:

- Reactor power at 90%.
- Power Range N-41 failed HIGH fifteen (15) minutes ago.
- Control rods are in MANUAL control.
- An operator bypassed the rod stop, but did not defeat the N-41 input to the power mismatch circuit.
- Tavg is greater than Tref by one (1) degree F.

WHICH ONE (1) of the following describes the response of the rod control system if the Rod Selector Switch is placed in AUTOMATIC?

- a. Rods will not move.
- b. Rods will step in a few steps and stop.
- c. Rods will step in at 8 steps per minute.
- d. Rods will step in at 72 steps per minute.

QUESTION: 003 (1.00)

WHICH ONE (1) of the following rod control interlocks varies due to Tavg, Delta I, and RCS pressure inputs?

- a. Intermediate Range Flux Hi
- b. Overpower
- c. Overpower Delta T
- d. Low Power

*delete*

QUESTION: 004 (1.00)

Given the following:

- The plant is operating at 60% power.
- Loop 3 Delta-T indicates LOW.
- Loop 3 Tavg indicates HIGH.

WHICH ONE (1) of the following is the cause for these indications?

- a. Tcold failed HIGH.
- b. Tcold failed LOW.
- c. That failed HIGH.
- d. That failed LOW.

QUESTION: 005 (1.00)

WHICH ONE (1) of the following indicated leakage rates would PREVENT a reactor startup in accordance with Technical Specification 3.1.F, "Reactor Coolant System Leakage and Leakage Into The Containment Free Volume"?

- a. 0.26 gpm from one (1) steam generator.
- b. 1.0 gpm from a cold leg accumulator pressure isolation valve.
- c. 3.0 gpm into the containment sump from the RCS (location unknown).
- d. 4.0 gpm into the reactor coolant drain tank from RCP #22 seal package.

QUESTION: 006 (1.00)

Given the following:

- The Unit is operating at 19% power.
- Reactor Coolant Pump #22 automatically trips due to a protection relay.

WHICH ONE (1) of the following describes the unit response? ASSUME NO operator action is taken.

- a. A reactor trip will NOT occur and #22 steam generator water level will shrink.
- b. A reactor trip will NOT occur and #22 steam generator water level will swell.
- c. A reactor trip WILL occur and #22 steam generator water level will shrink.
- d. A reactor trip WILL occur and #22 steam generator water level will swell.

QUESTION: 007 (1.00)

Given the following:

- All RCP prestart criteria are within normal operational ranges.
- RCP #21 was started at 0745 hours and 0820 hours for testing.
- RCP #21 was at a full stop for both starts.
- It is now 0830 hours and the pump was just stopped.

WHICH ONE (1) of the following is the EARLIEST time that RCP #21 may be restarted according to SOP 1.3, "Reactor Coolant Pump Startup and Shutdown"?

- a. 0850 hours
- b. 0900 hours
- c. 0915 hours
- d. 0930 hours

QUESTION: 008 (1.00)

WHICH ONE (1) of the following is an indication of a failure of the number 2 seal on an RCP?

- a. RCDT temperature increasing.
- b. #1 seal delta P decreasing.
- c. Lower bearing water temperature increasing.
- d. Standpipe level low alarm.

QUESTION: 009 (1.00)

WHICH ONE (1) of the following describes how Letdown System upstream pressure and flow rate are affected by manually closing the CVCS low pressure letdown control valve (PCV-135) 10 percent? ASSUME reactor is at 100% power.

- a. Pressure decreases and flowrate increases.
- b. Pressure decreases and flowrate decreases.
- c. Pressure increases and flowrate increases.
- d. Pressure increases and flowrate decreases.

QUESTION: 010 (1.00)

Given the following:

- Reactor is at 100% power.
- TCV-130 (Non-Regenerative Heat Exchanger Temperature Control Valve) is 35% open maintaining VCT inlet temperature at 125 degrees F.

WHICH ONE (1) of the following describes the effect on letdown temperature and CVCS demineralizers if TCV-130 inadvertently opens to 100%?

- a. Letdown temperature will become excessively high. Mix bed resin will begin to release boron adding negative reactivity to the core.
- b. Letdown temperature will become excessively low. Mix beds will begin to absorb boron adding positive reactivity to the core.
- c. Letdown temperature will increase. Mix beds will begin to absorb boron adding positive reactivity to the core.
- d. Letdown temperature will decrease. Mix bed resin will begin to release boron adding negative reactivity to the core.

QUESTION: 011 (1.00)

WHICH ONE (1) of the following is the MINIMUM time delay before an SI signal can be RESET after an SI has occurred?

- a. 30 seconds
- b. 60 seconds
- c. 90 seconds
- d. 120 seconds

QUESTION: 012 (1.00)

Given the following:

-An SI has occurred due to a cold leg break.

WHICH ONE (1) of the following indicates an Safety Injection System (SI) MISALIGNMENT?

- a. VCT outlet valve CLOSED.
- b. RCP seal return valve CLOSED.
- c. Letdown regenerative heat exchanger valves CLOSED.
- d. RHR heat exchanger CCW cooling inlet valves CLOSED.

QUESTION: 013 (1.00)

WHICH ONE (1) of the following is the MINIMUM flow rate which will cause an AUTOMATIC closure of the RCP thermal barrier CCW isolation valve FCV-625?

- a. 100 gpm
- b. 130 gpm
- c. 150 gpm
- d. 200 gpm

QUESTION: 014 (1.00)

WHICH ONE (1) of the following describes the operation of the Component Cooling Water (CCW) pumps on a SI?

- a. The running pumps stop and all three (3) are automatically restarted by the sequencer.
- b. The running pumps stop and will restart on a low header pressure of 80 psig.
- c. The running pumps continue operation and the standby pump will only start on a low pressure condition.
- d. The running pumps continue operation and the standby pump is automatically started by the sequencer.

QUESTION: 015 (1.00)

Given the following:

- Steady state operation at 100% power.
- The PZR pressure Master Controller setpoint is inadvertently changed to 2360 psig (step change).
- Pressurizer pressure control is in automatic.

WHICH ONE (1) of the following will be the IMMEDIATE response of the system?

- a. Power operated relief valve PCV-455C OPENS and modulating heaters go to minimum.
- b. Power operated relief valve PCV-456 OPENS and spray valves OPEN if previously closed.
- c. Spray valves OPEN if previously closed and modulating heaters go to minimum.
- d. Spray valves CLOSE if previously open and modulating heaters go to maximum.

QUESTION: 016 (1.00)

WHICH ONE (1) of the following will cause a reactor trip following the Pressurizer Level controlling channel failing LOW? ASSUME Reactor power is at 100%, all systems are in automatic and NO operator action is taken.

- a. High pressurizer level
- b. High pressurizer pressure
- c. Low pressurizer pressure
- d. OT Delta T

QUESTION: 017 (1.00)

WHICH ONE (1) of the following describes the effect on OT delta T and OP delta T setpoints if  $T_{avg}$  is 552 degrees F. with reactor power at 100%? ASSUME Delta flux at -2 and PZR pressure at 2235 psig.

	<u>OT delta T</u>	<u>OP delta T</u>
a.	Increase	Remain the same
b.	Decrease	Decrease
c.	Increase	Decrease
d.	Remain the same	Remain the same

QUESTION: 018 (1.00)

Given the following:

- A plant startup is in progress.
- "Power Below P-7" white light is illuminated on the flight panel.

WHICH ONE (1) of the following AUTOMATIC reactor trips could trip the reactor?

- a. Pressurizer low pressure
- b. RCP low flow
- c. Turbine trip
- d. Pressurizer high pressure

QUESTION: 019 (1.00)

WHICH ONE (1) of the following describes the result of resetting a Safety Injection Signal? ASSUME the original SI signal remains present and manual SI is not initiated.

- a. A blackout sequencer actuation will NOT occur, however, an SI sequencer actuation is possible.
- b. An SI sequencer actuation will NOT occur, however, a blackout sequencer actuation is possible.
- c. NEITHER an SI sequencer actuation nor a blackout sequencer actuation are possible.
- d. BOTH an SI sequencer actuation and a blackout sequencer actuation are possible.

QUESTION: 020 (1.00)

~~Given the following:~~

- ~~- A plant startup is in progress~~
- ~~- Control bank C is at 100 steps when you notice the Rod Drop Annunciator is standing [alarm lit and solid].~~

~~WHICH ONE (1) of the following is the cause of this annunciator alarming?~~

- ~~a. Control bank A rod bottom bypass bistable did not reset when control bank A was greater than 20 steps withdrawn. *delete*~~
- ~~b. Control bank B rod bottom bypass bistable did not reset when control bank B was greater than 35 steps withdrawn.~~
- ~~c. Shutdown bank A rod bottom bypass bistable did not reset when shutdown bank A was greater than 20 steps withdrawn.~~
- ~~d. Shutdown bank D rod bottom bypass bistable did not reset when shutdown bank D was greater than 35 steps withdrawn.~~

QUESTION: 021 (1.00)

WHICH ONE (1) of the following indicates the Technical Specification MINIMUM required number of channels of source and intermediate range nuclear instruments to be operable for plant START UP?

	<u>Source Range</u>	<u>Intermediate Range</u>
a.	1	1
b.	1	2
c.	2	1
d.	2	2

QUESTION: 022 (1.00)

Given the following:

- Unit 1 has been operating at 80% for the last 48 hours.
- The AFD monitor alarm was disabled at 0600 hours.
- No AFD penalty time has been accumulated.
- Target AFD for 100% power is + 3.75%.
- Indicated AFD has been continually monitored and logged in or out as follows:

TIME	N41	N42	N43	N44
0600	+8.0	+6.5	+7.0	+6.5
0630	+9.0	+7.5	+7.5	+7.5
0634	+10.0	+8.5	+8.5	+8.0
0655	+10.5	+9.0	+9.0	+10.0
0700	+9.0	+7.5	+7.0	+7.5

WHICH ONE (1) of the following is the cumulative penalty deviation time at 0700 hours?

- a. 5 minutes.
- b. 26 minutes.
- c. 30 minutes.
- d. 60 minutes.

QUESTION: 023 (1.00)

Given the following:

- A normal reactor shutdown is being performed.
- At 90% power, one Intermediate Range Nuclear Instrument Channel fails full-scale HIGH.
- ASSUME no corrective action is taken.

WHICH ONE (1) of the following describes the effects of this failure?

- a. The reactor trips immediately; the Source Range nuclear instruments do not automatically re-energize.
- b. The reactor trips immediately; when P-10 clears the Source Range nuclear instruments automatically re-energize.
- c. The reactor trips when P-10 clears; the Source Range nuclear instruments do not automatically re-energize.
- d. The reactor trips when P-6 clears; the Source Range nuclear instruments automatically re-energize.

QUESTION: 024 (1.00)

WHICH ONE (1) of the following is the response of the Containment Cooling and Filtration units to a 2.0 psig containment pressure signal?

- a. Valves reposition so flow is isolated to BOTH charcoal filter beds and HEPA filters.
- b. Valves reposition so flow is directed through BOTH charcoal filter beds and HEPA filters.
- c. Valves reposition to isolate charcoal filter beds and direct flow through HEPA filters.
- d. Valves reposition to isolate HEPA filters and direct flow through charcoal filter beds.

QUESTION: 025 (1.00)

WHICH ONE (1) of the following is the reason Sodium Hydroxide (NaOH) is added to the Containment Spray System?

- a. It lowers sump pH to limit corrosion of piping inside the containment.
- b. It facilitates converting soluble iodine into insoluble iodine.
- c. It minimizes the amount of hydrogen generated during a LOCA.
- d. It absorbs elemental iodine from the containment atmosphere.

