U.S. Nuclear Regulatory Commission
Site-Specific
Written Examination

Applicant Information

Name: MASTER	Region: III
Date: February 02, 2002	Facility/Unit: POINT BEACH U1 & U2
License Level: SRO	Reactor Type: W
Start Time:	Finish Time:

Instructions

Use the answer sheets provided to document your answers. Staple this cover sheet on top of the answer sheets. The passing grade requires a final grade of at least 80.00 percent. Examination papers will be collected five hours after the examination starts.

Applicant Certification

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

_____
Applicant's Signature

Results

Examination Value	100.0	Points
Applicant's Score	_____	Points
Applicant's Grade	_____	Percent

GENERAL GUIDELINES

1. ***[Read Verbatim]*** Cheating on any part of the examination will result in a denial of your application and/or action against your license.

2. If you have any questions concerning the administration of any part of the examination, do not hesitate asking them before starting that part of the test.

3. SRO applicants will be tested at the level of responsibility of the senior licensed shift position (i.e., shift supervisor, senior shift supervisor, or whatever the title of the position may be).

4. You must pass every part of the examination to receive a license or to continue performing license duties. Applicants for an SRO-upgrade license may require remedial training in order to continue their RO duties if the examination reveals deficiencies in the required knowledge and abilities.

5. The NRC examiner is not allowed to reveal the results of any part of the examination until they have been reviewed and approved by NRC management. Grades provided by the facility licensee are preliminary until approved by the NRC. You will be informed of the official examination results about 30 days after all the examinations are complete.

6. After you complete the examination, 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.

7. To pass the examination, you must achieve a grade of 80.00 percent or greater; grades will not be rounded up to achieve a passing score. Every question is worth one point.

8. For an initial examination, the nominal time limit for completing the examination is six hours; extensions will be considered under extenuating circumstances.

9. You may bring pens, pencils, and calculators into the examination room. Dark pencil should be used to facilitate machine grading.

10. Print your name in the blank provided on the examination cover sheet and the answer sheet.

11. Mark your answers on the answer sheet provided and do not leave any question blank.

12. If you have any questions concerning the intent or the initial conditions of a question, do *not* hesitate asking them before answering the question. Ask questions of the NRC examiner or the designated facility instructor *only.* When answering a question, do *not* make assumptions regarding conditions that are not specified in the question unless they occur as a consequence of other conditions that are stated in the question. For example, you should not assume that any alarm has activated unless the question so states or the alarm is expected to activate as a result of the conditions that are stated in the question. Finally, answer all questions based on actual plant operation, procedures,

and references. If you believe that the answer would be different based on simulator operation or training references, you should answer the question based on the *actual plant*.

13. Restroom trips are permitted, but only one applicant at a time will be allowed to leave. Avoid all contact with anyone outside the examination room to eliminate even the appearance or possibility of cheating.

14. When you complete the examination, assemble a package including the examination cover sheet and your scan-tron sheet and give it to the examiner or proctor. Remember to sign the statement on the examination cover sheet indicating that the work is your own and that you have neither given nor received assistance in completing the examination. Leave all other paper and reference materials at your desk, it will be disposed of immediately after the examination.

10. After you have turned in your examination, leave the examination area as defined by the proctor or NRC examiner. If you are found in this area while the examination is still in progress, your license may be denied or revoked.

11. Do you have any questions?

QUESTION: 001 (1.00)

With the reactor operating at 70% power and turbine in IMP IN, the following symptoms occur:

- Rising NI Power.
- Turbine Power constant.
- T_{AVG} greater than T_{REF}.
- Rising pressurizer pressure.
- Rising steam generator pressures.

a. Excessive boration.

b. Main Steam Line leak.

c. Inadvertent AFW actuation.

d. Uncontrolled rod withdrawal.

QUESTION: 002 (1.00)

The following plant conditions exist:

- Unit 1 is at 60% power.
- A dropped control rod is being recovered in accordance with AOP-6A, "Dropped ROD."
- A different rod in the same bank falls partially into the core.

Which ONE of the following actions is required, given these conditions?

a. Manually trip the reactor if an automatic reactor trip did not occur.

b. Position control rods as necessary to maintain T_{AVG}/T_{REF} deviation less than 10°F.

c. Perform a flux map to verify the dropped rod's position, then declare the rod inoperable.

d. Perform a shutdown margin calculation within one hour of the dropped rod and every 12 hours thereafter until the rod is declared inoperable or is restored.

QUESTION: 003 (1.00)

A dropped rod has occurred and the Operating Crew is responding in accordance with plant procedures. A step in the procedure, which reference Technical Specifications, states, "If Axial Flux Difference (AFD) cannot be restored within the required band, then reduce thermal power to less than or equal to 50% within the next 3 hours."

The basis for this action includes all EXCEPT which one of the following choices?

a. To ensure adequate shutdown margin is maintained during recovery of the dropped rod.

b. To prevent invalidating the conclusions of the transient and accident analyses with regard to fuel clad integrity.

c. To limit power distribution skewing so core peaking factors are consistent with assumptions used in the safety analyses.

d. To ensure Heat Flux Hot Channel Factor is NOT exceeded during normal operation or in the event of xenon redistribution following power changes.

QUESTION: 004 (1.00)

Given the following plant conditions:

- Unit 1 was operating at 100% power (full load) with $T_{AVG} = T_{REF}$.
- Reactor power / turbine power was then reduced to 430 MWe for Cross-Over Steam Dump Valve testing.
- A single Bank 'D' control rod became stuck at the reduced power level.
- Following completion of the testing, Unit 1 electrical output is returned to the previous full load value, with $T_{AVG} = T_{REF}$. (Assume the stuck control rod remains undetected).
- Ignore any xenon effects.

Comparing the new full load condition to the previous full load condition, which ONE of the following choices indicates the correct direction of change for the listed parameters?

	Reactor Power	Turbine Power	RCS Boron Concentration
a.	lower	same	lower
b.	same	same	same
c.	same	same	lower
d.	same	lower	higher

QUESTION: 005 (1.00)

Which one of the following will occur from a Manual Containment Spray Actuation as opposed to an Automatic Containment Spray Actuation?

a. Safety Injection will actuate.

b. Caustic additive isolation valves will open.

c. Containment ventilation isolation will actuate.

d. Containment spray pump discharge isolation valves will open.

QUESTION: 006 (1.00)

The following plant parameters exist:

- RCS pressure is 1600 psig and lowering.
- Pressurizer level is slowly lowering.
- PORVs and spray valves are closed.
- All steam generator water levels are normal
- Auxiliary building radiation monitors are rising.
- Plant ventilation radiation monitors are rising.
- Containment pressure and sump levels are normal.

Which one of the following is the correct plant condition?

a. Faulted Steam Generator

b. Ruptured Steam Generator

c. LOCA Inside Containment

d. LOCA Outside Containment

QUESTION: 007 (1.00)

The reactor has tripped from 100% power due to a loss of offsite AC power. The EDGs are supplying the safeguards buses. Immediately after the transition to EOP-0.1, "Reactor Trip Response," the operator notes these indications:

RCS	A	B	Units
TH_{WR}	584	585	degF
TC_{WR}	550	548	degF
Core TCs	590	----	degF
RCPs	Off	Off	----
PZR Press	1737	----	psig
PZR Level	10		%
Subcooling	27	30	degF

Secondary	A	B	Units
S/G Press	1010	1005	psig
S/G Level	190	190	inches
AFW Flow	110	110	gpm

What action(s) is(are) required?

a. Remain in EOP-0.1, "Reactor Trip Response," and maximize AFW flow.

b. Manually initiate safety injection and go to EOP-0, "Reactor Trip or Safety Injection."

c. Go to CSP-H.2, "Response to Steam Generator Overpressure," and raise AFW flow.

d. Go to CSP-C.3, "Response to Saturated Core Cooling," and start a second charging pump.

QUESTION: 008 (1.00)

The reactor is at the point of adding heat and the following alarms/indications have occurred:

- 1P-1A RCP No. 1 Seal Delta P Low Annunciator (1C04 1C 4-11)
- 1P-1A RCP No. 1 Seal Leakage indicates less than 0.8 gpm
- 1P-1A RCP No. 1 Seal Water Outlet Temperature is rising

Based on these plant conditions, which one of the following is the correct sequence of actions?

a. Trip the affected RCP, manually trip the reactor, and then stabilize the plant using EOP-0, "REACTOR TRIP AND SAFETY INJECTION."

b. Manually trip the reactor, stabilize the plant using EOP-0, "REACTOR TRIP AND SAFETY INJECTION," and then trip the affected RCP.

c. Trip the affected RCP, the reactor will automatically trip, and then stabilize the plant using EOP-0, "REACTOR TRIP AND SAFETY INJECTION."

d. Manually trip the reactor, stabilize the plant using EOP-0, "REACTOR TRIP AND SAFETY INJECTION," and then close the No. 1 seal water return MOV, 1CV-270A.

QUESTION: 009 (1.00)

A reactor is operating at 100% power when a loss of offsite power occurs resulting in a reactor trip and a loss of forced reactor coolant circulation. Reactor coolant system (RCS) hot leg temperature is greater than cold leg temperature and steam generator (S/G) levels are stable. (CETC = core exit thermocouples)

Which one of the following combinations of parameter trends, occurring 30 minutes after the trip, indicates that natural circulation is occurring?

	RCS HOT LEG TEMPERATURE	RCS COLD LEG TEMPERATURE	S/G PRESSURES	RCS (CETC) SUBCOOLING
a.	Decreasing	Stable	Stable	Increasing
b.	Increasing	Decreasing	Increasing	Stable
c.	Stable	Decreasing	Increasing	Decreasing
d.	Increasing	Stable	Decreasing	Increasing

QUESTION: 010 (1.00)

A reactor trip and turbine trip from 100% power has occurred due to a main generator lockout. Both reactor trip breakers opened as required. Actions of EOP 0.1, "Reactor Trip Response," are in progress when the following indications are observed:

- One control rod indicates it is at 30 steps, its rod bottom light is not lit.
- Another control rod in the same group indicates it is at 10 steps, its rod bottom light is lit.

Based on these indications, which ONE of the following describes the correct action and the reason for that action?

a. Emergency boration is required since two rods must be considered not fully inserted.

b. Emergency boration is NOT required since only one rod is considered to be not fully inserted.

c. Emergency boration is NOT required since all rods may be considered fully inserted.

d. Emergency boration is required since one rod did not fully insert and another rod in the same group indicates >10 steps.

QUESTION: 011 (1.00)

Given the following plant conditions:

- Unit 2 is at Full Power
- 2P-11B, CCW pump is running with 2P-11A in standby.
- A breaker malfunction occurs which results in 0 volts indicated on 2B04.

Assuming NO operator action taken unless specified in the response, what is the effect of this transient and what precedure(s) will you direct as DOS to correct this situation?

(AOP-9B, "Component Cooling Water Malfunction")
(AOP-18B, "Train 'B' Equipment Operations")

a. 2P-11A will start on low pressure and 2P-11B will automatically restart when power is restored to the buses, only AOP-9B should be entered.

b. 2P-11A will start on the UV on 2B04 and the breaker for 2P-11B will trip open and remain that way until reset by operators, only AOP-18B should be entered.

c. 2P-11A will start on low pressure and 2P-11B will automatically restart when power is restored to the buses, both AOP-9B and AOP-18B should be entered.

d. 2P-11A will start on the UV on 2B04 and the breaker for 2P-11B will trip open and remain that way until reset by operators, both AOP-9B and AOP-18B should be entered.

QUESTION: 012 (1.00)

Unit 1 is at 100% power, middle-of-life, when the reactor fails to trip when required. The operators take actions in accordance with CSP-S.1, "Response to Nuclear Power Generation / ATWS." The following plant conditions are noted when the operators get to the step which is to, "Verify Reactor Subcritical:"

- Reactor Trip breakers are NOT OPEN.
- Control rods are NOT FULLY INSERTED
- Normal and emergency boration, including the RWST flowpath, CANNOT be established because of blockage in the flow paths.
- All power range channels indicate 4% power.
- Both intermediate range startup rates (SUR) indicate +0.1 dpm

Which one of the following describes the action you would take and reason why, given these conditions?

a. Allow the reactor coolant system to heatup while continuing with efforts to establish normal or emergency boration. The heatup will insert negative reactivity.

b. Exit CSP-S.1 and return to the procedure and step in effect. Power is less than 5%, which is the design power level for auxiliary feedwater heat removal capability.

c. Maintain stable reactor coolant system temperature while continuing with actions in CSP-S.1. Stable temperatures preclude positive reactivity insertion by dilution.

d. Exit CSP-S.1 and transition to CSP-S.2, "Response to Loss of Core Shutdown," since power ranges are less than 5% with an intermediate range startup rate that is NOT more negative than -0.2 dpm.

QUESTION: 013 (1.00)

During uncontrolled depressurization of both steam generators (S/Gs) event, why is feed flow throttled to maintain 50 gpm to each S/G when levels in both S/Gs are less than 29% and cooldown rate is greater than 100°F/hour?

a. To prevent S/G tube dry out and to minimize RCS cooldown.

b. To prevent runout from occurring on the operating auxiliary feed water pump(s) and to minimize RCS cooldown.

c. To minimize the unmonitored release of the S/G contents to the environment and to maximize feedwater inventory to the faulted S/Gs.

d. To minimize the temperature stress in the faulted S/G and to prevent runout from occurring on the operating auxiliary feedwater pump(s).

QUESTION: 014 (1.00)

Unit 2 was operating at full power when it experienced a main steam line break. Because of difficulties shutting the MSIVs, the affected S/G has blown dry. Thirty (30) minutes after the transient, the following plant conditions exist:

- All RCPs have been stopped.
- RCS THOT is 282°F and lowering
- RCS TCOLD is 267°F and lowering
- SI flow is being supplied to the RCS.
- Calculated subcooling is 285°F and rising.
- AFW is being supplied to the intact S/G at 200 gpm.

Given these plant conditions, which ONE of the following is correct?

a. A loss of heat sink has occurred due to the S/G being dry.

b. A potential pressurized thermal shock condition has occurred and RCS pressure is to be minimized.

c. Injection of ECCS accumulator nitrogen into the RCS will occur and cause a loss of heat sink.

d. RHR pumps are injecting providing core cooling.

QUESTION: 015 (1.00)

The following plant conditions exist:

- Unit 1 is coming out of a refueling outage and is holding power at 28% for chemistry concerns.
- The 'A' condensate pump, 'A' main feedwater pump, and the 'A' circulating pump are operating.
- The 'A' circulating water pump circuit breaker trips open due to ground fault.

Assuming no operator action and given these plant conditions, what will occur?

a. Neither the turbine nor reactor will trip.

b. The reactor will trip but not cause a turbine trip.

c. The turbine will trip but not cause a reactor trip.

d. The turbine will trip and cause a reactor trip.

QUESTION: 016 (1.00)

The following plant conditions exist:

- Unit 1 has experienced a loss of all AC Power due to severe weather conditions and failure of emergency diesel generators to start and supply safeguard buses.
- The operating crew is carrying out actions of ECA 0.0, "Loss of All AC Power."
- Immediate actions have been completed and steps to restore power are in progress.
- The operators are at a point where they are to commence cooldown and depressurization of the steam generators.

Based on these conditions, which ONE of the following statements describes the reason why a secondary depressurization is directed?

a. To ensure the reactor remains subcritical and does not result in a restart accident.

b. To minimize RCS inventory loss through the RCP seals, which maximizes time to core uncovery.

c. To remove all the stored energy in the steam generators to prevent a secondary safety valve from lifting.

d. To prevent a challenge to the Integrity Critical Safety Function Status Tree which is being monitored for implementation.

QUESTION: 017 (1.00)

A breaker failure has resulted in complete deenergization of the WHITE 120V VITAL Instrument Bus, 1Y-03.

What automatic actions will occur as a direct result of the WHITE Instrument bus loss. (Assume this is the only failure or abnormal event that occurs.)

a. Unit 1 'A' Feed Line Isolation will actuate.

b. Unit 1 'B' Main Steam Line Isolation Valve will isolate.

c. Letdown will isolate.

d. 1P-29, Turbine Driven Auxiliary Feedwater Pump, will actuate.

QUESTION: 018 (1.00)

The following plant conditions exist:

- Both units are operating at full power.
- No plant evolutions are in progress.
- The Unit 1 Service Water Overboard Monitor (1RE-229) is in alert on the Control Room RMS.
- The Control Room Team verifies this is a valid alarm per RMSASRB guidelines and an unscheduled release is in progress.

Which ONE of the following choices describes additional expected control room team actions and why?

a. Refer to Technical Specifications which directs a determination of effluent radiation levels after completing release.

b. Refer to AOP-4A, "High Effluent Activity," which directs the effluent release path be isolated to minimize exposure to the public.

c. Refer to AOP-4A, "High Effluent Activity," which allows discharge to continue since the dilution to Lake Michigan would be of no concern.

d. Refer to "Radioactive Liquid Waste Permits" section of Release Accountability Manual (RAM 3.1) which provides release requirements after an accidental release has occurred.

QUESTION: 019 (1.00)

Given the following plant conditions:

- Both units are at 100% power.
- Unit 2 is aligned for ice melt.

Which ONE of the following conditions would indicate a cause for loss of the Service Water System (inoperability) AND also meet the criteria for a subsequent UNIT 1 trip?

a. Unit 1 condenser vacuum at 23 inches Hg.

b. South Service Water header pressure at 55 psig.

c. South Pump Bay at -11.3 feet.

d. North Pump Bay at -12 feet.

QUESTION: 020 (1.00)

The fire brigade is responding to a Class 'C' fire in an energized lighting panel.

Which one of the following choices is an acceptable method to combat this type of fire in accordance with the PBNP Fire Protection Manual?

a. Foam is a recommended agent.

b. Carbon Dioxide is a recommended agent.

c. Water in a solid stream is a recommended agent.

d. De-energizing the panel is the only acceptable method to extinguish this fire.

QUESTION: 021 (1.00)

Given the following plant conditions:

- A plant worker reports a small amount of blue smoke and acrid smell originating from the Cable Spreading Room.
- The Turbine Hall AO is dispatched to verify this report and finds that the room has filled with smoke, and after a quick check, all personnel have been evacuated.
- A non-controlling channel of Pressurizer Level fails low on Unit 1.
- The Control Room Team enters AOP-10A, "Safe Shutdown - Local Control."

Based on these conditions which one of the following is the correct course of action with regard to the reactor trip system?

a. Only Unit 1 should be manually tripped from the Control Room.

b. Both Units should be manually tripped from the Control Room.

c. Only Unit 1 should be manually tripped from its Rod Drive Room.

d. Both Units should be manually tripped from their respective Rod Drive Rooms.

QUESTION: 022 (1.00)

Given the following plant conditions:

- A Large Break LOCA has occurred in Unit 1.
- Automatic Actions in accordance with Attachment 'A' of EOP-0, "Reactor Trip or Safety Injection," are being verified by the BOP operator (3rd license).
- The following items are reported as a result of this attachment:

- 1CV-371, "Letdown Line Isolation" light is NOT LIT on C-01
- Containment pressure is 40 psig and rising
- One (1) Containment Spray pump (P-14A) is running.

Given this situation, which one of the following actions ensures containment integrity?

a. All Containment Accident Fans must be RUNNING.

b. Ensure all Spray Pump Discharge MOVs are OPEN.

c. 1CV-371A, "Letdown Isolation Valve," must be verified SHUT.

d. Both Service Water MOVs 1W-2907 and 1SW-2908 must be OPEN.

QUESTION: 023 (1.00)

A small break LOCA has occurred on Unit 1 and only RHR pumps are available for core cooing. The following plant indications exist:

- RCPs have been secured.
- RCS temperature is slowly rising.
- RCS pressure is 900 psig and slowly rising.
- Reactor Vessel water level is slowly trending downward.
- RCS subcooling is slightly negative and trending in the more negative direction.

Based on these plant conditions, which ONE of the following choices describes the trend of PZR level and the reason for this trend?

a. PZR Level is trending upward due to voiding in the Rx Vessel Head.

b. PZR Level is trending upward due to SI Accumulator water injection.

c. PZR Level is trending downward due to voiding in the Rx Vessel Head.

d. PZR Level is trending downward due to SI Accumulator nitrogen injection.

QUESTION: 024 (1.00)

According to AOP-8A, "High Reactor Coolant Activity," an alarm from which of the following would be a symptom or entry condition into this procedure?

a. Unit 2 Condenser Air Ejector Gas Monitor (2RE-215).

b. Failed Fuel Monitor (2RE-109).

c. Waste Disposal System Liquid Monitor (RE-218).

d. Steam Generator Blowdown Tank Area Monitor (2RE-222).

QUESTION: 025 (1.00)

Which one of the following statements correctly identifies and supports the BASIS for verifying a reactor trip in EOP-0, "Reactor Trip or Safety Injection?"

a. Subcriticality is the highest priority critical safety function and is addressed as the first step of this procedure.

b. Without a reactor trip, plant safety limits will be exceeded which will ultimately result in endangering the health and safety of the public.

c. The safeguards systems that protect the plant during accidents are designed assuming only decay heat and pump heat are being added to the reactor coolant system.

d. Without a reactor trip, a transition to CSP-S.1, "Response to Nuclear Power Generation/ATWS," must immediately occur to provide acceptable consequences for the limiting core over-power event.

QUESTION: 026 (1.00)

With the RCS at normal operating pressure and temperature, what is the condition of the steam entering the PRT if a PORV opens? (ASSUME: PRT is at 100°F, 5 psig: an ideal thermodynamic process.)

a. Superheated steam at 635°F.

b. Superheated steam at 313°F.

c. Saturated steam-water mixture at 213°F.

d. Saturated steam-water mixture at 228°F.