QUESTION: 026 (1.00)

Loss of WHICH ONE (1) of the following Motor Control Centers (MCC) will de-energize BOTH Containment Spray Pump's discharge valves?

- a. 25 and 26A
- b. 25A and 26B
- c. 25 and 25A
- d. 26A and 26B

QUESTION: 027 (1.00)

WHICH ONE (1) of the following describes the response of the Containment Spray System when the RESET pushbuttons are depressed?

- a. Both containment spray pumps stop and spray additive tank discharge valves close.
- b. Both containment spray pumps continue running and spray additive tank discharge valves close.
- c. Both containment spray pumps continue running and spray additive tank discharge valves remain open.
- d. Both containment spray pumps stop and spray additive tank discharge valves remain open.

QUESTION: 028 (1.00)

Given the following:

- Refueling is in progress.
- A fuel assembly is being withdrawn from the core.
- An electrical short causes a disengage signal to be sent to the gripper.

WHICH ONE (1) of the following describes the system response?

- a. The gripper will not disengage since the fuel assembly weight is bearing on the latch mechanism.
- b. The gripper will disengage if the hoist is in the full up position.
- c. The gripper will not disengage, but all hoist motion will be inhibited.
- d. The gripper will immediately disengage, releasing the fuel assembly.

QUESTION: 029 (1.00)

WHICH ONE (1) of the following will cause the #22 SG Feed Flow Demand Signal to DECREASE? ASSUME no operator action taken.

- a. Feedwater flow transmitter fails LOW.
- b. Steam flow transmitter fails HIGH.
- c. Steam Generator pressure transmitter fails LOW.
- d. Steam Generator narrow range level transmitter fails LOW.

QUESTION: 030 (1.00)

WHICH ONE (1) of the following events will cause the actuation of the Steam Dump System? ASSUME steam dumps are in TEMP CONT. Mode.

- a. Impulse pressure transmitters PT-412A and PT-412B fail HIGH.
- b. Impulse pressure transmitter PT-412A fails HIGH coincident with a reactor/turbine trip.
- c. Impulse pressure transmitter PT-412B fails LOW coincident with a Tavg-Tref error signal of 4 deg. F.
- d. Impulse pressure transmitter PT-412A fails LOW coincident with a cold leg RTD failed HIGH.

QUESTION: 031 (1.00)

WHICH ONE (1) of the following will result in a subsequent Main Feedwater Isolation?

- a. Two pressure transmitters for the #21 SG failing LOW.
- b. A narrow range hot leg RTD failed LOW coincident with a Reactor trip.
- c. Two level transmitters for the #23 S/G failing LOW.
- d. An inadvertent start of the AFW system.

## QUESTION: 032 (1.00)

Given the following:

- The plant is operating at 100% power.
- All three AFW pumps have been determined to be inoperable.
- The Technical Specification LCO Action Statement states:

"With three auxiliary feedwater pumps inoperable, immediately initiate corrective action to restore at least one auxiliary feedwater pump to operable status as soon as possible."

WHICH ONE (1) of the following statements describes why the plant is not immediately shutdown?

- a. The plant cannot be placed in cold shutdown without AFW available.
- b. The plant is in a stable condition and shutting down would put the plant in a transient condition which may require the AFW system.
- c. The AFW system is a backup to the Main Feedwater System which is fully operational.
- d. The plant cannot be maintained in a stable hot standby condition without AFW operable.

## QUESTION: 033 (1.00)

WHICH ONE (1) of the following describes the purpose of the 480 VAC buses degraded voltage protective relays?

- a. Starts the Emergency Diesel Generators and puts them in standby in case 480 VAC power is lost.
- b. Trips the normal feeder breakers to protect safeguards motors from starting on a low voltage, high current condition.
- c. Starts the Emergency Diesel Generators and initiates the load sequencer.
- d. Trips the Emergency Diesel Generator's 86K Lockout relay to prevent the DG from being parallel to the bus.

QUESTION: 034 (1.00)

Given the following:

- Reactor is at 96% power.
- A surveillance test is being conducted on DG #21.
- DG #21 is paralleled to Bus 5A and is carrying 1000 KW load.
- DG #21 has just tripped on a faulty overcurrent relay.
- 30 seconds later an SI occurs concurrent with a loss of offsite power.
- ASSUME NO operator action is taken.

WHICH ONE (1) of the following is the configuration of the diesel generators and the 480V AC buses?

- a. DGs #21, #22 & #23 running, all buses energized.
- b. DGs #21, #22 & #23 running, Bus 5A is NOT energized.
- c. DGs #22 & #23 running, all buses energized.
- d. DGs #22 & #23 running, Bus 5A is NOT energized.

QUESTION: 035 (1.00)

WHICH ONE (1) of the following describes EDG governor and voltage control with the EDG paralleled to the BUS and the UNIT-PARALLEL switch in PARALLEL?

- a. Increasing the governor will INCREASE EDG load and increasing the voltage rheostat will INCREASE lagging VARs.
- b. Increasing the governor will INCREASE bus frequency and increasing the voltage rheostat will DECREASE bus voltage.
- c. Increasing the governor will INCREASE bus frequency and increasing the voltage rheostat will INCREASE leading VARs.
- d. Increasing the governor will INCREASE EDG load and increasing the voltage rheostat will DECREASE bus voltage.

QUESTION: 036 (1.00)

WHICH ONE (1) of the following conditions will prevent an automatic closure of the EDG output breaker?

- a. Synchronizing switch is OFF.
- b. Voltage regulator set at 494 volts.
- c. Fault on associated bus.
- d. Loss of the normal DG 125V DC control power.

QUESTION: 037 (1.00)

WHICH ONE (1) of the following actions will confirm that a radiation monitoring instrument is functional from the detector to the meter?

- a. Place the selector switch in "HV" and insure detector voltage is correct.
- b. Place the selector switch in "CAL" and check the high alarm setpoint.
- c. Place the selector switch in "OPERATE", depress the "CS" button, and watch for an increasing meter reading.
- d. Place the selector switch in "OFF" and check for loss of meter reading and circuit failure alarm.

QUESTION: 038 (1.00)

Given the following:

- Reactor power is at 100%.
- Circulating Water System is in its normal full power lineup.
- Circulating Water inlet temperature is 60 degrees F.

WHICH ONE (1) of the following occurs if ONE (1) Circulating Water pump trips?

- a. The operating pumps RUN OUT.
- b. Main Turbine speed will INCREASE.
- c. Condenser pressure will INCREASE.
- d. Circulating Water discharge temperature limits are VIOLATED.

QUESTION: 039 (1.00)

Given the following:

- Essential Service water header has been swapped from the #24, #25, & #26 Service Water pumps to the #21, #22, & #23 Service Water pumps.
- The Service Water Pump Mode selector has been left in the 4-5-6 position.

WHICH ONE (1) of the following components will be supplied with Service Water if a SI occurs? ASSUME NO operator action is taken.

- a. Emergency Diesel Generator
- b. CCW Heat Exchanger
- c. Containment Recirculation Fan Cooling Unit
- d. Instrument Air Compressor

QUESTION: 040 (1.00)

Given the following:

-Fire header pressure is at 82 psig with all system controls in AUTOMATIC.

WHICH ONE (1) of the following describes the Fire Protection System pump(s) expected to be running at this pressure?

- a. ONLY the two (2) pressure maintenance pumps.
- b. Two (2) pressure maintenance pumps and one (1) motor-driven booster pump.
- c. BOTH pressure maintenance pumps and BOTH motor-driven booster pumps.
- d. BOTH motor-driven booster pumps and the diesel-driven booster pump.

QUESTION: 041 (1.00)

Given the following:

- Reactor has just gone critical.
- Rod Bottom/Rod Drop alarm is lit.
- Power Range Channel Deviation alarm is lit.
- Two (2) rod bottom lights are lit.

WHICH ONE (1) of the following actions should be IMMEDIATELY performed per AOI-16.1.1, "Dropped or Misaligned Rod/Rod Position Indicator Failure"?

- a. Stop the power increase and insert rods back to Estimated Critical Position (ECP).
- b. Check Axial Flux Difference and Quadrant Power Tilt Ratio.
- c. Manually trip the reactor and enter E-0, "Reactor Trip or Safety Injection".
- d. Stabilize Tavg with rod motion and/or borate as necessary.

QUESTION: 042 (1.00)

Given the following:

- A power reduction from 80% to 60% has just been completed.
- Two (2) Bank D control rods have failed to insert with the rest of the bank.

WHICH ONE (1) of the following rod position differences is the MINIMUM that would require the rods to be considered misaligned per Technical Specifications?

- a. 8 steps
- b. 10 steps
- c. 13 steps
- d. 17 steps

QUESTION: 043 (1.00)

Given the following:

- Reactor tripped from 100% power.
- E-0, "Reactor Trip or Safety Injection", has been entered.
- The Main Turbine did NOT trip as expected.

WHICH ONE (1) of the following actions should be IMMEDIATELY performed to trip/stop the turbine per E-0, "Reactor Trip or Safety Injection"?

- a. Open generator output breakers.
- b. Runback the turbine to no load conditions.
- c. Manually close turbine stop and governor valves.
- d. Manually trip the turbine locally at the turbine pedestal.

## QUESTION: 044 (1.00)

WHICH ONE (1) of the following is the MAXIMUM cooldown rate allowed per EOP ES-0.2, "Natural Circulation Cooldown"?

- a. 20 degrees F/hr measured by the cold leg wide range temperature instruments.
- b. 20 degrees F/hr measured by the hot leg wide range temperature instruments.
- c. 25 degrees F/hr measured by the cold leg wide range temperature instruments.
- d. 25 degrees F/hr measured by the hot leg wide range temperature instruments.

## QUESTION: 045 (1.00)

WHICH ONE (1) of the following conditions satisfies SI Termination Criteria requirements following an inadvertent SI actuation? ASSUME adverse containment conditions do NOT exist.

- a. Pressurizer level is 14%.  
RCS subcooling indicates 16 degrees F.  
RCS pressure at 1725 psig and stable.  
SG N.R. levels range from 3% to 12%.
- b. Pressurizer level is 10%.  
RCS subcooling indicates 10 degrees F.  
RCS pressure at 1680 psig and stable.  
Feed flow to each SG at 100 gpm.
- c. Pressurizer level is 19%.  
RCS subcooling indicates 25 degrees F.  
RCS pressure at 1725 psig and increasing.  
SG N.R. levels for the three intact SGs range from 2% to 7%.
- d. Pressurizer level is 12%.  
RCS subcooling indicates 18 degrees F.  
RCS pressure at 1680 psig and increasing.  
Feed flow to the three intact SGs is at 125 gpm each.

QUESTION: 046 (1.00)

WHICH ONE (1) of the following RCS parameters is the MAXIMUM pressure and temperature at which the RHR system may be placed into service per ES-1.2, "Post-LOCA Cooldown and Depressurization"?

	<u>RCS PRESSURE</u>	<u>RCS TEMPERATURE</u>
a.	430 psig	380 degrees F
b.	430 psig	349 degrees F
c.	455 psig	380 degrees F
d.	455 psig	349 degrees F

QUESTION: 047 (1.00)

Given the following:

- In response to a large break LOCA a transition from E-0, "Reactor Trip or Safety Injection" to E-1, "Loss of Reactor or Secondary Coolant" has been performed.
- Due to a RED path on the CORE COOLING status tree, a transition to FR-C.1, "Response to Inadequate Core Cooling" has been performed.
- During performance of FR-C.1, you observe that the CORE COOLING status tree has changed from a RED to a YELLOW condition, while you identify a RED path on the CONTAINMENT status tree.