QUESTION: 027 (1.00)

In EOP-0, "Reactor Trip or Safety Injection," the reactor coolant pumps are required to be tripped if at least one safety injection pump is running and capable of delivering flow AND RCS subcooling is less than [60°F] 30°F based on core exit thermocouples AND an operator controlled cooldown is not in progress.

The basis for this action is . . .

a. to allow the steam generator tubes to drain and provide RCS inventory to the core.

b. to prevent reactor coolant pump damage from cavitation due to operation with two phase flow.

c. to prevent damage to the reactor coolant pump seal stack which could result in additional mass loss from the RCS.

d. to avoid the excessive RCS inventory loss that would occur if the reactor coolant pumps were left running and then tripped later in a small break LOCA event.

QUESTION: 028 (1.00)

Operators are responding to a small break LOCA on Unit 1. While completing the first pass through EOP-1.2, "Small Break LOCA Cooldown and Depressurization," 'A' SI pump was stopped as directed, but pressurizer level did not allow securing the second SI pump. While depressurizing the RCS to raise pressurizer level above 34%, subcooling momentarily drops to 32°F before the spray valve is shut.

Which one of the following actions should be taken?

a. Manually actuate SI.

b. Start the 'A' SI pump only until subcooling is restored, then stop it.

c. Start the 'A' SI pump and leave it running until SI reduction or termination criteria are satisfied.

d. Wait and see if subcooling recovers after the spray valve goes shut. If subcooling recovers, then no action is needed.

QUESTION: 029 (1.00)

Given the following plant conditions:

- Unit 1 was operating at steady state 100% power.
- A plant trip and safety injection have occurred due to a LOCA outside containment.
- All applicable procedures have been implemented.
- The LOCA has NOT been isolated and ECA-1.1, "Loss of Containment Sump Recirculation," has been implemented.

Which one of the following states the Reason ECA 1.1 directs establishing only one train of SI flow under these conditions?

a. To allow initiating blended makeup flow to the suction of the charging pumps.

b. To reduce the RCS cooldown rate to less than 100°F/hr when dumping steam at maximum rate.

c. To reduce the RWST level reduction rate and delay stopping all pumps pumping from the RWST.

d. To allow continuing attempts to open the Sump 'B' to RHR isolation valves for the idle RHR pump.

QUESTION: 030 (1.00)

The following plant conditions are given:

- Unit 1 is at 100% full rated power.
- The Control Room Team has entered AOP-1A due to indications of a RCS leak.
- In accordance with this procedure, letdown and charging are isolated to determine leak location.
- No other operator actions are taken.
- The RCS total leak rate is 100 gpm.

Based on these conditions and given the attached reference from the Tank Level Book, what is the maximum time the Control Room Team can operate in this condition before Pressurizer Level reaches a Reactor Trip Setpoint or Reactor Trip criteria?

a. 3 minutes.

b. 6 minutes.

c. 16 minutes.

d. 23 minutes.

QUESTION: 031 (1.00)

Given the following Unit 1 plant conditions:

- Unit 1 is in Mode 5 with RHR Cooling in progress.
- The RCS is solid
- RHR flow is lost and CANNOT be restored.
- All other systems and components are available.

Which one of the following methods of cooling will be utilized to remove the core decay heat?

a. Feed the RCS with Safety Injection and use letdown to remove decay heat.

b. Start a charging pump with flow through an RHR heat exchanger, and initiate hot leg injection.

c. Start a charging pump with flow through an RHR heat exchanger, and initiate cold leg injection.

d. Feed a S/G using an AFW pump, and bleed steam through the respective S/G atmospheric dump valve.

QUESTION: 032 (1.00)

Given the following plant conditions:

- Operators have diagnosed a Steam Generator Tube Rupture.
- The control room team has entered EOP-3, "Steam Generator Tube Rupture."
- Due to a Pressurizer Pressure Controller Malfunction, normal spray is unavailable for RCS depressurization.

According to the EOP basis, why are the PORVs the next preferred method of RCS depressurization prior to using auxiliary spray?

a. Reactor coolant inventory would be conserved.

b. RCS depressurization and equalization is slower.

c. Upper head region voiding is less likely to occur.

d. Pressurizer spray nozzle failure is less likely to occur.

QUESTION: 033 (1.00)

Given the following plant conditions:

- A Unit 1 reactor startup is in progress.
- Criticality has been achieved and power stabilized at 5.0E-10 amps on the intermediate range, 1E5 cps on the source range.
- After verifying proper SR/IR overlap, the alarm "1N-31 or 32 Source Range Loss of Detector Voltage," illuminates.
- Investigation indicates that the alarm is valid and the affected instrument is 1N-31.

Which one of the following correctly describes the Technical Specifications requirements for these plant conditions?

a. Restore the channel to operable status within 48 hours OR open the reactor trip breakers within 49 hours.

b. Reduce thermal power to less than P-6 OR increase thermal power to greater than P-10 within 24 hours.

c. Suspend operations involving positive reactivity additions IMMEDIATELY.

d. No actions are required by Technical Specifications.

QUESTION: 034 (1.00)

The following plant conditions exist:

- A Unit 2 Reactor Startup in accordance with OP-1B, "Reactor Startup," is in progress following an extended outage.
- During the course of the startup, the CO notes that neither channel of Intermediate Range Nuclear Instrumentation is responding.

Which one of the following choices indicates the reason that a power reduction is required?

a. Protection against a cold water accident is reduced.

b. Protection against a rod ejection accident is reduced.

c. Protection against a steam line break accident is reduced.

d. Protection against an uncontrolled RCCA bank rod withdrawal is reduced.

QUESTION: 035 (1.00)

Unit 1 is shutting down from 100% power in response to a steam generator tube leak. What would be the expected trend of chemistry leak rate calculations during the shutdown and why? (Assume the flaw size remains constant.)

a. Leakage would increase because air ejector flow rate would decrease.

b. Leakage would remain the same because isotopes analyzed are independent of power.

c. Leakage would decrease because primary to secondary pressure difference is reduced.

d. Leakage cannot be determined accurately when power is being changed due to iodine spiking.

QUESTION: 036 (1.00)

The crew is responding to a ruptured steam generator (S/G) in 2A S/G using EOP-3, "Steam Generator Tube Rupture," with the following conditions:

- 2A S/G Pressure is 700 psig.
- 2B S/G Pressure is 500 psig.
- RCS Cooldown is in progress.
- Both SI pumps are running.

Which one of the following is the HIGHEST indicated core exit temperature that assures 20°F subcooling will exist, including instrument inaccuracies of 35°F, after subsequent RCS depressurization?

a. 430°F

b. 450°F

c. 465°F

d. 485°F

QUESTION: 037 (1.00)

A plant startup is in progress with the following conditions:

- Unit 1 Reactor Power is 25%
- Generator Output Breaker is closed.
- Main Feedwater Pump 1P-28A is running in a single feedwater train configuration.

If a trip of 1P-28A occurs, how will the Auxiliary Feedwater System respond?

a. Both MDAFW Pumps and the TDAFW Pump will start after a 30 second time delay.

b. Neither MDAFW Pump will start. The TDAFW Pump will start when level in either S/G drops below 25%.

c. Both MDAFW Pumps will start immediately. The TDAFW Pump will start when both S/G levels drop below 25%.

d. Both MDAFW Pumps will start when either S/G level drops below 25%. The TDAFW Pump will start when both S/G levels drop below 25%.

QUESTION: 038 (1.00)

Given the following conditions on Unit 2:

- The plant was operating at 100% power.
- A plant trip occurred due to a loss of main feedwater.
- AFW flow is lost and cannot be re-established.
- CSP-H.1, "Response to Loss of Secondary Heat Sink," has been implemented.
- Both S/G wide range levels are 55 inches, slowly lowering and feed flow is not restored.

Which ONE of the following actions must be performed in accordance with CSP-H.1?

a. Dump steam from both S/Gs at the maximum rate.

b. Initiate safety injection and then open the pressurizer PORVs.

c. Depressurize one S/G to allow condensate pumps to supply it.

d. Open the pressurizer PORVs, and then initiate safety injection.

QUESTION: 039 (1.00)

The following plant conditions exist:

- Following a capacity test, Battery Charger D-108 is re-aligned to DC Bus D-04.
- A supervisory review of the D-108 Battery Charger capacity test has discovered that 6 hours after starting the test, battery charger output dropped to 123 volts. (assume this discovery is concurrent with the D-108 re-alignment to D-04)

Based on this information and Technical Specifications (TS), which of the following choices is the correct course of action?

a. DC Bus D-04 is operable and no TS action is required.

b. Declare DC Bus D-04 inoperable and restore it to operable status within 2 hours.

c. DC Bus D-04 can be considered operable if an Operability Determination is completed.

d. Declare DC Bus D-04 inoperable, immediately declare associated, supported, required features inoperable, and restore D-04 to operable status within 2 hours.

QUESTION: 040 (1.00)

Given the following plant conditions:

- A large break loss of coolant accident occurred about 15 minutes ago.
- During the initial phases of the accident, containment pressure peaked at 15 psig and radiation peaked at 10E6 R/hr.
- Containment pressure has just lowered to 4.5 psig and containment radiation levels to 8E4 R/hr.

Select the correct response concerning the use of adverse numbers during this accident.

a. The use of adverse containment numbers is still required until containment pressure is less than 1 psig.

b. The use of adverse containment numbers was never required because neither adverse containment criterion was exceeded.

c. The use of adverse containment numbers is still required until relaxed by Technical Support Center personnel.

d. The use of adverse containment numbers was required initially but is no longer necessary because containment pressure and radiation are both below the adverse containment criteria.

QUESTION: 041 (1.00)

Given the following plant information:

- Unit 1 is at Full Rated Power.
- The CO notes 1LI-428 Pressurizer Level channel (blue channel), has failed low.
- The CO also notes 1C04 1C 2-3, "PRESSURIZER LEVEL SETPOINT DEVIATION" is in alarm.

Based on these plant conditions and alarms, what are the indications you expect to see for the following items:

	Charging Pump Speed	PZR Proportional Heaters	Letdown Flow
a.	LOWERING	ON	IN SERVICE
b.	LOWERING	OFF	ISOLATED
c.	RISING	OFF	ISOLATED
d.	RISING	ON	IN SERVICE

QUESTION: 042 (1.00)

Several interlocks have been designed into the manipulator crane used for fuel handling operations.

According to the FSAR, what is the reason for the interlocks associated with the manipulator crane?

a. They provide additional protection during RCCA unlatching operations.

b. They ensure the worst case fuel handling accident cannot occur, thus ensuring 10CFR100 limits are not exceeded.

c. They provide sole protection in the event of a maximum potential earthquake.

d. They provide additional safety features and physical limitations on fuel handling operations.

QUESTION: 043 (1.00)

Given the following plant conditions:

- Both units have been operating at 100% power for greater than 100 days.
- All plant systems are in a normal alignment, except 1P- 29, Unit 1 Turbine Driven Auxiliary Feedwater Pump, has been out of service for 32 hours for bearing replacement.
- A complete loss of off-site power on Unit 1 occurs due to severe weather conditions.
- Emergency Diesel Generator G-01 fails to start.

While stabilizing the plant in Mode 3 (Hot Standby), manual control of the auxiliary feedwater system is established for steam generator level control.

Assuming no other operator actions and based on the above conditions, which one of the following statements is correct regarding the operational status of P-38A and P-38B, Motor Driven Auxiliary Feedwater Pumps?

a. Only P-38A may be considered operable.

b. Only P-38B may be considered operable.

c. Both P-38A and P-38B may be considered operable.

d. Both P-38A and P-38B must be considered inoperable.

QUESTION: 044 (1.00)

Given the following plant conditions:

- Unit 2 is operating at 90% Reactor Power.
- Rod Control is in automatic with Bank 'D' Control Rods at 210 steps.
- A Turbine Runback occurs for one minute.

After plant conditions have stabilized, which ONE of the following choices correctly reflects control rod position and axial flux response?

	CONTROL ROD POSITION	AXIAL FLUX
a.	Lower in the core	Lower in the core
b.	Lower in the core	Higher in the core
c.	Higher in the core	Lower in the core
d.	Higher in the core	Higher in the core

QUESTION: 045 (1.00)

Given the following plant conditions:

- Unit 1 operating at full licensed power.
- The control room operator inadvertently turns the control switch for Reactor Coolant Pump 1P-1A to STOP.
- Assume no other operator action and that the plant functions as designed.

Analyze the following responses and predict which is correct regarding expected Unit 1 parameter response over the next one minute time period.

	Total RCS Flow	S/G Pressures	Pressurizer Level
a.	Decreases	Increase	Decreases
b.	Decreases	Remains the Same	Decreases
c.	Remains the Same	Increases	Increases
d.	Decreases	Increases	Remains the Same

QUESTION: 046 (1.00)

Which ONE of the following describes the indications that would be seen if the air line that supplies Instrument Air to 1CV-142, the charging line flow control valve, catastrophically ruptured?

a. 1CV-142 would fail open and cause Reactor Coolant Pump seal water flow to lower.

b. 1CV-142 would fail open and cause Reactor Coolant Pump seal water flow to rise.

c. 1CV-142 would fail closed and isolate Reactor Coolant Pump seal flow, while maximizing charging.

d. 1CV-142 would fail closed and cause the discharge reliefs on the charging pumps to lift, and Reactor Coolant Pump seal water injection flow to remain essentially the same.

QUESTION: 047 (1.00)

Given the following plant conditions:

- Unit 1 is at 100% power with all control systems in automatic.
- A controller malfunction causes the charging line control valve (1CV-142) to go CLOSED.
- The valve will not respond to any control operator actions.
- The bypass valve around 1CV-142 (1CV-323B) CANNOT be opened.

As SRO, which one of the following course of actions should be taken for continued plant operation?

a. Secure letdown, go to one charging pump at reduced speed, and establish excess letdown.

b. Secure letdown, go to one charging pump at minimum speed, then reduce reactor power to 15% at the normal ramp rate of 15%/hr.

c. Establish an auxiliary charging flowpath, maintain normal letdown on one orifice, and maintain a normal charging pump combination.

d. Verify CCW flow through the RCP thermal barrier heat exchanger greater than 25 gpm, verify RCP seal leakoff less than 5 gpm, and secure letdown and all operating charging pumps.

QUESTION: 048 (1.00)

Given the following plant conditions:

- You are the DOS and have just assumed the watch for a normal 8 hour shift.
- I & C testing is in progress.
- Unit 1 is operating at full power.
- CO1 B 2-5 (Unit 1 Containment Isolation annunciates.
- All of the lights on the Unit 1 Containment Isolation Panel 'A' and 'B' are lit EXCEPT for 1CV-313A and 1CV-313, 1P-1A/B RCP #1 Seal Water Return Isolation valves.
- AOP0-27, "Recovery From Inadvertent Containment Isolation," has been completed.

Which one of the following actions will ensure compliance with Technical Specifications during the remainder of your shift? (Note: All times below are referenced from the time of the initial alarm.)

a. Manually close and deactivate 1CV-313 within 1 hour.

b. Place the plant in Mode 3 within 8 hours.

c. Manually close and deactivate both 1CV-313A and 1CV-313 within 4 hours.

d. Manually close and deactivate 1CV-313A within 4 hours.

QUESTION: 049 (1.00)

Unit 2 was initially at 100% power and after an initiating event, the following plant conditions exist:

- Unit 2 'A' Steam Generator Narrow Range Level is 10% and lowering.
- Unit 2 'A' Steam Generator pressure is 400 psig and lowering.
- Unit 2 Containment Pressure is 2.1 psig and lowering.
- 4.16 kV Bus 2A05 indicates zero volts on C-02.

What is the status of Unit 2 Emergency Core Cooling System (ECCS) equipment?

a. All ECCS equipment is operating.

b. None of the ECCS equipment is operating.

c. Only 'A' Train ECCS equipment is operating.

d. Only 'B' Train ECCS equipment is operating.

QUESTION: 050 (1.00)

Which one of the following instrument failures would directly cause a change in the rod insertion limits?

a. A THOT RTD failing HIGH.

b. Impulse pressure failing HIGH.

c. A Power Range NIS channel failing HIGH.

d. A pressurizer pressure channel failing LOW.

QUESTION: 051 (1.00)

The following Unit 1 conditions exist:

- Procedure in effect: OP-3B, "Reactor Shutdown."
- N-35: 2E-11 amps
- N-36: 3E-9 amps

The RO depresses the intermediate range permissive defeat push buttons, which results in a SR HIGH FLUX reactor trip.

Which one of the following conditions for N-35 and N-36 would have caused this event?

a. N-35 properly compensated
N-36 overcompensated

b. N-35 overcompensated
N-36 properly compensated

c. N-35 properly compensated
N-36 undercompensated

d. N-35 undercompensated
N-36 properly compensated

QUESTION: 052 (1.00)

Given the following plant conditions:

- Unit 2 has tripped due to a Small Break LOCA.
- RCS subcooling is 10°F
- In-Core Thermocouples are reading 595°F and stable
- SI Pumps are running at shutoff head.
- Operator are currently entering EOP-1.2, "Small Break LOCA Cooldown and Depressurization."

Based on these conditions, which one of the following choices describes the RCS cooling conditions?

a. Reflux Cooling.

b. Natural Circulation Cooling.

c. Normal Forced RCS Cooling.

d. Inadequate Natural Circulation Cooling

QUESTION: 053 (1.00)

Given the following plant conditions:

- Unit 1 Reactor/Turbine tripped from 100% power on Low PZR Pressure.
- A Design Basis LOCA has occurred.
- Subcooling margin is less than 0°F.
- 4.16 kV AC Bus 1A05 indicates 0 volts.
- PZR Level is 0%.
- 1SW-2907, "Containment Ventilation Cooler Outlet Emergency Flow Control Valve," cannot be OPENED.
- Operators are responding using EOP-0, "Reactor Trip or Safety Injection."
- Assume all other equipment is functioning normally.

Which one of the following statements is correct with respect to the above conditions? (CSP-Z.1, "Response to High Containment Pressure.")

a. It is unlikely adverse Containment conditions exist, operators will continue in EOP-0.

b. Containment design pressure will be exceeded, operators will need to transition to CSP-Z.1.

c. Containment pressure will not exceed 25 psig, entry conditions for CSP-Z.1 will not be met.

d. Containment pressure will not exceed design pressure, entry conditions for CSP-Z.1 will be met.

QUESTION: 054 (1.00)

Containment Spray Pumps are designed to protect the Containment Structure against overpressure conditions. In addition, Sodium Hydroxide is injected into the Spray system for introduction into the Containment environment in order to maintain Containment Sump 'B' pH.

What is the reason for controlling the pH?

a. Maintains Iodine in solution.

b. Maintains Hydrogen in solution.

c. Reduces Iodine concentration in solution.

d. Reduces Hydrogen concentration in solution.

QUESTION: 055 (1.00)

The following sequence of events:

- Unit 1 is operating at 100% power.
- 1P-10A RHR Pump is tagged out for seal replacement.
- A large break LOCA occurs on Unit 1.
- The 'B' SI/RHR train has been fully aligned and placed on containment sump recirculation.
- The 'B' RHR pump (1P-10B) then fails.
- No foldout page criteria for securing ANY pumps has been met.
- Containment Pressure is 55 psig.

Given the attached reference from ECA 1.1, which one of the following is the correct combination of Containment Recirculation Fans and Containment Spray Pumps to operate under these conditions?

a. 1 Accident Fan, no Spray Pump.

b. 2 Accident Fans, 2 Spray Pumps.

c. 3 Accident Fans, 1 Spray Pump.

d. 4 Accident Fans, 0 Spray Pumps.

QUESTION: 056 (1.00)

Given the following plant conditions:

- Unit 2 is operating at 100% power.
- Condensate Pump 2P-25A trips.
- Assume no operator actions are taken.

Which one of the following is correct regarding the status of the Main Feedwater system 5 minutes after the condensate pump trip?

a. All Main Feedwater Pumps and Heater Drain Tank Pumps are tripped due to a Safety Injection signal.

b. Both Main Feedwater Pumps are tripped due to low suction pressure.

c. Both Main Feedwater Pumps are running and Low Pressure Feedwater Heater Bypass Valve (2CS-2237) is open.

d. Both Main Feedwater Pumps are tripped due to a loss of seal water.

QUESTION: 057 (1.00)

The following plant conditions exist:

- Unit 2 is at 10% power.
- The Control Operator is focused on numerous start-up tasks which results in the 'A' Steam Generator (S/G) water level reaching 80%.
- Both S/Gs are being controlled in manual on the Feedwater Regulating Valve Bypasses.

Which one of the following choices correctly reflects how the control room operator will recover S/G water level to normal programmed level?

a. Place the S/G 'A' Feedwater Regulating Valve Bypass in AUTO.

b. No action is necessary, the system will automatically compensate.

c. Close the 'A' Feedwater Regulating Valve Bypass until normal level is obtained and then adjust accordingly.

d. Push the S/G 'A' Feedwater Regulating Valve Bypass Reset pushbutton when level is below 78% and adjust accordingly until normal level is obtained.

QUESTION: 058 (1.00)

The turbine-driven auxiliary feedwater pump trips on low suction pressure and the low suction pressure condition has NOT cleared.