WHICH ONE (1) of the following is the proper procedural transition, and why?

- a. Complete FR-C.1; since it was entered due to a RED path, it must be completed unless a higher priority path occurs.
- b. Immediately transition to FR-Z.1, "Response to High Containment Pressure", since a RED path is a higher priority than a yellow path.
- c. Complete FR-C.1; since once ANY FR is entered, it must be completed before any other transition can be made.
- d. Perform the actions of FR-C.1 and FR-Z.1 simultaneously, since FR procedures of the same priority can be executed together.

QUESTION: 048 (1.00)

WHICH ONE (1) of the following describes the reason that hot leg injection is established 24 hours following a LOCA?

- a. To quench steam in the hot legs and to ensure balanced cooling of the core.
- b. To quench steam in the hot legs and to prevent boron precipitation.
- c. To quench steam in the core and to ensure balanced cooling of the core.
- d. To quench steam in the core and to prevent boron precipitation.

QUESTION: 049 (1.00)

WHICH ONE (1) of the following is the preferred method used to collapse a void in the reactor vessel"?

- a. Re-pressurize the RCS.
- b. Steam the generators.
- c. Establish charging.
- d. Start CRDC fans.

QUESTION: 050 (1.00)

WHICH ONE (1) of the following plant parameter sets indicate adequate natural circulation flow?

	<u>RCS Pressure</u>	<u>SG Pressure</u>	<u>RCS Hot Leg Temperature</u>	<u>RCS Cold Leg Temperature</u>
a.	1700 psig/increasing	720 psig	535 F/stable	505 F/stable
b.	2225 psig/stable	850 psig	520 F/increasing	515 F/stable
c.	1550 psig/increasing	900 psig	600 F/stable	590 F/decreasing
d.	1800 psig/stable	450 psig	500 F/decreasing	500 F/decreasing

QUESTION: 051 (1.00)

Given the following:

- Reactor power is at 100%.
- Rod control is in Manual.
- RCS temperature, pressure and pressurizer level are in program band.
- No equipment out-of-service.
- VCT Level Instrument LT-112 fails LOW.
- Assume NO operator action is taken.

WHICH ONE (1) of the following describes the plant response to VCT Level Instrument LT-112 failing LOW?

- a. Average RCS Temperature will increase, causing the reactor to trip on OT Delta T.
- b. Average RCS Temperature will decrease, causing the reactor to trip on PZR Low Pressure.
- c. Average RCS Temperature will increase, causing the reactor to trip on OP Delta T.
- d. Average RCS Temperature will decrease, causing the reactor to trip on Power Range High Flux.

QUESTION: 052 (1.00)

WHICH ONE (1) of the following is the PREFERRED emergency boration flow path to the charging pumps for an unexplained reactivity increase per AOI-3.4, "Uncontrolled Reactivity Addition"?

- a. BAST to MOV-333
- b. BAST to FCV-110B
- c. RWST to MOV-333
- d. RWST to LCV-112B

QUESTION: 053 (1.00)

WHICH ONE (1) of the following conditions would require emergency boration per AOI-3.4, "Uncontrolled Reactivity Addition"?

- a. Control rods H8 and K3 fail to insert following a reactor trip with no Safety Injection System actuation.
- b. Control rods H10 and K6 insert uncontrollably 100 steps while at 100% power.
- c. Following a turbine runback, Bank D rods are inserted to maintain Delta I resulting in the "Approaching Rod Insertion Limit" alarm.
- d. RCS boron concentration decreases to 2010 ppm while the reactor is in REFUELING OPERATION CONDITION.

QUESTION: 054 (1.00)

Given the following:

- The reactor has been shutdown for 3 days.
- The RCS temperature is 120 degrees F.
- The RCS is in a Reduced Inventory Condition and level is at midloop.
- A total loss of RHR occurs.
- No core cooling is re-established.

WHICH ONE (1) of the following is the MINIMUM time required for the RCS to reach saturation?

- a. 10 minutes
- b. 30 minutes
- c. 60 minutes
- d. 120 minutes

QUESTION: 055 (1.00)

WHICH ONE (1) of the following is the MAXIMUM time that the reactor coolant pumps (RCPs) are allowed to operate following a loss of CCW according to AOI-4.1.1, "Loss of Component Cooling"?

- a. 1 minute
- b. 2 minutes
- c. 5 minutes
- d. 10 minutes

QUESTION: 056 (1.00)

Given the following:

- Unit 2 is at 100% power.
- CCW surge tank Low level alarm is lit.
- CCW surge tank level is DECREASING.
- The CCW surge tank makeup valves are OPEN.
- Leak location has yet to be determined.

WHICH ONE (1) of the following is a possible location of the leak?

- a. Letdown heat exchanger
- b. Excess letdown heat exchanger
- c. RCS sample heat exchanger
- d. Seal water heat exchanger

QUESTION: 057 (1.00)

WHICH ONE (1) of the following should be performed FIRST following pressurizer pressure channel 1 (controlling channel) failing HIGH, according to AOI-28.5, "Pressurizer Pressure Channel Fails High"?

- a. Close both spray valves.
- b. Select any alternate operable channel position.
- c. Place pressurizer pressure control in manual.
- d. Verify pressurizer PORVs closed.

QUESTION: 058 (1.00)

Given the following:

- Unit 2 is at 100% power.
- All automatic control systems are in their normal lineup.
- The controlling PZR level transmitter fails at the programmed level that corresponds to full plant load.
- ASSUME no operator action is taken.

WHICH ONE (1) of the following describes the effect on charging and PZR level when the plant load is REDUCED?

- a. Charging flow remains constant and actual PZR level remains constant. Pressurizer heaters will energize to compensate for reduced Tav<sub>g</sub>.
- b. Charging flow decreases and actual PZR level decreases. At 18% actual level, letdown will isolate and the PZR heaters will cut off.
- c. Charging flow increases and actual PZR level increases. The backup heaters will energize as level rises due to the apparent in-surge.
- d. Charging flow remains constant and actual PZR level decreases. At 18% actual level, letdown will isolate and the PZR heaters will cut off.

QUESTION: 059 (1.00)

WHICH ONE (1) of the following is the FIRST response to an Anticipated Transient Without Scram (ATWS) per FR-S.1, "Response to Nuclear Power Generation/ ATWS"?

- a. Allow control rods to AUTOMATICALLY insert while initiating Emergency Boration.
- b. Allow control rods to AUTOMATICALLY insert while de-energizing rod drive MG set output breakers.
- c. Insert control rods MANUALLY while initiating Emergency Boration.
- d. Insert control rods MANUALLY while de-energizing rod drive MG set output breakers.

QUESTION: 060 (1.00)

WHICH ONE (1) of the following describes the operator response during an ATWS (Anticipated Transient Without Scram) with a loss of feedwater?

- a. Leave the main turbine on line to provide a heat sink for the RCS.
- b. Trip the main turbine to prevent an uncontrolled cooldown of the RCS.
- c. Leave the main turbine on line to reduce RCS pressure.
- d. Trip the main turbine to prevent steam generator dryout.

QUESTION: 061 (1.00)

Given the following:

- Plant is currently REFUELING.
- Source Range channel N-32 is in service with its associated audible indication in containment OPERABLE.
- Source Range channel N-31 has just failed offscale LOW.
- Core alterations are in progress.

WHICH ONE (1) of the following actions should be implemented?

- a. Continue core alterations and provide Backup Source Range indication from the Safe Shutdown Panel.
- b. Suspend all operations involving positive reactivity changes.
- c. Ensure Source Range channel N-32 is operable and remove channel N-31 from service.
- d. Initiate emergency boration to ensure an adequate shutdown margin is maintained.

QUESTION: 062 (1.00)

Given the following:

- A fuel assembly has just been removed from the core.
- Immediately after initiating transit to the upender the refueling cavity level is reported to be a foot below normal and dropping at a visible rate.

WHICH ONE (1) of the following is the preferred course of action?

- a. Stop the fuel movement at the current location in transit to the upender.
- b. Place the fuel assembly back in the core.
- c. Place the fuel assembly in the upender and lower it to the horizontal position.
- d. Position the mast over the deepest part of the cavity and lower the assembly to the bottom.

QUESTION: 063 (1.00)

WHICH ONE (1) of the following describes the RCP trip criteria while responding to a SGTR per E-3, "Steam Generator Tube Rupture"?

- a. RCPs should be tripped ANYTIME if the criteria are met.
- b. RCPs should be tripped ONLY if the criteria are met when the operator is specifically required to check the criteria.
- c. RCPs should be tripped ONLY if the criteria are met before isolating the ruptured S/G.
- d. RCPs should be tripped ONLY if the criteria are met before initiating cooldown and depressurization.

QUESTION: 064 (1.00)

WHICH ONE (1) of the following indications confirms that a Steam Generator Tube Rupture is occurring?

- a. Pressurizer pressure DECREASE with affected SG steam flow LESS than feed flow.
- b. Pressurizer level DECREASE with affected SG steam flow EQUAL to feed flow.
- c. Pressurizer pressure DECREASE with affected SG steam flow GREATER than feed flow.
- d. Pressurizer level DECREASE with affected SG steam flow DECREASING as feed flow DECREASES.

QUESTION: 065 (1.00)

WHICH ONE (1) of the following is the basis for maintaining steam generator level greater than 8% narrow range indication during a SGTR per ES-3.1, "Post-SGTR Cooldown Using Backfill"? ASSUME adverse containment conditions do NOT exist.

- a. To ensure a heat sink is available in the event of a loss of the unaffected steam generators.
- b. To prevent depressurization of the steam generator and increased break flow.
- c. To keep the steam generator tubes covered to minimize radioactivity release if the steam safety were to lift.
- d. To ensure the water from the AFW system does not flash to steam as it enters the feed ring causing further degradation.

QUESTION: 066 (1.00)

WHICH ONE (1) of the following is the basis for isolating feedwater flow to a faulted steam generator?

- a. To maximize the cooldown capability of the non-faulted steam generators.
- b. To maximize the steam generator blowdown capability of the non-faulted steam generators.
- c. To minimize the potential of rupturing a steam generator tube and subsequently having an offsite release.
- d. To minimize the temperature differential across the tubes in the non-faulted steam generators.

QUESTION: 067 (1.00)

Given the following:

- Steam break accident outside containment occurred and all SGs are depressurizing.
- SG levels range from 3% to 6% narrow range.
- Cooldown rate is 168 degrees/hr.
- Actions are being taken per ECA-2.1, "Uncontrolled Depressurization of All Steam Generators".

WHICH ONE (1) of the following is the MINIMUM AFW feed flow that must be maintained to EACH steam generator per ECA-2.1, "Uncontrolled Depressurization of All Steam Generators"?

- a. 25 gpm
- b. 50 gpm
- c. 75 gpm
- d. 100 gpm

QUESTION: 068 (1.00)

WHICH ONE (1) of the following condenser pressures is the MINIMUM at which an automatic turbine/reactor trip will occur?

- a. 15" Hg.
- b. 19" Hg.
- c. 22" Hg.
- d. 25" Hg.

QUESTION: 069 (1.00)

Given the following:

- The unit tripped from 100% power.
- A total loss of feedwater occurred.
- FR-H.1, "Response to Loss of Secondary Heat Sink", has been entered.
- Adverse containment conditions do NOT exist.

WHICH ONE (1) of the following conditions require the immediate use of RCS bleed and feed cooling?