Which one of the following statements describes the operator action required to restart the pump?

a. Place the control switch for the Low Suction/Overspeed Trip Valve Reset Operator (MS-2082) in the CLOSE position, then the OPEN position.

b. Locally reset the low suction pressure trip while the Low Suction/Overspeed Trip Valve Reset Operator (MS-2082) is CLOSED, then select AUTO.

c. Place the control switches for the steam supply MOVs (MS-2019 & 2020) in the CLOSE position, then place in the OPEN position, then leave in AUTO.

d. Place the control switch for the Low Suction/Overspeed Trip Valve Reset Operator (MS-2082) in the OPEN position, then the CLOSE position, then the OPEN position.

QUESTION: 059 (1.00)

According to AOP 0.0, "Vital DC System Malfunction," a loss of which one of the following would cause a DUAL UNIT TRIP?

a. D01

b. D13

c. D18

d. D21

QUESTION: 060 (1.00)

Which one of the following events will occur on a high alarm on RE-223, "Waste Distillate Discharge Liquid Process Monitor?"

a. Indication only - no automatic actions, manual action is required.

b. RCV-018, "Waste Liquid Overboard Valve," receives a CLOSE signal.

c. FCV-LW-15, "Waste Distillate Overboard Valve," receives a CLOSE signal.

d. FCV-LW-15, "Waste Distillate Overboard Valve," and RCV- 018, "Waste Liquid Overboard Valve," receive a CLOSE signal.

QUESTION: 061 (1.00)

While performing a gas decay tank discharge, what would be the effect if WG-14, "Radiation Control Valve," supply air line ruptured? (Assume no other plant evolutions are in progress.)

a. WG-14 fails open, discharge would secure, vent stack radiation would decrease.

b. WG-14 fails shut, discharge would secure, vent stack radiation would decrease.

c. WG-14 fails shut, discharge would continue, vent stack radiation would increase.

d. No effect, discharge would continue, vent stack radiation would remain the same.

QUESTION: 062 (1.00)

While removing a source, RP personnel drop it on the floor 10 ft. from an area monitor. If this area monitor is reading 2 R/hr, what is the approximate dose rate 1 ft. from the dropped source?

a. 20 R/hr.

b. 200 R/hr.

c. 2000 R/hr.

d. 20000 R/hr

QUESTION: 063 (1.00)

Given the following plant conditions:

- Unit 1 is at 100% power. All plant controls are in a normal full power alignment.
- A maintenance activity has just resulted in an inadvertent start of 1P-29, Turbine Driven Auxiliary Feedwater Pump.
- 1P-29 has reached rated speed and is injecting to both Steam Generators.

Under these conditions, which one of the following is correct regarding the response of the secondary coolant system (Main Feedwater) and resulting response of the primary coolant system?

a. Main Feedwater Pump suction flow will rise, actual reactor thermal power will lower.

b. Main Feedwater Pump suction flow will lower, indicated reactor thermal power will rise.

c. Main Feedwater Pump suction flow will rise, indicated reactor thermal power will lower.

d. Main Feedwater Pump suction flow will lower, actual reactor thermal power will rise.

QUESTION: 064 (1.00)

Which one of the following statements describes the interlock/system configuration associated with Unit 2 SI Test Line Return Isolation Valves (2SI-897A and B)?

a. These valves are air-operated and fail shut on a loss of instrument air.

b. These valves cannot be opened unless 'A' or 'B' RHR pump suction from sump 'B' MOV (2SI-851A and B) are full open.

c. Both valves must be full closed to open 'A' or 'B' RHR pump suction from sump 'B' MOV (2SI-851A and B).

d. Either valve must be full closed to open 'A' or 'B' RHR pump suction from sump 'B' MOV (2SI-851A and B).

QUESTION: 065 (1.00)

Given the following plant conditions:

- Unit 1 reactor operating normally at 100% power.
- A safety injection is inadvertently initiated.
- No LOCA exists and all equipment functions as designed.
- No operator actions are taken.

Which one of the following correctly describes reactor coolant system (RCS) pressure response and the cause of this response?

a. RCS pressure will INCREASE to the pressurizer PORV setpoint and be maintained there by PORV operation.

b. RCS pressure will DECREASE due to cooldown, then INCREASE due to pressurizer heater actuation.

c. RCS pressure will DECREASE due to cooldown, then INCREASE to normal operating pressure due to safety injection.

d. RCS pressure will INCREASE to shut-off head of the safety injection pumps, then DECREASE due to pressurizer spray actuation.

QUESTION: 066 (1.00)

Given the following plant conditions:

- Unit 1 is at 100% power, steady state conditions.
- An internal failure associated with Master Pressurizer Pressure Controller PC-431K has caused both Unit 1 pressurizer spray valves to open approximately 25%.
- All pressurizer pressure channels indicate a lowering pressurizer pressure.

Which one of the following choices is correct regarding the initial response of the pressurizer level control system to this failure and the procedure used to mitigate this transient? (AOP-24, "Response to Instrument Malfunctions")

a. Charging pump speed will rise due to lowering pressurizer level, AOP-24 can be used to address the failure of the controller.

b. Charging pump speed will lower due to rising pressurizer level, AOP-24 can be used to address the failure of the controller.

c. Charging pump speed will rise due to lowering pressurizer level, AOP-24 cannot be used since a controller has failed, not an instrument.

d. Charging pump speed will lower due to rising pressurizer level, AOP-24 cannot be used since a controller has failed, not an instrument.

QUESTION: 067 (1.00)

With reactor power at 100%, the THOT transmitter TE-401A fails LOW.

Which one of the following describes the effects of this failure on the corresponding T_{AVG} and Delta-T indications which provide input to RPS?

	T_{AVG}	Delta-T
a.	Increases	Increases
b.	Decreases	Increases
c.	Increases	Decreases
d.	Decreases	Decreases

QUESTION: 068 (1.00)

Which one of the following describes the design usage of the Hydrogen Recombiners following a Loss of Coolant Accident (LOCA)?

a. The recombiners are designed to remove hydrogen released into the containment from all sources following a DBA LOCA. They can be safely operated at all containment hydrogen concentrations.

b. The recombiners are designed to remove hydrogen released into the containment from all sources following a DBA LOCA. They can be safely operated only when containment hydrogen concentration is less than 5%.

c. The recombiners are designed to rapidly remove the hydrogen generated by the zirconium-water reaction during inadequate core cooling conditions. They can be safely operated at all containment hydrogen concentrations.

d. The recombiners are designed to rapidly remove the hydrogen generated by the zirconium-water reaction during inadequate core cooling. They can be safely operated only when containment hydrogen concentration is less than 5%.

QUESTION: 069 (1.00)

Unit 2 is in the middle of refueling (core load in progress). A power supply failure has resulted in the de-energization of SPING 22, the Unit 2 Containment Purge Exhaust SPING.

What effect will this have on the Containment Ventilation System?

a. No effect since the unit is in refueling (Mode 6).

b. The Radiation Monitoring System will automatically initiate a Containment Isolation (CI) signal to cause the Containment Ventilation System to isolate.

c. The Radiation Monitoring System will automatically shut the Purge Supply and Exhaust valves, which in turn causes the Purge Supply and Exhaust fans to trip off.

d. The Radiation Monitoring System will automatically shut the Purge Supply and Exhaust valves, but the Purge Supply and Exhaust fans must be manually secured from the Control Room.

QUESTION: 070 (1.00)

A complete loss of spent fuel pool (SFP) has occurred due to mechanical failure of both SFP pumps. The control room crew is currently implementing AOP-8F, "Loss of SFP Cooling." SFP level is currently normal.

Which one of the following methods of SFP additional cooling is NOT a method available for the DSS to use at his discretion?

a. Establish SFP area ventilation by starting all drumming area supply and exhaust fans and the spent fuel pool supply fans.

b. Open the SFP transfer canal doors to raise the SFP heat transfer to ambient.

c. "Bleed & Feed" the SFP by adding service water or fire water via hoses while draining SFP water to a floor drain.

d. Recirculate the SFP transfer canal to the SFP using P-9 in order to raise heat losses to ambient.

QUESTION: 071 (1.00)

Chapter 14 of the FSAR provides an analysis of an off-loaded fuel assembly which is dropped onto the floor of the spent fuel pool.

Which one of the following choices describes the outcome of this analysis? (Assume that only the dropped fuel assembly is affected.)

a. Re-criticality hazards would be presented and site boundary radiation levels could exceed 10CFR100 limits.

b. No criticality hazard would be presented and site boundary radiation levels would not exceed 10CFR100 limits.

c. No criticality hazard would be presented, however, site boundary radiation levels could exceed 10CFR100 limits.

d. Re-criticality hazards would be presented, however, site boundary radiation levels would not exceed 10CFR100 limits.

QUESTION: 072 (1.00)

Given the following plant conditions:

- Turbine load is at 100%.
- CS-2273, "LP Feedwater Heater Bypass Valve" opens.

How and why will reactor power respond to this condition?

a. Reactor power will remain constant, the plant is designed to operate with one #5 Feedwater Heater bypassed.

b. Reactor power will increase due to the colder water entering the steam generators causing TCOLD to drop; MTC will add positive reactivity.

c. Reactor power will increase for a very short time due to MTC adding negative reactivity, but then decrease as the steam generator pressure increases.

d. Reactor power will decrease due to the decrease in steam generator pressure caused by the colder feedwater entering the feed ring. Less reactor power is needed to produce steam.

QUESTION: 073 (1.00)

Which one of the following describes the location of the radiation monitors used to detect Unit 1 Main Steam System radiation (1RE-231 and 1RE-232)?

a. On the safety valve outlets.

b. On the line upstream of the MSIVs.

c. On the line downstream of the atmospheric steam dumps.

d. On the main steam equalizing header downstream of the MSIVs.

QUESTION: 074 (1.00)

Both units are at rated power with all controls in automatic. Power is lost to all of the Unit 1 safeguards buses and the normal supply breaker to 1A06 fails closed.

What effect would this have on emergency diesel generator operations?

a. All EDGs would start, but only G03 would supply its respective bus.

b. All EDGs would start, but only G01 would supply its respective bus.

c. Only G01 and G03 would start, and both would supply their respective buses.

d. All EDGs will start and both G01 and G03 will power their respective buses.

QUESTION: 075 (1.00)

The following plant conditions exist:

- Both Units are at 100% power in Mode 1.
- G04 EDG is tagged out due to fuel oil contamination discovered in the G04 EDG Day Tank (T-178B).
- G04 EDG Day Tank (T-176B) is drained.
- G03 EDG is aligned to 4.16 kV buses 1A06 and 2A06 per OI-35.
- A fault occurs on Low Voltage Station Transformer 2X04.
- All systems function normally with the exception that G03 EDG fails to start due to a major mechanical failure.
- Operations personnel are attempting to restore G04EDG to service.