- a. RCS subcooling at 10 degrees.
- b. All RCPs are tripped.
- c. Average of three lowest SG levels is 37% wide range.
- d. RCS pressure is at 2300 psig and slowly decreasing.

~~QUESTION: 070 (1.00)~~

~~WHICH ONE (1) of the following differentiates between an UNISOLABLE feedline break and an UNISOLABLE steam line break of the same size?~~

- ~~a. Containment pressure would be lower for a steamline break. *delete*~~
- ~~b. Feedwater flow indication goes to MINIMUM for a feedline break.~~
- ~~c. Containment radiation levels would be higher from a steam line break.~~
- ~~d. RCS depressurization would be greater from a feedline break.~~

QUESTION: 071 (1.00)

Given the following:

- A loss of all AC power has occurred coincident with a major LOCA.
- The BOP operator informs you that the Turbine Driven Auxiliary Feedwater pump has tripped.
- The RO informs you that he is observing erratic indications on the source range NIs.
- You have just noted that core exit thermocouples indicate 900 degrees F.

WHICH ONE (1) of the following procedures should be used in response to this situation?

- a. FR-C.1, "Response to Inadequate Core Cooling"
- b. ECA-0.0, "Loss of All AC Power"
- c. FR-H.1, "Response to Loss of Secondary Heat Sink"
- d. FR-S.1, "Response to Nuclear Power Generation/ATWS"

QUESTION: 072 (1.00)

Given the following:

- ONLY Emergency Diesel Generator (EDG) #21 has started following the loss of all AC power.
- The associated vital bus has failed to energize.

WHICH ONE (1) of the following is the reason for tripping EDG #21?

- a. Minimize potential of EDG damage due to running unloaded.
- b. Prevent overheating due to a loss of cooling water flow.
- c. Minimize potential of overloading the EDG output breaker.
- d. Conserve fuel oil in case offsite power is not restored.

QUESTION: 073 (1.00)

Given the following:

- Reactor is critical at  $1.0 \times 10^8$  amps.
- Inverter #21 (vital supply to instrument bus I) output breaker has tripped open causing a loss of 120 VAC to #21 Instrument Bus.

WHICH ONE (1) of the following will occur as a result?

- a. A SR High Flux Trip due to the de-energization of permissive P-6.
- b. A reactor trip due to the de-energization of SR channel N-31.
- c. A reactor trip due to the de-energization of IR channel N-35.
- d. The loss of several nuclear instrument channels with no change in reactor power.

QUESTION: 074 (1.00)

WHICH ONE (1) of the following describes 480V breaker operation if DC control power is lost?

- a. Breakers remain in their "as is" condition and operation is only possible by manual means.
- b. Automatic breaker trips remain operational but remote operation of breakers is not possible.
- c. Breakers remain remotely operable but automatic trip functions become inoperable.
- d. Breakers trip open and operation is only possible by manual means.

QUESTION: 075 (1.00)

WHICH ONE (1) of the following automatic actions occur on high radiation as detected by Plant Vent Monitor R-44?

- a. Containment purge fans STOP.
- b. VC evacuation alarm SOUNDS.
- c. VC pressure relief line valves CLOSE.
- d. CCR air conditioning switches to INCIDENT mode.

QUESTION: 076 (1.00)

Given the following:

- INST AIR LOW PRESS alarm has actuated.
- Instrument air pressure is decreasing.
- Pressurizer level has just reached 47% and is increasing.
- VCT level indicates 4% and decreasing.

WHICH ONE (1) of the following is the IMMEDIATE action required for this event?

- a. Trip the reactor and go to E-0, "Reactor Trip or Safety Injection".
- b. Commence an immediate plant shutdown per POP 3.1, "Plant Shutdown from Full power to Zero Power Condition."
- c. Ensure LCV-112B, Emergency RWST makeup to charging pump suction, is open.
- d. Place the VCT Level control in manual and restore level.

QUESTION: 077 (1.00)

Given the following:

- The plant is operating at 100% power.
- The SMF DELUGE SYSTEM ACTIVATED and SOF 21 MAIN XFMR DELUGE SYS TROUBLE alarms annunciate.
- The Rover reports that there is a fire in the 21 Main Transformer but the deluge system has not activated.

WHICH ONE (1) of the following describes the actuation of the deluge system?

- a. Automatically actuates on high temperature in the main transformer.
- b. Automatically actuates when smoke is detected inside the main transformer.
- c. Automatically actuates when the turbine generator is tripped.
- d. Actuates ONLY by manual action.

QUESTION: 078 (1.00)

WHICH ONE (1) of the following conditions represents a loss of primary containment integrity with the unit at 100% power per Technical Specifications 3.6, "Containment System"?

- a. Weld channel leakage from the containment free volume is calculated to be 20 SCFM using the integrator values.
- b. Weld Channel flow recorders indicate weld channel leakage from the containment free volume is 14 SCFM.
- c. An electrician opens the outer containment airlock door to perform maintenance activities without prior approval.
- d. While performing an operability test of two normally open, redundant containment isolation valves, one of the valves fails to close.

QUESTION: 079 (1.00)

Given the following:

- RCS pressure is at 1325 psig.
- Containment pressure is at 2.4 psig.
- Containment temperature is at 300 deg F.
- Hydrogen concentration is 1.2%.

WHICH ONE (1) of the following is the MAXIMUM allowable reactor vessel venting time? (References are attached.)

- a. 1.5 minutes
- b. 3.5 minutes
- c. 5.5 minutes
- d. 6.5 minutes

QUESTION: 080 (1.00)

WHICH ONE (1) of the following is the reason all reactor coolant pumps are tripped according to FR-H.1, "Response to Loss of Secondary Heat Sink"?

- a. To get increased SI flow by decreasing RCS cold leg pressure.
- b. To establish natural circulation conditions so as to extend the time before bleed and feed is initiated.
- c. To minimize the possibility of a tube rupture as AFW is restored to the S/G.
- d. To allow additional time to establish feedwater flow to a S/G.

QUESTION: 081 (1.00)

Given the following:

- A loss of offsite power occurred.
- Reactor power was initially at 100%.
- Tavg indicates 564 degrees F.
- Tcold is 541 degrees F.
- Thot is 580 degrees F.
- Pressurizer pressure is 2145 psig.

WHICH ONE (1) of the following is the subcooling margin that currently exists?

- a. 67 degrees F.
- b. 83 degrees F.
- c. 87 degrees F.
- d. 106 degrees F.

QUESTION: 082 (1.00)

WHICH ONE (1) of the following also represents a red path for core cooling? ASSUME a negative subcooling margin and adverse containment conditions do NOT exist.

	<u>At Least One RCP Running</u>	<u>Core Exit Temperature</u>	<u>RVLIS Vessel Level</u>
a.	no	indicating 748 deg F	indicating 35%
b.	yes	indicating 778 deg F	indicating 51%
c.	no	indicating 721 deg F	indicating 43%
d.	yes	indicating 786 deg F	indicating 27%

QUESTION: 083 (1.00)

WHICH ONE (1) of the following radiation monitors is indicative of high RCS activity per AOI-12.1, "High Activity Reactor Coolant System"?

- a. R-3, ABFP Building Monitor
- b. R-4, Charging Pump Room Monitor
- c. R-6, Sampling Room Monitor
- d. R-7, Incore Instrumentation Room Monitor

QUESTION: 084 (1.00)

Given the following:

- A "Hot Work" permit has been issued for welding in the Auxiliary Building.
- A fire watch has been established for the area involving the welding.

WHICH ONE (1) of the following is the MINIMUM time the fire watch is required to remain in the area following completion of the "Hot Work"?

- a. 0.5 hours
- b. 2.0 hours
- c. 4.0 hours
- d. 8.0 hours

QUESTION: 085 (1.00)

WHICH ONE (1) of the following actions should be taken per the Indian Point "Independent Verification Policy" if a valve that is required to be OPEN is found in the CLOSED position by the independent verifier?

- a. Note the valve position on the Comments/Exception page, open the valve, and continue the checklist.
- b. Inform the Senior Watch Supervisor and reposition the valve as directed.
- c. Reposition the valve and have the other individual of the two person team perform the independent verification.
- d. Leave the valve closed and fill in the "As Found" and "Initials" column on the checklist.

QUESTION: 086 (1.00)

WHICH ONE (1) of the following is NOT a proper location for placing Stop Tags associated with PULLED fuses per OAD 19, "Stop Tag-Out and Caution Tag Program"?

- a. On the fuses clips.
- b. On the fuse receptacle.
- c. On the supply breaker for the fused equipment.
- d. On the control switch for the fused equipment.

QUESTION: 087 (1.00)

WHICH ONE (1) of the following individuals should be DENIED access to the protected area at Indian Point 2?

- a. A Health Physics technician who admitted to consuming several cans of beer at 2:00 pm prior to being called in for work to perform an emergency radiological survey at 11:30 pm and tested to 0.42 blood alcohol concentration when he arrived on site.
- b. A control room operator who consumed two (2) cans of beer at a company picnic at 1:00 pm prior to reporting to work at 8:00 pm and tested to 0.038 blood alcohol concentration when he arrived on site.
- c. A contractor employee called in for emergency maintenance at 11:00 pm who notified security that he had been to happy hour at his hotel at 5:30 pm and tested to 0.03 blood alcohol concentration when he arrived on site.
- d. A maintenance employee who shared a bottle of wine with his wife at a 4:00 pm dinner party prior to being called in for unscheduled repair work at 10:00 pm and tested to 0.035 blood alcohol concentration when he arrived on site.

QUESTION: 088 (1.00)

Given the following:

-A 21 year-old male licensed operator has the following Total Effective Dose Equivalent (TEDE) at the middle of the second quarter:

Current quarterly TEDE - 325 mRem  
Current yearly TEDE - 580 mRem

WHICH ONE (1) of the following is the MAXIMUM additional TEDE exposure this operator can receive without exceeding the Indian Point annual administrative control limits?

- a. 3420 mRem
- b. 3675 mRem
- c. 4420 mRem
- d. 4675 mRem

QUESTION: 089 (1.00)

WHICH ONE (1) of the following individuals CANNOT authorize a work order having a NUMBER 1 priority?

- a. Vice President Nuclear Power
- b. Maintenance Manager
- c. Operations Manager
- d. General Manager Nuclear Power Generation

QUESTION: 090 (1.00)

WHICH ONE (1) of the following circumstances requires the Senior Watch Supervisor to IMMEDIATELY notify the Operations Manager (OM)?

- a. Equipment failure requiring a priority 2 work order.
- b. Inquiry from NRC Resident which may involve a potential violation.
- c. Entry into a Technical Specification LCO which requires a shutdown if equipment is not restored within 48 hours.
- d. A worker suffered minor injuries when he fell from a scaffold.

QUESTION: 091 (1.00)

WHICH ONE (1) of the following is an example of a "Non-Intent Procedure Change" per SAO 100, "Indian Point Station Procedure Policy"?

- a. Changing the "Pressurizer Low Level" alarm setpoint.
- b. Adding a QC hold point to a "Maintenance Procedure".
- c. Correcting a typographical error for the valve number on the Suction Valve for SI Pump #22.
- d. Updating the acceptance criteria for the "AFW Pump Surveillance Procedure".

QUESTION: 092 (1.00)

WHICH ONE (1) of the following is classified as a "jumper" per SAO 206, "Jumper Log"?

- a. Portable airborne radiation monitor.
- b. Pulled circuit card.
- c. Operation of an installed Bypass Switch.
- d. Hose connected from a system drain to a floor drain.