Which one of the following is correct with respect to the fuel oil supply for the G04 EDG?

a. G04 EDG Fuel Oil Transfer Pump (P-207B) CAN be used to refill the G04 Day Tank (T176B) since P-207B is powered from 480 V MCC 2B40.

b. G04 EDG Fuel Oil Transfer Pump CANNOT be used to refill the G04 Day Tank since P-207B is powered from 480 V MCC 1B40.

c. G04 EDG Fuel Oil Transfer Pump CANNOT be used to refill the G04 Day Tank since P-207B is powered from 480 V MCC 2B40.

d. G04 EDG Fuel Oil Transfer Pump CAN be used to refill the G04 Day Tank since P-207B is powered from 480 V MCC 1B40.

QUESTION: 076 (1.00)

Both units are in a nromal at-power lineup and the following occurs:

- A Unit 1 letdown line leak develops in the Non-Regenerative Heat Exchanger cubicle.

Which one of the following pairs of radiation monitors would first detect this radioactive release?

a. RE-214 (Aux Building Exhaust Vent Noble Gas Monitor)
RE-315 (Aux Building SPING Low Range Gas Monitor)

b. RE-325 (Drumming Area Ventilation Noble Gas Monitor)
RE-315 (Aux Building SPING Low Range Gas Monitor)

c. RE-214 (Aux Building Exhaust Vent Noble Gas Monitor)
1RE-305 (Unit 1 Purge Exhaust Noble Gas Monitors)

d. RE-325 (Drumming Area Ventilation Noble Gas Monitor)
RE-224 (Gas Stripper Building Exhaust Noble Gas Monitor)

QUESTION: 077 (1.00)

Given the following plant conditions:

- Unit 2 has recently returned to 100% power following a refueling outage.
- The Control Room has received several annunciators causing the crew to enter AOP-5B, "Loss of Instrument Air."
- All Service Air and Instrument Air compressors are running, however, Instrument Air pressure still cannot be restored greater than 80 psig.

Based on these conditions, what is the expected response based on design features of the service air and instrument air systems?

a. Only Instrument Air back-up valves (IA-3079/3014) have opened.

b. Only Instrument Air dryer bypass valves (IA-3094-S/3000-S) have opened.

c. Both Instrument Air back-up valves (IA-3079/3014) and Instrument Air dryer bypass valves (IA-3094-S/3000-S) have opened.

d. Neither Instrument Air back-up valves (IA-3079/3014) or Instrument Air dryer bypass valves (IA-3094-S/3000-S) have opened.

QUESTION: 078 (1.00)

CSP-H.1, "Response to Loss of Secondary Heat Sink," directs that AFW be established to restore cooling to the S/Gs.

Which one of the following choices describes the procedural options to restore a suction source to the AFW pumps?

a. Condensate Storage Tank (CST), service water, fire water.

b. CST, condenser hotwell, fire water.

c. Main feedwater, CST, service water.

d. Main feedwater, fire water, condenser hotwell

QUESTION: 079 (1.00)

Following a reactor trip on Unit 1, the following indications are noted:

-	SW flow to air cooling units	-	980 gpm
-	Containment area radiation elevation 66' RE102	-	28 mR/hr
-	Containment Pressure	-	25 psig
-	Containment 'A' sump level	-	100%

Based on the indication given and assuming all systems are in AUTO and function as designed . . . .

a. CI should have occurred, MSIVs should have shut.

b. CI should NOT have occurred, MSIVs should have shut.

c. CI should have occurred, MSIVs should remain open.

d. CI should NOT have occurred, MSIVs should remain open.

QUESTION: 080 (1.00)

While in SEP-1, "Degraded RHR System Capability," you have completed suction refill of the RHR pumps and restarted the previously running pump. You note erratic operation after the pump start.

In accordance with SEP-1, which one of the following is your next action?

a. Secure the pump immediately as required.

b. Immediately start the other idle RHR pump.

c. Continue to operate the pump as this response is expected.

d. Continue to operate the pump for up to 2 minutes. If erratic operation continues, secure the pump.

QUESTION: 081 (1.00)

Given the following plant conditions:

- Unit 2 is in cold shutdown.
- Reactor coolant system draindown is in progress, Cold Calibration Pressurizer level indication is 60% and slowly lowering.
- OP-4D Part 1, "Draining the Reactor Coolant System," is the procedure in effect.

Which one of the following is correct regarding the current line-up of the Pressurizer Relief Tank (PRT)?

a. A manual vent valve is opened, venting the PRT directly to the Containment atmosphere to provide a backfill source to the pressurizer as level is lowered.

b. The PRT is vented directly to purge exhaust to provide a backfill source to the pressurizer as level is lowered.

c. The PRT is aligned to the Nitrogen Header, which provides a backfill source to the pressurizer as level is lowered.

d. The PRT rupture disk is removed, venting the PRT directly to the Containment atmosphere to provide a backfill source to the pressurizer as level is lowered.

QUESTION: 082 (1.00)

A single channel of the independent overspeed protection fails low.

What immediate effect does this have on turbine generator operation and how would the operators know of the failure?

a. The turbine will not trip, and the operator will have the "Turbine Overspeed Channel Alert" for indication of the failure.

b. The turbine will not trip, and the operator will have the "Turbine Stop Valve 1 of 2 Closed" for indication of the failure.

c. The turbine will trip and the operator would utilize the first out for "Turbine Overspeed" for indication of the failure.

d. The turbine will trip and the operator would utilize the first out for "Turbine Stop Valves Two Closed" for indication of the failure.

QUESTION: 083 (1.00)

The Instrument Air header has an unisolable repture in the line and air header pressure is slowly but steadily lowering.

Which one of the following events will eventually occur as a result of the lowering pressure? (ASSUME NO OPERATOR ACTION)

a. The main steam isolation valves will shut

b. RCP seal injection flow will go to maximum.

c. Charging pump 2P-2C will reduce speed to minimum.

d. Pressurizer pressure will decrease until the low pressure trip.

QUESTION: 084 (1.00)

Both Units are at 100% power. The mid-shift crew is at minimum shift crew composition per OM 3.1, "Operations Shift Staffing Requirements." At 0015, the third license (third RO) is required to leave due to an emergency at home.

Which one of the following actions, if any, must be taken?

a. No action is required as long as an individual holding an active RO license is assigned to each Unit.

b. The Duty Operations Supervisor (DOS) can assume the third license duties until the next shift arrives at 0650.

c. The Duty and Call Superintendent (DCS) must report to the Control Room until minimum staffing requirements are met.

d. The Shift Technical Advisor (STA) must report to the Control Room and shall remain there until minimum staffing requirements are met.

QUESTION: 085 (1.00)

Due to plant conditions requiring prompt actions to mitigate damage to the RCPs, an emergency temporary change is being considered to the EOP in use.

At a minimum, which one of the following requirements must be met?

a. An SRO must approve the actions and the DCS notified. The action, time they were performed, and the reason for the temp change must be logged, and a one hour notification to the NRC must be made.

b. The DCS and an SRO must approve the actions. The action cannot violate the intent of the procedure. The action taken and the reason must be logged, and a one hour notification to the NRC must be made.

c. An SRO must direct the actions taken. The actions are then logged with a reason given, approval by the DSS and a procedure feed back submitted as soon as possible for consideration of a permanent change to the procedure.

d. Cognizant group supervisor and an SRO must approve the actions. The action cannot violate the intent of the procedure. The actions taken and the reason for the actions must be logged. A Condition Report must be generated documenting the actions as soon as possible.

QUESTION: 086 (1.00)

You are assuming the midshift watch on Unit 2. Rod control is in MANUAL due to a failed T_{AVE}/T_{REF} comparator. Shortly after assuming the watch, you observe the following abnormal plant indicators:

- Reactor coolant system temperature has rapidly lowered approximately 2°F.
- 'A' & 'B' S/G level deviation annunciators on 2C03 are illuminated.
- Automatic charging pump speed is rising.
- Overpower Delta-T runback annunciator on 2C04 has illuminated.

Which one of the following events is the most likely cause of these indications?

a. Dropped control rod.

b. Excessive load increase.

c. Loss of normal feedwater.

d. Loss of external electrical load.

QUESTION: 087 (1.00)

The operators monitor parameters to ensure that the safety analysis assumptions for Shutdown Margin, Ejected Rod Worth, and Power Distribution Peaking Factors are preserved.

(QPTR - Quadrant Power Tilt Ratio)
(DNBR - Departure from Nucleate Boiling Ratio)
(AFD - Axial Flux Difference)
(CHF - Critical Heat Flux)

Which one of the following is a list of these operator monitored parameters?

a. QPTR, DNBR, AFD, and Rod Insertion Limits.

b. Rod Alignment Limits, CHF, AFD, QPTR.

c. Rod Insertion Limits, AFD, QPTR, Rod Alignment Limits

d. RCS Pressure, Rod Insertion Limits, Critical Boron Concentration, CHF.

QUESTION: 088 (1.00)

A temporary change to a safety related Operations procedure has been submitted. This temporary change requires a full 10CFR50.59/72.48 evaluation.

Which one of the following choices indicates the correct individual(s) and/or group(s) who must give FINAL review and approval PRIOR to use of the procedure?

a. Off-Site Review Committee (OSRC) and the Manager's Supervisory Staff (MSS).

b. Duty and Call Superintendent (DCS and the OSRC.

c. MSS and the Operations Manager.

d. Operations Manager and the DCS.

QUESTION: 089 (1.00)

Unit 2 has been operating at 50% power for several days due to 'A' Main Feedwater Pump, 2P-28A bein OOS for maintenance. A severe plant transient occurs. The result is several automatic trip signals being generated without the reactor trip breakers opening; however, a manual trip is successfully performed. After stabilizing the plant, a Post Trip Review indicated the following SIMULTANEOUS peak readings occurred during the transient:

- RCS Pressure - 2385 psig.
- Reactor Power - 52%
- RCS THOT - 670°F
- RCS TCOLD - 640°F
- Both RCPs are running

Given the attached TS 2.0 and COLR reference, which one of the following statements is correct?

a. No safety limits were exceeded.

b. The Reactor Core Safety Limit was exceeded.

c. The RCS Pressure Safety Limit was exceeded.

d. Both the Reactor Core and RCS Pressure Safety Limits were exceeded.

QUESTION: 090 (1.00)

Which one of the following events is considered to be the limiting event for operation of the Atmospheric Dump Valves?

a. small break loss of coolant accident.

b. steam generator tube rupture with a loss of offsite power.

c. large break loss of coolant accident.

d. steam generator tube rupture without a loss of offsite power.

QUESTION: 091 (1.00)

Operations and RP have just completed filling the spent resin High Integrity Container (HIC) with spent resin. The results of a subsequent radiation survey is as follows:

Top of shielded HIC by fill head: 2500 mr/hr on contact and 1200 mr/hr @ 30 cm
Sides of shield: 100 mr/hr on contact and 60 mr/hr @ 30 cm.

Which one of the following describes the required radiological postings?

a. The HIC should be posted as a High Radiation area with a red flashing light.

b. The HIC should be posted as a High Radiation area without a red flashing light.

c. No postings are required because you need a ladder to access the top of the shielded HIC.

d. The PAB truck bay should be barricaded with locked gate access and posted as a Very High Radiation area.

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QUESTION: 092 (1.00)

A plant shutdown is required due to the gross specific activity of the reactor coolant not being within limits.

Which one of the following is the reason Technical Specifications require T_{AVG} to be reduced to less than 500°F following the reactor shutdown?

a. Slows the release of noble gas to the reactor coolant, reducing the source term of the activity.

b. Minimizes the temperature related degradation of the CVCS demineralizers while RCS clean-up is in progress.

c. Prevents the direct release of activity to the environment via the S/G safety valves in the event of a S/G tube rupture.

d. Minimizes the magnitude of the iodine spiking phenomena caused by the unit shutdown.

QUESTION: 093 (1.00)

During a relief crew week, you have been asked to help develop an operations work plan which involves a job to be performed in a high radiation area. The area is rarely accessed and also is a contamination area.

Which one of the following statements correctly describes an ALARA requirement per NP 4.2.1, "Plant ALARA Program?"

a. Use and installation of temporary shielding shall be used.

b. Concurrent jobs should be evaluated for any dose impact.

c. The use of respiratory protection equipment is mandatory.

d. The use of permanent shielding would be most effective.

QUESTION: 094 (1.00)

Given the following plant conditions:

- Both units are operating at full power.
- RE-214, Auxiliary Building Vent Exhaust Gas Monitor," was previously removed from service.
- 1RE-215, "Condenser Air Ejector Gas Monitor," is being taken out of service for maintenance while operating at full power.

Using the given reference from the Radiological Effluent Control Manual (RECM), which one of the following statements is correct in regards to REQUIRED actions for effluent releases via this pathway? (Assume all other radioactive gaseous effluent monitoring instruments are available other than those mentioned above.)

a. There are no actions necessary.

b. Releases may continue provided grab samples are collected at least once per 12 hours.

c. Releases may continue provided grab samples are collected at least once per 24 hours.

d. Releases may continue provided samples are continuously collected with auxiliary equipment.

QUESTION: 095 (1.00)

Given the following Unit 1 plant conditions:

- OP-3C, "Hot Shutdown to Cold Shutdown," is in progress and has been completed up to and including placing the Residual Heat Removal System in service.
- Both RCPs are in operation.
- 4.16 kV AC Bus 1A05 is de-energized.
- 4.16 kV AC Bus 1A06 is energized.
- 480 V AC Bus 1B03 is de-energized.
- 480 V AC Bus 1B04 is de-energized.

Which one of the following choices indicates the correct course of action based on the PNP procedure network?

a. Transition to ECA-0.0, "Loss of All AC Power."

b. Transition to SEP-3.0, "Loss of All AC Power to a Shutdown Unit."

c. Remain in OP-3C, "Hot Shutdown to Cold Shutdown," and commence a cooldown to cold shutdown utilizing the Steam-driven Auxiliary Feedwater Pump and the S/G atmospheric dump valves under manual control.

d. Secure the RCPs and transition to EOP-0.2, "Natural Circulation Cooldown."

QUESTION: 096 (1.00)

Unit 1 has experienced a major plant transient. An ORANGE path CSP is currently being implemented.

The implementation of the ORANGE path CSP must be suspended for all of the following conditions EXCEPT when:

a. a RED path CSP is identified.

b. a higher priority ORANGE path CSP is identified.

c. the ORANGE path condition clears.

d. a total loss of onsite and offsite AC power occurs.

QUESTION: 097 (1.00)

Given the following plant conditions:

- A reactor start-up is in progress.
- Reactor criticality has been achieved and critical rod height data is being recorded.
- A bank of rods suddenly drops into the core.
- Intermediate Range power is lowering.
- The operator immediately pushes the reactor trip pushbuttons, but the reactor trip breakers do not open.
- Safety Injection actuates on low PZR pressure.

The correct course of action is described by which one of the following statements?

(EOP-0, "Reactor Trip or Safety Injection")
(EOP-0.1, "Reactor Trip Response")
(CSP-S.1, "Response to Nuclear Power Generation/ATWS")

a. Transition from EOP-0 to CSP-S.1.

b. Complete EOP-0 Immediate Actions and transition to EOP-0.1.

c. Locally open reactor trip breakers and once opened exit EOP-0

d. Complete EOP-0 Immediate actions and continue until first transition out.

QUESTION: 098 (1.00)

A fire is reported to the control room by an Office Assistant an verified by an Auxiliary Operator in the area of Unit Two Lube Oil Storage Room.

According to MP 1.9.14, "Fire Protection Organization," which of the following describes a responsibility of the Duty Operating Supervisor (DOS) regarding fire emergency response guidelines?

The DOS should . . .

a. relieve the third licensed control room operator who will act as a fire brigade member.

b. proceed to the scene to act as the fire brigade leader, after ensuring the DSS is in the control room.

c. contact the Two Creeks Volunteer Fire Department for assistance as soon as fire magnitude is known.

d. relieve the Duty Shift Superintendent (DSS) who will proceed to the scene of the fire to direct activities.

QUESTION: 099 (1.00)

Question intentionally withheld from public disclosure.

QUESTION: 100 (1.00)

A Site Emergency was declared at 1745.

Which one of the following indicates the LATEST acceptable time to notify the Nuclear Regulatory Commission of Event Classification?

a. 1755

b. 1810

c. 1830

d. 2130

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

ANSWER: 001 (1.00)
d.
REFERENCE:
AOP-6C
FSAR Chapter 14.1.2
Bank
Higher
001AK105 ..(KA's)

ANSWER: 002 (1.00)
a.
REFERENCE:
AOP-6A & B/G Doc.
Bank
Memory
2.4.11 ..(KA's)

ANSWER: 003 (1.00)
a.
REFERENCE:
ITS 3.2.3 and Bases
AOP-6A
New
Memory
003AK305 ..(KA's)

ANSWER: 004 (1.00)
c.
REFERENCE:
General Physics Chapter 4,
PP 18, 19
New
Higher
005AA104 ..(KA's)

ANSWER: 005 (1.00)
c.
REFERENCE:
West 885D195 Sh. 7
New
Memory
011EA104 ..(KA's)

ANSWER: 006 (1.00)
d.
REFERENCE:
EOP-0 & Associated B/G
Doc.
Bank
Higher
2.1.7 ..(KA's)

ANSWER: 007 (1.00)
b.
REFERENCE:
EOP 0.1 Fold-out Page
Bank
Higher

ANSWER: 008 (1.00)
b.
REFERENCE:
AOP-1B & B/G Doc.
ARB 1C04 1C 4-11
OM 3.7
New
Higher
015/017AK1 ..(KA's)

ANSWER: 009 (1.00)
a.
REFERENCE:
EOP 0.1
Bank
Memory
2.4.47 ..(KA's)

ANSWER: 010 (1.00)
b.
REFERENCE:
EOP 0.1 & BG Doc.
Bank
Higher
024AK302 ..(KA's)

ANSWER: 011 (1.00)
c.
REFERENCE:
AOP-9B/AOP-18B
DBD-02
Bank
Higher
2.4.11 ..(KA's)

ANSWER: 012 (1.00)
a.
REFERENCE:
CSP S.1 pg. 10
Bank
Higher
026EK312 ..(KA's)

ANSWER: 013 (1.00)
a.
REFERENCE:
ECA 2.1 and B/G Document
Modified
Memory

ANSWER: 014 (1.00)
b.
REFERENCE:
CSP-ST.0
CSP-P.1
Bank
Higher

ANSWER: 015 (1.00)
d.
REFERENCE:
WEST 883D195 Sh, 2,3,12
Bank
Higher
051AA202 ..(KA's)

ANSWER: 016 (1.00)
b.
REFERENCE:
ECA 0.0 and B/G Doc.
New
Memory
055EK302 ..(KA's)

ANSWER: 017 (1.00)
c.
REFERENCE:
AOP 0.2
DBD-24
TRHB Fig 13.4.6, 13.4.7
Modified
Higher
057AA219 ..(KA's)

ANSWER: 018 (1.00)
b.
REFERENCE:
RMSASRB CI 1RE-229
AOP-4A
RAM 3.1
Bank
Memory
059AK301 ..(KA's)

ANSWER: 019 (1.00)
c.
REFERENCE:
AOP-13A, OI-70
New
Higher
062AA202 ..(KA's)

ANSWER: 020 (1.00)
b.
REFERENCE:
FAP 3.4
FAP 3.0
Modified
Memory
067AK102 ..(KA's)

ANSWER: 021 (1.00)
b.
REFERENCE:
AOP-10A
New
Memory
068AK202 ..(KA's)

ANSWER: 022 (1.00)
c.
REFERENCE:
EOP-0, Att. A & Att. B
New
Higher
069AA101 ..(KA's)

ANSWER: 023 (1.00)
a.
REFERENCE:
BG-CSP-ST.0
New
Higher
074EA206 ..(KA's)

ANSWER: 024 (1.00)
b.
REFERENCE:
AOP-8A
Bank
Memory
076AK201 ..(KA's)

ANSWER: 025 (1.00)
c.
REFERENCE:
EOP-0 B/G Document
Bank
Memory
007EK301 ..(KA's)

ANSWER: 026 (1.00)
d.
REFERENCE:
Steam Tables
Bank
Higher
008AK101 ..(KA's)

ANSWER: 027 (1.00)
d.
REFERENCE:
EOP-0 Foldout Page
BG-EOP-0 RCP Trip Criteria
ERG Exec. Vol.-Section 2.2.1
Bank
Memory
2.4.18 ..(KA's)

ANSWER: 028 (1.00)
d.
REFERENCE:
EOP1.2 and associated B/G doc
Bank
Memory

ANSWER: 029 (1.00)
c.
REFERENCE:
ECA 1.1 & B/G Document
Bank
Memory

ANSWER: 030 (1.00)
b.
REFERENCE:
AOP-1A
Tank Level Book (TLB-2)
New
Higher
022AA204 ..(KA's)

ANSWER: 031 (1.00)
d.
REFERENCE:
SEP-1
SEP-1.1
Bank
Higher
025AK101 ..(KA's)

ANSWER: 032 (1.00)
d.
REFERENCE:
EOP-3 and associated B/G
Document
New
Memory
027AK303 ..(KA's)

ANSWER: 033 (1.00)
d.
REFERENCE:
CSP-ST-0, Figure 1
New
Higher
032AA206 ..(KA's)

ANSWER: 034 (1.00)
d.
REFERENCE:
ITS 3.3.1 and Bases
New
Memory
033AK301 ..(KA's)

ANSWER: 035 (1.00)
c.
REFERENCE:
PI Worksheet
GP Chapter 6
DBD-07 Main Steam pp 2-17
Bank
Higher
037AK102 ..(KA's)

ANSWER: 036 (1.00)
b.
REFERENCE:
Steam Tables
EOP-3 and B/G
Bank
Higher
038EA136 ..(KA's)

ANSWER: 037 (1.00)
d.
REFERENCE:
TRHB 11.4 pp 7, 9
New
Higher
054AA203 ..(KA's)