QUESTION: 093 (1.00)

Given the following:

- The plant tripped during startup.
- The cause of the trip has been positively identified as being due to low SG levels.
- The trip has been classified as a Condition I event.

WHICH ONE (1) of the following is the MINIMUM approval required for reactor restart?

- a. Operations Manager
- b. Senior Watch Supervisor
- c. Station Nuclear Safety Committee
- d. General Manager Nuclear Power Generation

QUESTION: 094 (1.00)

WHICH ONE (1) of the following is the MAXIMUM time period an "Area Work Permits" is valid per SAO 105, "Work Permits"? ASSUME time is not specifically specified on the permit.

- a. One (1) week
- b. One (1) month
- c. Three (3) months
- d. Six (6) months

## QUESTION: 095 (1.00)

WHICH ONE (1) of the following defines the MINIMUM radiological conditions that require posting a "CAUTION, RADIATION AREA" sign per SAO 304, "Radiological Boundary Controls"?

- a. Area within the RCA in which radiation levels could result in an individual receiving in any one (1) hour a dose in excess of five (5) mRem.
- b. Area within the RCA in which radiation levels could result in an individual receiving in any one (1) hour a dose in excess of ten (10) mRem.
- c. Area within the RCA in which radiation levels could result in an individual receiving in any one (1) hour a dose in excess of fifty (50) mRem.
- d. Area within the RCA in which radiation levels could result in an individual receiving in any one (1) hour a dose in excess of one hundred (100) mRem.

## QUESTION: 096 (1.00)

WHICH ONE (1) of the following conditions meets the log entry requirements per OAD 3, "Plant Surveillance and Log Keeping"?

- a. Boric acid pump removed from service at 20:00 hours is subsequently logged as being removed from service at 20:10 hours.
- b. Log entry is made by the RO who took the phone call but is not the designated watchstander.
- c. A routine reading was missed and is subsequently explained in the "Remarks Section".
- d. An incorrect entry is lined out, initialed, and the correct entry is noted with the current time and marked "Late Entry".

QUESTION: 097 (1.00)

Given the following:

-An Operator is performing an approved procedure when he encounters a "Caution" tag giving instructions contradictory to those in the procedure.

WHICH ONE (1) of the following actions should be taken by the operator?

- a. Deviate from the procedure and follow instructions of the CAUTION tag.
- b. N/A the step, note the deviation in the "Remarks Section", and continue with the procedure.
- c. Perform the procedure as written and disregard instructions on the CAUTION tag.
- d. Notify Senior Watch Supervisor of the CAUTION tag and await instructions before proceeding.

QUESTION: 098 (1.00)

WHICH ONE (1) of the following describes the application of NOTES in Emergency Operating Procedures (EOPs)?

- a. Apply to the entire procedure in which the NOTE is listed.
- b. Apply to the step(s) immediately preceding the NOTE.
- c. Only apply to the immediate action steps of that procedure.
- d. Only apply to the step(s) following the NOTE.

QUESTION: 099 (1.00)

WHICH ONE (1) of the following is the REQUIRED time for establishing Staffing Level II during an emergency per IP-1001, "Mobilization of Onsite Emergency Organization"?

- a. 15 minutes
- b. 30 minutes
- c. 45 minutes
- d. 60 minutes

QUESTION: 100 (1.00)

WHICH ONE (1) of the following SHALL assume the CCR Communicator position during an emergency if the Unit 1 Water Factory NPO is summoned to the fire brigade?

- a. Unit 2 Support Facilities NPO
- b. Unit 2 Water Factory NPO
- c. Qualified individual from the Security Force
- d. Senior Reactor Operator

(\*\*\*\*\* END OF EXAMINATION \*\*\*\*\*)

ANSWER: 001 (1.00)

d. [+1.0]

REFERENCE:

1. IP2: SYS-C-161, "Full Length Rod Control System", EO 4.4 and T/S 3.10.4 and Basis p. 3.10-16.
2. KA 001000K508 (3.9/4.4)

001000K508 ..(KA's)

ANSWER: 002 (1.00)

a. [+1.0]

REFERENCE:

1. IP2: SYS-C-161, "Full Length Rod Control System", EO 3.2 & 5.1, pp. 12-13.
2. Facility exam bank question #423
3. KA 001000K105 (4.5/4.4)

001000K105 ..(KA's)

ANSWER: 003 (1.00)

c. [+1.0] THIS QUESTION WAS DELETED

REFERENCE:

1. IP2: SYS-C-280, "RPS and ESFAS", p. 16 & 36.
2. IP2: SYS-C-161, "Full Length Rod Control System", EO 3.5.12, p. 30.
3. KA 001050K401 (3.4/3.8)

001050K401 ..(KA's)

ANSWER: 004 (1.00)

a. [+1.0]

REFERENCE:

1. IP2: SYS-C-011, "RCS", EO 3.6.1, 4.3.1, & 4.3.3, pp. 21-24.
2. KA 002020K509 (3.6/3.9)

002020K509 ..(KA's)

ANSWER: 005 (1.00)

c. [+1.0]

REFERENCE:

1. IP2: SYS-C-011, "RCS", EO 4.4.9 and T/S 3.1, F.2, p. 3.1.F-3 & F-4.
2. KA 002000G005 (3.6/4.1)

002000G005 ..(KA's)

ANSWER: 006 (1.00)

a. [+1.0]

REFERENCE:

1. IP2: SYS-C-012, "Steam Generators", EO 2.2, p. 11.
2. IP2: SYS-C-280, "RPS and ESFAS", EO 3.5.5 & 3.4.3, pp. 18 and 23.
3. KA 003000K304 (3.9/4.2) 003000K302 (3.5/3.8)

003000K304 ..(KA's)

ANSWER: 007 (1.00)

b. [+1.0]

REFERENCE:

1. IP2: SYS-C-0134, "RCPs", EO 4.1.1 and SOP 1.3, "Reactor Coolant Pump Startup and Shutdown", Precautions and Limitations, p. 1.
2. KA 003000G010 (3.3/3.6) 003000K614 (2.6/2.9)

003000K614 003000G010 ..(KA's)

ANSWER: 008 (1.00)

a. [+1.0]

REFERENCE:

1. IP2: SYS-C-013, "RCPs", EO 4.1.2, pp. 16-17 and Alarm Response Procedure for Panel SAF, window 1-1, p. 1.
2. KA 003000A405 (3.1/3.0)

003000A405 ..(KA's)

ANSWER: 009 (1.00)

d. [+1.0]

REFERENCE:

1. IP2: SYS-C-030, "CVCS", EO 3.1 & 3.5.3, p. 19.
2. IP2: Student Handout, "CVCS", p. 8.
3. KA 004010A401 (3.6/3.1)

004010A401 ..(KA's)

ANSWER: 010 (1.00)

b. [+1.0]

REFERENCE:

1. IP2: SYS-C-030, "CVCS", EO 3.4.3, 3.5.5 & 3.6.5, p. 15 & 19.
2. IP2: Student Handout, "CVCS", p. 7.
3. Facility Exam bank question #1181.
4. KA 004000K118 (2.9/3.2)

004000K118 ..(KA's)

ANSWER: 011 (1.00)

d. [+1.0]

REFERENCE:

1. IP2: SYS-C-280, ""RPS and ESFAS", EO 3.5.4, p. 32.
2. KA 006020K406 (3.9/4.2)

006020K406 ..(KA's)

ANSWER: 012 (1.00)

d. [+1.0]

REFERENCE:

1. IP2: SYS-C-101, "Safety Injection System", EO 3.5.7, p. 28.
2. IP2: SYS-C-041, "CCW", p. 17.
3. KA 006000A303 (4.1/4.1)

006000A303 ..(KA's)

ANSWER: 013 (1.00)

c. [+1.0]

REFERENCE:

1. IP2: Student Handout, "CCW System", EO 3.5.3, p. 5.
2. IP2: SYS-C-041, "CCW", EO 3.6.3, p. 18.
3. Alarm Response Procedure SGF, Window 3-3, page 11.
4. KA 008000K104 (3.3/3.3)

008000K104 ..(KA's)

ANSWER: 014 (1.00)

a. [+1.0]

REFERENCE:

1. IP2: SYS-C-041, "CCW", EO 3.5.6, pp. 12-14.
2. IP2: Student Handout, "CCW", pp. 3-4.
3. KA 008030A304 (3.6/3.7)

008030A304 ..(KA's)

ANSWER: 015 (1.00)

d. [+1.0]

REFERENCE:

1. IP2: SYS-C-014, "Pressurizer and Pressure Relief System", EO 3.5.2 & 3.6.2, pp. 24-25.
2. KA 010000A401 (3.7/3.5)

010000A401 ..(KA's)

ANSWER: 016 (1.00)

a. [+1.0]

REFERENCE:

1. IP2: SYS-C-014, "Pressurizer and Pressure Relief System", EO 3.6.1 & 4.3.11 and AOI-28.8, "Pressurizer Level Channel Fails Low", Automatic Actions, p. 1.
2. KA 011000K405 (3.7/4.1)

011000K405 ..(KA's)

ANSWER: 017 (1.00)

a. [+1.0]

REFERENCE:

1. IP2: SYS-C-280, "RPS and ESFAS", EO 3.4, pp. 15-18.
2. KA 012000K611 (2.9/2.9)

012000K611 ..(KA's)

ANSWER: 018 (1.00)

d. [+1.0]

REFERENCE:

1. IP2: Student Handout, Tab 12, Objective 3.1, page 20.
2. KA 012000K406 (3.2/3.5)

012000K406 ..(KA's)

ANSWER: 019 (1.00)

b. [+1.0]

REFERENCE:

1. IP2: SYS-C-280, "RPS and ESFAS", EO 3.5.4, pp. 31-32.
2. IP2: SYS-C-271, "Electrical Supplies & Distribution", EO 3.5.8, pp. 38-39.
3. KA 013000K401 (3.9/4.3)

013000K401 ..(KA's)

ANSWER: 020 (1.00)

a. [+1.0] THIS QUESTION WAS DELETED

REFERENCE:

1. IP2: SYS-C-163, "Rod Position Indication System", EO 3.1.4, p. 10.
2. KA 014000K101 (3.2/3.6)

014000K101 ..(KA's)

ANSWER: 021 (1.00)

a. [+1.0]

REFERENCE:

1. IP2: SYS-C-130, "Excore NIS", EO 4.4 and T/S 3.5, Table 3.5-2, p. 1 and POP 1.2, "Reactor Startup", p. 1.
2. KA 015000G005 (3.3/3.8)

015000G005 ..(KA's)

ANSWER: 022 (1.00)

b. [+1.0]

## REFERENCE:

1. IP2: SYS-C-130, "Excore NIS", EO 4.4 and T/S 3.10.2.4, p. 3.10-3.
2. KA 015000A105 (3.7/3.9)

015000A105 ..(KA's)

ANSWER: 023 (1.00)

c. [+1.0]

## REFERENCE:

1. IP2: SYS-C-130, "Excore NIS", EO 3.5, pp. 20-21 and Student Handout, "Nuclear Excore Instrumentation", p. 11.
2. KA 015000K401 (3.1/3.3)

015000K401 ..(KA's)

ANSWER: 024 (1.00)

b. [+1.0]

## REFERENCE:

1. IP2: Student Handout, "Containment Fan Cooling and H2 Control", EO 3.2, p. 5 and SYS-C-103, "Containment Cooling and Filtration", EO-3.2, p. 13.
2. IP2: SYS-C-101, "Safety Injection System", EO 3.5.7, p. 28.
3. KA 022000A301 (4.1/4.3)
4. 1993/03/26 RO exam question