ANSWER: 038 (1.00)
b.
REFERENCE:
CSP H.1
Bank
Memory
2.4.6 ..(KA's)

ANSWER: 039 (1.00)
b.
REFERENCE:
ITS 3.8.4/3.8.9 and
associated bases
New
Higher
2.1.12 ..(KA's)

ANSWER: 040 (1.00)
c.
REFERENCE:
OM 3.7
Bank
Higher

ANSWER: 041 (1.00)
c.
REFERENCE:
Westinghouse 883D195
Logic Sheet #18
ARB 1C04 1C 2-3
New
Higher
2.4.31 ..(KA's)

ANSWER: 042 (1.00)
d.
REFERENCE:
FSAR Chapter 14
New
Memory
036AK302 ..(KA's)

ANSWER: 043 (1.00)
b.
REFERENCE:
FSAR Chap 14.1.11, 10.2
FSAR Table 7.3-1
MDB 3.2.3, 3.2.4
Bank
Higher
056AA207 ..(KA's)

ANSWER: 044 (1.00)
a.
REFERENCE:
TRHB 13.8
OP-1C Figure 1
Bank
Higher
001A303 ..(KA's)

ANSWER: 045 (1.00)
a.
REFERENCE:
FSAR 14.1.8
TRHB Fig. 13.6.2
DBD-07 pp 2-17
New
Higher
003A105 ..(KA's)

ANSWER: 046 (1.00)
a.
REFERENCE:
DBD-04 pp 3, Figure 1-1
Bank
Higher
004K308 ..(KA's)

ANSWER: 047 (1.00)
a.
REFERENCE:
ARB 1C04 1C 1-3
AOP-1A Rev. 13, Step 9
DBD-04 pg 3-127
New
Higher
004A104 ..(KA's)

ANSWER: 048 (1.00)
a.
REFERENCE:
AOP 27
Logic Sheet #21
Bank
Higher
013A206 ..(KA's)

ANSWER: 049 (1.00)
d.
REFERENCE:
MDB 3.2.2, 3.2.4
Bank
Higher
013A403 ..(KA's)

ANSWER: 050 (1.00)
a.
REFERENCE:
TRHB 13.13
Bank
Memory
014A103 ..(KA's)

ANSWER: 051 (1.00)
b.
REFERENCE:
PBNP STPT 3.1
PBNP FSAR Fig. 7.6-2
TRHB Fig. 13.1.19
Bank
Higher
015K604 ..(KA's)

ANSWER: 052 (1.00)
d.
REFERENCE:
EOP 1.2
Bank
Higher
017A301 ..(KA's)

ANSWER: 053 (1.00)
d.
REFERENCE:
ITS Bases 3.6.6
CSP-ST.0 Figure 5
Modified
Higher
022A204 ..(KA's)

ANSWER: 054 (1.00)
a.
REFERENCE:
DBD-11
Bank
Memory
026K406 ..(KA's)

ANSWER: 055 (1.00)
d.
REFERENCE:
ECA 1.1
CSP Z.1
Bank
Higher
026A101 ..(KA's)

ANSWER: 056 (1.00)
b.
REFERENCE:
STPT 14.2
Bank
Memory
056K301 ..(KA's)

ANSWER: 057 (1.00)
d.
REFERENCE:
STPT 5.4
ARO 1C03 1E2 2-3
New
Higher
059A411 ..(KA's)

ANSWER: 058 (1.00)
d.
REFERENCE:
OI-62B
Bank
Memory
061K406 ..(KA's)

ANSWER: 059 (1.00)
a.
REFERENCE:
AOP 0.0
Modified
Memory
063K201 ..(KA's)

ANSWER: 060 (1.00)
c.
REFERENCE:
ODCM Table 2-1/Fig. 2-1
RMSASRB
Bank
Memory
068A302 ..(KA's)

ANSWER: 061 (1.00)
b.
REFERENCE:
WEST 684J972 sh.1
New
Memory
071K305 ..(KA's)

ANSWER: 062 (1.00)
b.
REFERENCE:
HP Fundamentals
(ABB CE Nuclear Power)
Bank
Higher
072K501 ..(KA's)

ANSWER: 063 (1.00)
d.
REFERENCE:
OP-1C
M-202 sh. 2
New
Higher
002K511 ..(KA's)

ANSWER: 064 (1.00)
d.
REFERENCE:
DBD-11 Sec. 3.12.4
Bank
Memory
006K417 ..(KA's)

ANSWER: 065 (1.00)
b.
REFERENCE:
Setpoint Study (WCAP 7377)
WEST 883D195 sh. 18
EOP-1 and B/G Doc.
Bank
Higher
010K102 ..(KA's)

ANSWER: 066 (1.00)
b.
REFERENCE:
TRHB 13.6 pg 3
AOP-24
New
Higher
011A206 ..(KA's)

ANSWER: 067 (1.00)
d.
REFERENCE:
TRHB 13.3
Bank
Higher
012K606 ..(KA's)

ANSWER: 068 (1.00)
b.
REFERENCE:
EPIP 10.3
SAMG SAG-7
Bank
Memory
028K502 ..(KA's)

ANSWER: 069 (1.00)
c.
REFERENCE:
RMSARB CI 2RE-305
RMSARB 1.0
LP2395
Bank
Memory
029K403 ..(KA's)

ANSWER: 070 (1.00)
c.
REFERENCE:
AOP-8F
New
Memory
2.4.24 ..(KA's)

ANSWER: 071 (1.00)
b.
REFERENCE:
FSAR 14.2
Bank
Memory
2.1.10 ..(KA's)

ANSWER: 072 (1.00)
b.
REFERENCE:
FSAR Chapter 14.1.6
Bank
Higher
035K501 ..(KA's)

ANSWER: 073 (1.00)
b.
REFERENCE:
M-201 Sh. 1
Bank
Memory
039K109 ..(KA's)

ANSWER: 074 (1.00)
b.
REFERENCE:
WEST 883D195 Shs. 4, 6, 6a
Bank
Higher
062K302 ..(KA's)

ANSWER: 075 (1.00)
b.
REFERENCE:
DBD 02
DBD-12
WEST883D195 sh 4
New
Higher
064A307 ..(KA's)

ANSWER: 076 (1.00)
a.
REFERENCE:
RECM
Generic RMS Alarm
Response Guidelines
Modified
Higher
073A401 ..(KA's)

ANSWER: 077 (1.00)
c.
REFERENCE:
AOP-5B
Bank
Memory
079K401 ..(KA's)

ANSWER: 078 (1.00)
a.
REFERENCE:
CSP-H.1 Foldout page
AOP-23
Bank
Memory
086K103 ..(KA's)

ANSWER: 079 (1.00)
a.
REFERENCE:
DBD-24
TRHB 10.16
Bank
Higher
103A301 ..(KA's)

ANSWER: 080 (1.00)
c.
REFERENCE:
MDB 3.2.6
New
Higher
064K202 ..(KA's)

ANSWER: 081 (1.00)
c.
REFERENCE:
WEST 541F091 sh. 2
OP-4AD Part 1
New
Higher
007K101 ..(KA's)

ANSWER: 082 (1.00)
a.
REFERENCE:
ARB 1C03 1E1 4-1/1F 3-7/1F
1-7/1E1 4-3
Bank
Memory
045K120 ..(KA's)

ANSWER: 083 (1.00)
a.
REFERENCE:
DBD-07 Sec 3.3.1
Bank
Memory
078K105 ..(KA's)

ANSWER: 084 (1.00)
d.
REFERENCE:
OM 3.1
Bank
Memory
2.1.4 ..(KA's)

ANSWER: 085 (1.00)
d.
REFERENCE:
OM 3.7
Bank
Memory
2.1.6 ..(KA's)

ANSWER: 086 (1.00)
b.
REFERENCE:
FSAR 14.1.7
Bank
Higher
2.1.7 ..(KA's)

ANSWER: 087 (1.00)
c.
REFERENCE:
ITS 3.2.1 Bases
Bank
Memory
2.1.10 ..(KA's)

ANSWER: 088 (1.00)
c.
REFERENCE:
NP 1.2.3, NP 1.6.5
PBF-0026e
Bank
Memory
2.2.11 ..(KA's)

ANSWER: 089 (1.00)
b.
REFERENCE:
ITS 2.0
Bank
Higher
2.2.22 ..(KA's)

ANSWER: 090 (1.00)
b.
REFERENCE:
ITS 3.7.4 & Bases
New
Memory
2.2.25 ..(KA's)

ANSWER: 091 (1.00)
a.
REFERENCE:
HP 3.2
Bank
Higher
2.3.1 ..(KA's)

ANSWER: 092 (1.00)
c.
REFERENCE:
NP 4.2.14
Bank
Higher
2.3.4 ..(KA's)

ANSWER: 093 (1.00)
b.
REFERENCE:
NP 4.2.1
Bank
Memory
2.3.2 ..(KA's)

ANSWER: 094 (1.00)
a.
REFERENCE:
RECM
Bank
Higher
2.3.8 ..(KA's)

ANSWER: 095 (1.00)
b.
REFERENCE:
SEP-3.0
Bank
Higher
2.4.5 ..(KA's)

ANSWER: 096 (1.00)
c.
REFERENCE:
CSP-Z.1
BG-CSP-Z.1
Bank
Higher
2.4.14 ..(KA's)

ANSWER: 097 (1.00)
d.
REFERENCE:
EOP-0
Bank
Higher
2.4.21 ..(KA's)

ANSWER: 098 (1.00)
b.
REFERENCE:
NP 1.9.14
Bank
Memory
2.4.27 ..(KA's)

ANSWER: 099 (1.00)
a.
REFERENCE:
NP 2.1.1
Bank
Memory
2.4.31 ..(KA's)

ANSWER: 100 (1.00)
c.
REFERENCE:
EPIP 2.1 Sect. 5.4
Bank
Higher
2.4.40 ..(KA's)

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

ANSWER KEY

001 d	021 b	041 c	061 b	081 c
002 a	022 c	042 d	062 b	082 a
003 a	023 a	043 b	063 d	083 a
004 c	024 b	044 a	064 d	084 d
005 c	025 c	045 a	065 b	085 d
006 d	026 d	046 a	066 b	086 b
007 b	027 d	047 a	067 d	087 c
008 b	028 d	048 a	068 b	088 c
009 a	029 c	049 d	069 c	089 b
010 b	030 b	050 a	070 c	090 b
011 c	031 d	051 b	071 b	091 a
012 a	032 d	052 d	072 b	092 c
013 a	033 d	053 d	073 b	093 b
014 b	034 d	054 a	074 b	094 a
015 d	035 c	055 d	075 b	095 b
016 b	036 b	056 b	076 a	096 c
017 c	037 d	057 d	077 c	097 d
018 b	038 b	058 d	078 a	098 b
019 c	039 b	059 a	079 a	099 a
020 b	040 c	060 c	080 c	100 c

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