022000A301 ..(KA's)

ANSWER: 025 (1.00)

d. [+1.0]

REFERENCE:

1. IP2: SRO-C-100, "ESFs", EO 2.2.1, p. 14.
2. IP2: Student Handout, "Containment Spray System", EO 1.2, p. 3.
3. KA 026000K402 (3.1/3.6)

026000K402 ..(KA's)

ANSWER: 026 (1.00)

d. [+1.0]

REFERENCE:

1. IP2: SYS-C-102, "Containment Spray System", EO 3.3.2, p. 15.
2. KA 026000K202 (2.7/2.9)

026000K202 ..(KA's)

ANSWER: 027 (1.00)

c. [+1.0]

REFERENCE:

1. IP2: SYS-C-102, "Containment Spray System", EO 3.5.3, p. 15.
2. KA 026020A404 (3.5/3.5)

026020A404 ..(KA's)

ANSWER: 028 (1.00)

a. [+1.0]

## REFERENCE:

1. IP2: SYS-C-170, "Fuel and Core Component Handling System", EO 2.1.4, pp. 10 & 24-25.
2. KA 034000K401 (2.6/3.4)

034000K401 ..(KA's)

ANSWER: 029 (1.00)

c. [+1.0]

## REFERENCE:

1. IP2: SYS-C-210, "Feedwater System", EO 3.6.1, pp. 28-29.
2. IP2: Student Handout, "Feedwater & S/G Water Level Control", Figure 10.
3. KA 035010A203 (3.4/3.6)

035010A203 ..(KA's)

ANSWER: 030 (1.00)

b. [+1.0]

## REFERENCE:

1. IP2: SYS-C-181N, "Steam Dump System", EO 4, pp. 11 & 15-16.
2. IP2: AOI 28.13, "1st Stage Pressure Channel Fails High", p. 1 and AOI 28.14, "1st Stage Pressure Channel Fails Low", p. 1.
3. KA 041020A408 (3.0/3.1)

041020A408 ..(KA's)

ANSWER: 031 (1.00)

a. [+1.0]

## REFERENCE:

1. IP2: SYS-C-210, "Feedwater System", EO 3.5.9 and Facility exam Bank question #496.
2. SYS-C-280, "RPS and ESFAS", EO 3.4.2, & 5.1.3, pp. 26-27.
3. KA 059000A412 (3.4/3.5)

059000A412 ..(KA's)

ANSWER: 032 (1.00)

d. [+1.0]

## REFERENCE:

1. IP2: SYS-C-210, "Feedwater System", EO 4.4.2 and T/S 3.4.B, p. 3.4-2.
2. Facility exam bank question #895.
3. KA 061000G006 (2.7/3.8)
4. 1993/03/26 SRO exam question

061000G006 ..(KA's)

ANSWER: 033 (1.00)

b. [+1.0]

## REFERENCE:

1. IP2: SYS-C-271, "Electrical Supplies & Distribution", EO 3.5.6
2. IP2: Student Handout, "Station Electrical Systems", p. 17.
3. KA 062000G007 (3.0/3.2)
4. 1993/03/26 SRO exam question

062000G007 ..(KA's)

ANSWER: 034 (1.00)

d. [+1.0]

REFERENCE:

1. IP2: SYS-C-273, "EDGs", EO 3.5.1 & 3.5.3, pp. 20-22.
2. KA 064000K402 (3.9/4.2)

064000K402 ..(KA's)

ANSWER: 035 (1.00)

a. [+1.0]

REFERENCE:

1. IP2: SYS-C-273, "EDGs", EO 2.2.1 & 4.1.7 and SOP 27.3.1, "EDG Manual Operation", Section 4.2.
2. Facility exam bank question #78
3. KA 064000A401 (4.0/4.3)

064000A401 ..(KA's)

ANSWER: 036 (1.00)

c. [+1.0]

REFERENCE:

1. IP2: SYS-C-273, "EDGs", EO 3.5.2, p. 20.
2. KA 064000K101 (4.1/4.4)

064000K101 ..(KA's)

ANSWER: 037 (1.00)

c. [+1.0]

## REFERENCE:

1. IP2: SYS-C-E0 3.5.1, p. 23 and SOP 12.1, "Radiation Monitoring System Operation".
2. KA 073000A402 (3.7/3.7)

073000A402 ..(KA's)

ANSWER: 038 (1.00)

c. [+1.0]

## REFERENCE:

1. IP2: SYS-C-240, "Circulating and Service Water Systems", EO 5.1.7, p. 25.
2. KA 075000K102 (2.9/3.1)

075000K102 ..(KA's)

ANSWER: 039 (1.00)

b. [+1.0]

## REFERENCE:

1. IP2: Student Handout, "Circulating and Service Water", EO 3.5.1, p. 13.
2. IP2: SYS-C-240, "Circulating and Service Water Systems", EO 3.5.1 & 5.1, pp. 17-19.
3. Facility exam bank question #687
4. KA 076000K116 (3.6/3.8)

076000K116 ..(KA's)

ANSWER: 040 (1.00)

c. [+1.0]

## REFERENCE:

1. IP2: SYS-C-296, "City Water and Fire Protection", EO 3.4.1, 3.4.3, 3.4.4 & 3.6.2, pp. 14-15.
2. KA 086000K402 (3.0/3.4)

086000K402 ..(KA's)

ANSWER: 041 (1.00)

c. [+1.0]

## REFERENCE:

1. IP2: SYS-C-161, "Full Length Rod Control System", EO 4.1.3 and AOI-16.1.1, "Dropped or Misaligned Rod/Rod Position Indicator Failure", p. 1.
2. KA 000003G010 (3.9/3.8)

000003G010 ..(KA's)

ANSWER: 042 (1.00)

c. [+1.0]

## REFERENCE:

1. IP2: SYS-C-161, "Full Length Rod Control System", EO 4.4.2 and T/S 3.10.5, p. 3.10-6.
2. KA 000005A105 (3.4/3.4)

000005A105 ..(KA's)

ANSWER: 043 (1.00)

b. [+1.0]

## REFERENCE:

1. IP2: EOP-C-002, "E-0, Reactor Trip or Safety Injection", EO 3 and E-0, "Reactor Trip or Safety Injection", step 2, p. 4.
2. KA 000007A202 (4.3/4.6)

000007A202 ..(KA's)

ANSWER: 044 (1.00)

c. [+1.0]

## REFERENCE:

1. IP2: EOP-C-007, "ES-0.2, Natural Circulation Cooldown", EO 4 & 5, pp. 7-8 and ES-0.2, "Natural Circulation Cooldown", step 9, p. 6.
2. Facility exam bank question #104
3. KA 000007A103 (4.2/4.1)

000007A103 ..(KA's)

ANSWER: 045 (1.00)

a. [+1.0]

## REFERENCE:

1. IP2: EOP-C-005, "ES-1.1, SI Termination", EO 1 and E-0, Reactor Trip or Safety Injection", step 30, p. 23.
2. KA 000009A234 (3.6/4.2)

000009A234 ..(KA's)

ANSWER: 046 (1.00)

b. [+1.0]

## REFERENCE:

1. IP2: EOP-C-012, ES-1.2, "Post-LOCA Cooldown and Depressurization", EO 4, p. 31.
2. IP2: ES-1.2, "Post-LOCA Cooldown and Depressurization", step 29, p. 28.
3. KA 000009A101 (4.4/4.3)

000009A101 ..(KA's)

ANSWER: 047 (1.00)

a. (+1.0)

## REFERENCE:

1. "Introduction To Emergency Operating Procedures", Objective 500/06, page 15.
2. KA 000011G012 (4.0/4.1)

000011G012 ..(KA's)

ANSWER: 048 (1.00)

d. [+1.0]

## REFERENCE:

1. IP2: EOP-C-014, "ES-1.4, Transfer to Hot Leg Recirculation", EO 2, p. 5.
2. KA 000011K313 (3.8/4.2)

000011K313 ..(KA's)

ANSWER: 049 (1.00)

a. [+1.0]

## REFERENCE:

1. IP2: EOP-C-051, "FR-I.3, Response to Voids in Reactor Vessel", EO 4, p. 5.
2. KA 000011A201 (4.2/4.7)

000011A201 ..(KA's)

ANSWER: 050 (1.00)

a. [+1.0]

## REFERENCE:

1. IP2: EOP-C-006, "Natural Circulation", EO 3, pp. 8-9 and ES-0.1, "Reactor Trip Response", Attachment 2, p. 14.
2. KA 015000K101 (4.4/4.6)
3. 1993/03/26 SRO exam question

000015K101 ..(KA's)

ANSWER: 051 (1.00)

b. [+1.0]

## REFERENCE:

1. IP2: SYS-C-030, "CVCS", EO 3.5.4 & 3.6.1, p. 22.
2. IP2: Student Handout, "CVCS", Figure 7.
3. KA 000022A108 (3.4/3.3)  
000022A108 ..(KA's)

ANSWER: 052 (1.00)

d. [+1.0]

## REFERENCE:

1. IP2: AOI-3.4, "Uncontrolled Reactivity Addition", p. 5.
2. Facility exam bank question #1194
3. KA 000024A117 (3.9/3.9)

000024A117 ..(KA's)

ANSWER: 053 (1.00)

- a. [+1.0]

## REFERENCE:

1. IP2: AOI-3.4, "Uncontrolled Reactivity Addition", Symptoms, p. 1.
2. KA 000024G011 (3.8/3.9)

000024G011 ..(KA's)

ANSWER: 054 (1.00)

- a. [+1.0]

## REFERENCE:

1. IP2: AOI 4.2.1, "Loss of Residual Heat Removal System", Figure 1.
2. Generic Letter 88-17 NOTE: This question reveals if the candidate is sufficiently sensitive to the issue of loss of RHR, and the very short time frame available to respond to same. Industry events have occurred where RHR has been lost at reduced inventory, and one key issue is the operators were often not aware how little time was available until saturation was reached in the core. The large amount of time between distractors precludes use a procedural graph.
3. KA 000025K101 (3.9/4.3)

000025K101 ..(KA's)

ANSWER: 055 (1.00)

- b. [+1.0]

## REFERENCE:

1. IP2: SYS-C-013, "RCPs", EO 4.1.2 and AOI-4.1.1, "Loss of Component Cooling", Section 3.1, p. 2.
2. KA 000026K303 (4.0/4.2)

000026K303 ..(KA's)

ANSWER: 056 (1.00)

- d. [+1.0]

## REFERENCE:

1. IP2: Student Handout, "CCW System", Figure 1.
2. IP2: SYS-C-041, "CCW", EO 4.1.4 & 4.1.5 and AOI-4.1.2, "Leakage Into Component Cooling System", pp. 2-7 (Identification of components that will cause in-leakage).
3. KA 000026A201 (2.9/3.5)

000026A201 ..(KA's)

ANSWER: 057 (1.00)

- c. [+1.0]

## REFERENCE:

1. IP2: SYS-C-014, "Pressurizer and Pressure Relief System", EO 4.3.1 and AOI-28.5, "Pressurizer Pressure Channel Fails High", Operator Actions, p. 1.
2. KA 000027A215 (3.7/4.0)

000027A215 ..(KA's)

ANSWER: 058 (1.00)

- b. [+1.0]

## REFERENCE:

1. IP2: Student Handout, "Pressurizer and Relief System", EO 4.1.3, p. 13.
2. IP2: SYS-C-014, "Pressurizer and Pressure Relief System", EO 3.6.1 & 5.1.1, pp. 23-24 & 26-27.
3. KA 000028A202 (3.4/3.8)

000028A202 ..(KA's)

ANSWER: 059 (1.00)

d. [+1.0]

## REFERENCE:

1. IP2: EOP-C-042, "FR-S.1, "Response to Nuclear Power Generation/ATWS", and FR-S.1, "Response to Nuclear Power Generation/ATWS", p. 2-4.
2. KA 000029G010 (4.5/4.5)

000029G010 ..(KA's)

ANSWER: 060 (1.00)

d. [+1.0]

## REFERENCE:

1. IP2: EOP-C-042, "FR-S.1, "Response to Nuclear Power Generation/ATWS", EO 4.
2. WOG Basis Document (Rev 1) for FR-S.1, p. 76.
3. KA 000029K312 (4.4/4.7)

000029K312 ..(KA's)

ANSWER: 061 (1.00)

b. [+1.0]

## REFERENCE:

1. IP2: SYS-C-130, "Excore NIS", EO 4.4.3 and TS 3.8, p. 3.8-1.
2. KA 000032G010 (2.9/3.1)

000032G010 ..(KA's)

ANSWER: 062 (1.00)

b. [+1.0]

## REFERENCE:

1. IP2: SYS-C-170, "Fuel and Core Component Handling System", EO 4.1.7 and AOI 17.0.3, "Undesirable Decrease in Refueling Cavity Water Level", p. 1.
2. KA 000011G011 (3.5/3.9)
3. 1993/03/26 SRO exam question

000036G011 ...(KA's)

ANSWER: 063 (1.00)

d. [+1.0]

## REFERENCE:

1. IP2: EOP-C-028, "E-3, Steam Generator Tube Rupture", EO 4 & 5, pp. 20 and 38.
2. WOG Basis Document (Rev 1) for E-3, p. 52.
3. KA 000038K308 (4.1/4.2)

000038K308 ..(KA's)

ANSWER: 064 (1.00)

c. [+1.0]

## REFERENCE:

1. IP2: EOP-C-028, "E-3, Steam Generator Tube Rupture", EO 3, pp. 6 & 20-21.
2. WOG Basis Document (Rev 1) for E-3, Description of SGTR, p. 4.
3. KA 000038A202 (4.5/4.8)

000038A202 ..(KA's)

ANSWER: 065 (1.00)

b. [+1.0]

## REFERENCE:

1. IP2: EOP-C-029, ES-3.1, "Post-SGTR Cooldown Using Backfill", EO 7, p. 18.
2. KA 000038K306 (4.2/4.5)

000038K306 ..(KA's)

ANSWER: 066 (1.00)

a. [+1.0]

## REFERENCE:

1. IP2: EOP-C-025, "E-2, Faulted Steam Generator Isolation", EO 5 and EOP E-2, step 4.
2. WOG Basis Document (Rev 1) for EOP E-2, p. 33.
3. KA 000040K304 (4.5/4.7)

000040K304 ..(KA's)

ANSWER: 067 (1.00)

c. [+1.0]

## REFERENCE:

1. IP2: EOP-C-026, "ECA-2.1, Uncontrolled Depressurization of All Steam Generators", EO 3 and ECA-2.1, "Uncontrolled Depressurization of All Steam Generators", CAUTION, p. 3.
2. KA 000040A110 (4.1/4.1)

000040A110 ..(KA's)

ANSWER: 068 (1.00)

c. [+1.0]

## REFERENCE:

1. IP2: AOI-20.1, "Loss of Condenser Vacuum", Automatic Actions, p. 1.
2. KA 000051A202 (3.9/4.1)

000051A202 ..(KA's)

ANSWER: 069 (1.00)

c. [+1.0]

## REFERENCE:

1. IP2: EOP-C-044, "FR-H.1, Response to Loss of Secondary Heat sink", EO 1 & 4, p. 7 and WOG Basis Document (Rev 1) for FR-H.1, p. 62.
2. KA 000054G010 (3.2/3.2)

000054G010 ..(KA's)

ANSWER: 070 (1.00)

b. [+1.0] THIS QUESTION WAS DELETED

## REFERENCE:

1. IP2: EOP-C-024, "Loss of Secondary Coolant", EO 1, pp. 5-6.
2. AOP 21.1.1, "Loss Of Feedwater", page 5.
2. KA 000054K101 (4.1/4.3)

000054K101 ..(KA's)

ANSWER: 071 (1.00)

b. [+1.0]

## REFERENCE:

1. IP2: EOP-C-036, "ECA-0.0, Loss of All AC Power", EO 6, p. 6 and ECA-0.0., "Loss of All Ac Power", NOTE, p. 2.
2. KA 000055G012 (3.9/4.0)
3. 1993/03/26 SRO exam question

000055G012 ..(KA's)

ANSWER: 072 (1.00)

b. [+1.0]

## REFERENCE:

1. IP2: EOP-C-036, "ECA-0.0, Loss of All AC Power", EO 7, p. 9.
2. IP2: SYS-C-273, "EDGs", EO 5.1.1, p. 26.
3. KA 000056K302 (4.4/4.7)

000056K302 ..(KA's)

ANSWER: 073 (1.00)

c. [+1.0]

## REFERENCE:

1. IP2: AOI-27.1.6, "Loss of Instrument Bus", Attachment A, pp. 7-9.
2. Facility exam Bank question #407
3. KA 000057A219 (4.0/4.3)

000057A219 ..(KA's)

ANSWER: 074 (1.00)

- a. [+1.0]

## REFERENCE:

1. IP2: SYS-C-271, "Electrical Supplies & Distribution", EO 3.1.9c & 4.1, p. 29 and AOI-27.1.11, "Loss of 125V DC Power", Symptoms/Indications, p. 2.
2. IP2: Student Handout, "Station Electrical Systems", EO 3.5, p. 15.
3. KA 000058A203 (3.5/3.9)

000058A203 ..(KA's)

ANSWER: 075 (1.00)

- c. [+1.0]

## REFERENCE:

1. IP2: SYS-C-120, "Radiation Monitor System", EO 4.1.6 & 5.1.2, p. 30 and AOI-12.1.2, "High Activity - Plant Vent Particulate Radiogas Monitor R-43/44", p. 1.
2. KA 000061A101 (3.6/3.6)

000061A101 ..(KA's)

ANSWER: 076 (1.00)

- a. [+1.0]

## REFERENCE:

1. IP2: SYS-C-292, "Instrument and Station Air", EO 4.1.3 and AOI-29.2, "Loss of Instrument Air", p. 2.
2. Facility exam bank questions #87 and #624.
3. KA 000065A206 (3.6/4.2)

000065A206 ..(KA's)

ANSWER: 077 (1.00)

c. [+1.0]

## REFERENCE:

1. IP2: SYS-C-296, "City Water and Fire Protection", EO 3.5.2, p. 17 and AOI-29.6, "Main Transformer Fire", NOTES, p. 1.
2. KA 000067A213 (3.3/4.4)
3. 1993/03/26 SRO exam question

000067A213 ..(KA's)

ANSWER: 078 (1.00)

a. [+1.0]

## REFERENCE:

1. IP2: SYS-C-107, "Containment Integrity System", EO 4.4.3 and T/S 1.0 "Definitions", pp. 1-3 & 1-4 and T/S 3.6, p. 3.6-1.
2. KA 000069A201 (3.7/4.3)

000069A201 ..(KA's)

ANSWER: 079 (1.00)

b. [+1.0]

## REFERENCE:

1. IP2: FR-I.3, "Response to Voids in Reactor Vessel", step 17 and Attachment 2.
2. KA 000069G012 (3.5/3.5) 000074G012 (4.3/4.4)

000074G012 000069G012 ..(KA's)

ANSWER: 080 (1.00)

d. [+1.0]

## REFERENCE:

1. IP2: EOP-C-044, "FR-H.1, Response to Loss of Secondary Heat Sink", EO 5, pp 8-9.
2. WOG Basis Document (Rev 1) for FR-H.1, p. 69.
3. KA 000074K304 (3.9/4.2)

000074K304 ..(KA's)

ANSWER: 081 (1.00)

a. [+1.0]

## REFERENCE:

1. Steam Tables
2. KA 000074A113 (4.3/4.6)

000074A113 ..(KA's)

ANSWER: 082 (1.00)

a. [+1.0]

REFERENCE:

1. IP2: EOP-C-018, "FR-C.1, Response to Inadequate Core Cooling", E0 3, EOP-E0, Foldout For E-0 Series Procedures and F-0.2, "Core Cooling".
2. KA 000074G011 (4.5/4.6)

000074G011 ..(KA's)

ANSWER: 083 (1.00)

b. [+1.0]

REFERENCE:

1. IP2: AOI-12.1, "High Activity Reactor Coolant System", Symptoms/ Indications, p. 1.
2. KA 000076K201 (2.6/3.0)

000076K201 ..(KA's)

ANSWER: 084 (1.00)

a. [+1.0]

REFERENCE:

1. IP2: SAO-705, "Fire Watch/Fire Watch Tour", p. 4.
2. KA 194001K116 (3.5/4.2)

194001K116 ..(KA's)

ANSWER: 085 (1.00)

d. [+1.0]

REFERENCE:

1. IP2: OAD-C-002, "Equipment Status Identification OAD-6", EO 7 and OAD 6, "Equipment Status Identification", pp. 2-3.
2. KA 194001K101 (3.6/3.7)

194001K101 ..(KA's)

ANSWER: 086 (1.00)

a. [+1.0]

REFERENCE:

1. IP2: OAD-C-004, "Stop Tag-Out and Caution Tag Program OAD-19", EO 5 and OAD 19, "Stop Tag-Out and Caution Tag Program", p. 5.
2. KA 194001K102 (3.7/4.1)

194001K102 ..(KA's)

ANSWER: 087 (1.00)

a. [+1.0]

REFERENCE:

1. IP2: SAO 103, "Fitness for Duty", pp. 2-3 & 11-12.
2. KA 194001K105 (3.1/3.4)

194001K105 ..(KA's)

ANSWER: 088 (1.00)

a. [+1.0]

REFERENCE:

1. IP2: SAO 301, "Personnel Dose Monitoring Program", p. 6.
2. KA 194001K103 (2.8/3.4)

194001K103 ..(KA's)

ANSWER: 089 (1.00)

b. [+1.0]

REFERENCE:

1. IP2: SAO-C-003, "Work Order Procedure SAO-204", EO 5 and SAO 204, "Indian Point Station Work Order Procedure", p. 5.
2. Facility exam bank question #647.
3. KA 194001A111 (2.8/4.1)

194001A111 ..(KA's)

ANSWER: 090 (1.00)

b. [+1.0]

REFERENCE:

1. IP2: OAD-C-007, "Policy for Conduct of Operations, OAD-15", EO 27 and "OAD 15, "Policy for Conduct of Operations", section 18, Notifications, p. 42.
2. KA 194001A105 (3.6/3.8)

194001A105 ..(KA's)

ANSWER: 091 (1.00)

c. [+1.0]

## REFERENCE:

1. IP2: OAD-C-006, "Procedure, Procedure Change SAO-100, Temporary Procedure Changes OAD-27, and Procedure, T.S., License Adherence, SAO-133", EO 1 and SAO 100, "Indian Point Station Procedure Policy", p. 5.
2. IP2: OAD 27, "Temporary Procedure Change", p. 2.
3. KA 194001A101 (3.3/3.4)

194001A101 ..(KA's)

ANSWER: 092 (1.00)

b. [+1.0]

## REFERENCE:

1. IP2: SAO-C-004, "Jumper Log SAO-206", EO 1 and SAO 206, "Jumper Log", p. 4.
2. KA 194001K102 (3.7/4.1)

194001K102 ..(KA's)

ANSWER: 093 (1.00)

c. [+1.0]

## REFERENCE:

1. IP2: OAD-C-005, "Post Trip Review and Evaluation Procedure OAD-23", EO 11 and OAD 23, "Post Trip Review and Evaluation Procedure", p. 12.
2. 1993/03/26 exam question
3. KA 194001A103 (2.5/3.4)

194001A103 ..(KA's)

ANSWER: 094 (1.00)

a. [+1.0]

REFERENCE:

1. IP2: SAO-C-001, "Work Permits SAO-105", EO 9 and SAO 105, "Work Permits", p. 3.
2. KA 194001A103 (2.5/3.4)

194001A103 ..(KA's)

ANSWER: 095 (1.00)

a. [+1.0]

REFERENCE:

1. IP2: CFR-C-002, "10 CFR 20", EO 10 and SAO 304, "Radiological Boundary Controls", p. 3 and Addendum II, p. 1.
2. KA 194001K103 (2.8/3.4)

194001K103 ..(KA's)

ANSWER: 096 (1.00)

c. [+1.0]

REFERENCE:

1. IP2: OAD 3, "Plant Surveillance and Log Keeping", pp. 2 & 15.
2. KA 194001A106 (3.6/3.8).

194001A106 ..(KA's)

ANSWER: 097 (1.00)

d. [+1.0]

## REFERENCE:

1. IP2: OAD-C-004, "Stop Tag-out and Caution Tag Programs OAD-19", EO 2 & 7 and OAD 19, "Stop Tag-out and Caution Tag Programs" section 4, Caution Tag Program, p. 8.
2. KA 194001K102 (3.7/4.1)

194001K102 ..(KA's)

ANSWER: 098 (1.00)

d. [+1.0]

## REFERENCE:

1. IP2: EOP-C-001, "Introduction to EOPs", EO 4, p. 13 and OAD 26, "Emergency Operating Procedures Users Guide", p. 1.
2. KA 194001A102 (4.1/3.9)

194001A102 ..(KA's)

ANSWER: 099 (1.00)

d. [+1.0]

## REFERENCE:

1. IP2: EPT-C-005, "IP-1001, Mobilization of Onsite Emergency Organization", EO 3, and IP-1001, "Mobilization of Onsite Emergency Organization", p. 3.
2. KA 194001A116 (3.1/4.4)

194001A116 ..(KA's)

ANSWER: 100 (1.00)

c. [+1.0]

REFERENCE:

1. IP2: EPT-C-003, "SWS Job Function", EO 1 and IP-1001, "Mobilization of Onsite Emergency Organization", p. 2.
2. KA 194001A116 (3.1/4.4)

194001A116 ..(KA's)

(\*\*\*\*\* END OF EXAMINATION \*\*\*\*\*)

## ANSWER KEY

## MULTIPLE CHOICE

001 d  
002 a  
~~003 c~~ DELETED  
004 a  
005 c  
006 a  
007 b  
008 a  
009 d  
010 b  
011 d  
012 d  
013 c  
014 a  
015 d  
016 a  
017 a  
018 d  
019 b  
~~020 a~~ DELETED  
021 a  
022 b

023 c  
024 b  
025 d  
026 d  
027 c  
028 a  
029 c  
030 b  
031 a  
032 d  
033 b  
034 d  
035 a  
036 c  
037 c  
038 c  
039 b  
040 c  
041 c  
042 c  
043 b  
044 c  
045 a

## ANSWER KEY

046	b	069	c
047	a	<del>070</del>	<del>b</del> DELETED
048	d	071	b
049	a	072	b
050	a	073	c
051	b	074	a
052	d	075	c
053	a	076	a
054	a	077	c
055	b	078	a
056	d	079	b
057	c	080	d
058	b	081	a
059	d	082	a
060	d	083	b
061	b	084	a
062	b	085	d
063	d	086	a
064	c	087	a
065	b	088	a
066	a	089	b
067	c	090	b
068	c	091	c

A N S W E R   K E Y

- 092   b
- 093   c
- 094   a
- 095   a
- 096   c
- 097   d
- 098   d
- 099   d
- 100   c

(\*\*\*\*\* END OF EXAMINATION \*\*\*\*\*)

S R O Exam P W R Reactor  
Organized by Question Number

<u>QUESTION</u>	<u>VALUE</u>	<u>REFERENCE</u>
001	1.00	8000019
002	1.00	8000026
003	1.00	8000027
004	1.00	8000028
005	1.00	8000032
006	1.00	8000021
007	1.00	8000035
008	1.00	8000048
009	1.00	8000029
010	1.00	8000030
011	1.00	8000051
012	1.00	8000052
013	1.00	8000034
014	1.00	8000036
015	1.00	8000043
016	1.00	8000056
017	1.00	8000022
018	1.00	8000023
019	1.00	8000049
020	1.00	8000050
021	1.00	8000020
022	1.00	8000024
023	1.00	8000025
024	1.00	8000018
025	1.00	8000031
026	1.00	8000044
027	1.00	8000045
028	1.00	8000033
029	1.00	8000038
030	1.00	8000037
031	1.00	8000039
032	1.00	8000047
033	1.00	8000053
034	1.00	8000041
035	1.00	8000042
036	1.00	8000054
037	1.00	8000046
038	1.00	8000057
039	1.00	8000040
040	1.00	8000055
041	1.00	8000076
042	1.00	8000084
043	1.00	8000069
044	1.00	8000096
045	1.00	8000082
046	1.00	8000098
047	1.00	8000064
048	1.00	8000070
049	1.00	8000078

S R O Exam P W R Reactor  
Organized by Question Number

<u>QUESTION</u>	<u>VALUE</u>	<u>REFERENCE</u>
050	1.00	8000080
051	1.00	8000100
052	1.00	8000074
053	1.00	8000075
054	1.00	8000071
055	1.00	8000059
056	1.00	8000087
057	1.00	8000093
058	1.00	8000072
059	1.00	8000065
060	1.00	8000067
061	1.00	8000086
062	1.00	8000073
063	1.00	8000061
064	1.00	8000062
065	1.00	8000097
066	1.00	8000060
067	1.00	8000066
068	1.00	8000063
069	1.00	8000094
070	1.00	8000095
071	1.00	8000088
072	1.00	8000068
073	1.00	8000090
074	1.00	8000081
075	1.00	8000099
076	1.00	8000085
077	1.00	8000092
078	1.00	8000058
079	1.00	8000077
080	1.00	8000079
081	1.00	8000083
082	1.00	8000089
083	1.00	8000091
084	1.00	8000001
085	1.00	8000002
086	1.00	8000003
087	1.00	8000004
088	1.00	8000005
089	1.00	8000006
090	1.00	8000007
091	1.00	8000008
092	1.00	8000009
093	1.00	8000010
094	1.00	8000011
095	1.00	8000012
096	1.00	8000013
097	1.00	8000014
098	1.00	8000015

S R O Exam P W R Reactor  
Organized by Question Number

<u>QUESTION</u>	<u>VALUE</u>	<u>REFERENCE</u>
099	1.00	8000016
100	1.00	8000017
	-----	
	100.00	
	-----	
	100.00	

S R O Exam P W R Reactor  
Organized by KA Group

## PLANT WIDE GENERICS

<u>QUESTION</u>	<u>VALUE</u>	<u>KA</u>
091	1.00	194001A101
098	1.00	194001A102
093	1.00	194001A103
094	1.00	194001A103
090	1.00	194001A105
096	1.00	194001A106
089	1.00	194001A111
099	1.00	194001A116
100	1.00	194001A116
085	1.00	194001K101
092	1.00	194001K102
097	1.00	194001K102
086	1.00	194001K102
095	1.00	194001K103
088	1.00	194001K103
087	1.00	194001K105
084	1.00	194001K116
PWG Total	17.00	

## PLANT SYSTEMS

## Group I

<u>QUESTION</u>	<u>VALUE</u>	<u>KA</u>
002	1.00	001000K105
001	1.00	001000K508
003	1.00	001050K401
008	1.00	003000A405
006	1.00	003000K304
007	1.00	003000K614
010	1.00	004000K118
009	1.00	004010A401
019	1.00	013000K401
020	1.00	014000K101
022	1.00	015000A105
021	1.00	015000G005
023	1.00	015000K401
024	1.00	022000A301
026	1.00	026000K202
025	1.00	026000K402
027	1.00	026020A404
031	1.00	059000A412
032	1.00	061000G006

S R O Exam P W R Reactor  
Organized by KA Group

## PLANT SYSTEMS

## Group I

<u>QUESTION</u>	<u>VALUE</u>	<u>KA</u>
PS-I Total	19.00	

## Group II

<u>QUESTION</u>	<u>VALUE</u>	<u>KA</u>
005	1.00	002000G005
004	1.00	002020K509
012	1.00	006000A303
011	1.00	006020K406
015	1.00	010000A401
016	1.00	011000K405
018	1.00	012000K406
017	1.00	012000K611
028	1.00	034000K401
029	1.00	035010A203
033	1.00	062000G007
035	1.00	064000A401
036	1.00	064000K101
034	1.00	064000K402
037	1.00	073000A402
038	1.00	075000K102
040	1.00	086000K402

PS-II Total	17.00	
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## Group III

<u>QUESTION</u>	<u>VALUE</u>	<u>KA</u>
013	1.00	008000K104
014	1.00	008030A304
030	1.00	041020A408
039	1.00	076000K116

PS-III Total	4.00	
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PS Total	40.00	
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## EMERGENCY PLANT EVOLUTIONS

## Group I

S R O Exam P W R Reactor  
Organized by KA Group

## EMERGENCY PLANT EVOLUTIONS

## Group I

<u>QUESTION</u>	<u>VALUE</u>	<u>KA</u>
041	1.00	000003G010
042	1.00	000005A105
049	1.00	000011A201
047	1.00	000011G012
048	1.00	000011K313
050	1.00	000015K101
052	1.00	000024A117
053	1.00	000024G011
056	1.00	000026A201
055	1.00	000026K303
059	1.00	000029G010
060	1.00	000029K312
067	1.00	000040A110
066	1.00	000040K304
068	1.00	000051A202
071	1.00	000055G012
073	1.00	000057A219
077	1.00	000067A213
078	1.00	000069A201
081	1.00	000074A113
082	1.00	000074G011
079	1.00	000074G012
080	1.00	000074K304
083	1.00	000076K201

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 EPE-I Total 24.00

## Group II

<u>QUESTION</u>	<u>VALUE</u>	<u>KA</u>
044	1.00	000007A103
043	1.00	000007A202
046	1.00	000009A101
045	1.00	000009A234
051	1.00	000022A108
054	1.00	000025K101
057	1.00	000027A215
061	1.00	000032G010
064	1.00	000038A202
065	1.00	000038K306
063	1.00	000038K308
069	1.00	000054G010
070	1.00	000054K101
074	1.00	000058A203

S R O Exam P W R Reactor  
Organized by KA Group

## EMERGENCY PLANT EVOLUTIONS

## Group II

<u>QUESTION</u>	<u>VALUE</u>	<u>KA</u>
075	1.00	000061A101
076	1.00	000065A206
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EPE-II Total	16.00	

## Group III

<u>QUESTION</u>	<u>VALUE</u>	<u>KA</u>
058	1.00	000028A202
062	1.00	000036G011
072	1.00	000056K302
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EPE-III Total	3.00	

EPE Total	43.00	
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Test Total	100.00	
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