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: RO	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)

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: 002 (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: 003 (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: 004 (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: 005 (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: 006 (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: 007 (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 T_{HOT} is 282°F and lowering
- RCS T_{COLD} 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: 008 (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: 009 (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: 010 (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: 011 (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: 012 (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: 013 (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: 014 (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: 015 (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: 016 (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: 017 (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 TREF.
- Rising pressurizer pressure.
- Rising steam generator pressures.

a. Excessive boration.

b. Main Steam Line leak.

c. Inadvertent AFW actuation.

d. Uncontrolled rod withdrawal.

QUESTION: 018 (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: 019 (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: 020 (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: 021 (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: 022 (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: 023 (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: 024 (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
T_H WR	584	585	°F
T_C WR	550	548	°F
Core TCs	590	----	°F
RCPs	Off	Off	----
PZR Pressure	1737	----	psig
PZR Level	10		%
Subcooling	27	30	°F

Secondary	A	B	Units
S/G Pressure	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: 025 (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: 026 (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: 027 (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: 028 (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: 029 (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: 030 (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: 031 (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: 032 (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: 033 (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 10^6 R/hr.
- Containment pressure has just lowered to 4.5 psig and containment radiation levels to $8X10^4$ 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: 034 (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: 035 (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: 036 (1.00)

CSP-Z.2, "Response to Containment Flooding," is entered when containment sump 'B' level is greater than 74 inches.

Which one of the following correctly states the major concern to the operator if containment sump 'B' level were to exceed 74 inches?

a. Plant components required for long-term cooling of the core and/or containment could be damaged and rendered inoperable.

b. The sodium hydroxide tank does not contain enough volume to neutralize a larger volume of sump 'B' contents to the correct pH.

c. Excessive leakage from various containment penetrations will exceed the total allowable containment leakage.

d. The pump and hydraulic cylinder assemblies for containment sump 'B' valves (SI-850A/B) may be damaged.

QUESTION: 037 (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: 038 (1.00)

Given the following plant conditions:

- Unit 2 has just been manually tripped due to excessive Alewife buildup on the Traveling Water Screens.
- Unit 1 has been reduced to 80% Power.
- Five minutes has elapsed since the trip and all equipment and automatic functions have operated as designed.

Based on these conditions, which one of the following correctly states the power supply to Unit 2 'A' Reactor Coolant Pump?

a. 2A-01 from 2X-02

b. 2A-02 from 2X-02

c. 2A-01 from 2X-04

d. 2A-02 from 2X-04

QUESTION: 039 (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: 040 (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: 041 (1.00)

The following plant conditions exist:

- A Unit 1 startup is in progress.
- Reactor power is 2% and steady.
- Steam dumps are in steam pressure control.
- CVCS is in a normal plant startup alignment.
- Rod control is in manual.

The non-regenerative HX outlet temperature control valve (CC- 130), cycles full open.

Which one of the following describes the plant response to this event? (Assume no operator action.)

a. SUR is positive and reactor power increases.

b. SUR is positive and reactor power decreases.

c. SUR is negative and reactor power decreases.

d. SUR is zero and reactor power remains constant.

QUESTION: 042 (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: 043 (1.00)

Following a Unit 1 Automatic Safety Injection (SI) and Containment Spray (CS) actuation, the following conditions exist:

- Containment Pressure = 30 psig.
- SI has NOT been reset.
- The normal feeder breaker to 4.16 kV Bus 1A-06 has inadvertently tripped due to an improper overcurrent relay setting.
- G-03 EDG output breaker has failed to auto-close.
- G-03 EDG output breaker to 1A-06 is then manually closed.
- Assume no other operator action.

Which one of the following descriptions of control room indications is correct for these conditions?

a. The red lights are lit above the control switches for both SI Pump 1P-15B and CS Pump 1P-14B.

b. The green lights are lit above the control switches for both SI Pump 1P-15B and CS Pump 1P-14B.

c. The red light is lit above the control switch for SI Pump 1P-15B, and the green light is lit above the control switch for CS Pump 1P-14B.

d. The green light is lit above the control switch for SI Pump 1P-15B, and the red light is lit above the control switch for CS Pump 1P-14B.

QUESTION: 044 (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: 045 (1.00)

The following plant conditions exist:

- Unit 1 experiences a Large Break Loss of Coolant Accident during a reactor startup.
- All equipment functions as designed and the Control Room Team has reached the point in EOP-0, "Reactor Trip or Safety Injection," where monitoring Critical Safety Function Status Trees is required.
- It is then reported by the third license that RWST level is at 58%.

Which one of the following statements describes the IMMEDIATE result that voiding in the downcomer region would have on the Source Range instrumentation and procedure used to mitigate these plant conditions? (CSP-S.2, "Response to Loss of Core Shutdown.")

a. A decrease in water density would reduce fission and result in a lower source range count rate, operators can address condition using CSP-S.1.

b. The displacement of boron would increase fission and result in a higher source range count rate, operators must address condition using CSP-S.2.

c. The displacement of water would increase the neutron leakage and result in a higher source range count rate, operators should continue in the EOP set.

d. The location of the source range detectors effectively shields the effects of voiding and results in no change in source range count rate, operators should continue in the EOP set.

QUESTION: 046 (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: 047 (1.00)

What is the power supply to 1W-1C1, the Unit 1 'C' Accident fan?

a. 1A01

b. 1A05

c. 1B01

d. 1B04

QUESTION: 048 (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: 049 (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: 050 (1.00)

Which one of the following statements is the basis for the heater drain tank and condensate pumps automatically tripping on a high containment pressure signal at 5 psig?

a. To prevent overfeeding a steam generator that has a S/G tube rupture.

b. To reduce non-essential loads to prevent overloading the diesel generators.

c. To prevent pump damage while pumps are dead-headed due to main feedwater isolation.

d. To minimize the containment pressure transient during a steam line break by limiting S/G inventory.

QUESTION: 051 (1.00)

Given the following plant conditions:

- Unit 1 is operating at 100% power.
- All systems are operating normally.
- A manual reactor trip is initiated via the 1C-04 pushbuttons.

Which one of the following statements describes the expected response of the Main Feed Regulating Valves?

a. They immediately close within 5 seconds.

b. They open fully within 10 seconds, then close within 20 seconds after T_{AVG} is less than 554°F.

c. They open fully within 10 seconds, then close within 5 seconds after T_{AVG} is less than 554°F.

d. They remain open and automatically throttle as needed to maintain 40% steam generator level.

QUESTION: 052 (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: 053 (1.00)

A Low-Low Steam Generator Level was received on 2/3 channels in the Unit 1 'A' Steam Generator ('B' Steam Generator is normal at 64%).

Which one of the following is the expected Auxiliary Feedwater system line-up for this condition?

a. 1P-29 (Turbine driven AFW Pump) feeding both Unit 1 steam generators.

b. P-38A and P-38B (the 'A' & 'B' Motor Driven AFW Pumps) running feeding both Unit 1 steam generators.

c. P-38A and P-38B running feeding the 1A steam generator only.

d. 1P-29 and P-38A running feeding the 1A steam generator only.

QUESTION: 054 (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: 055 (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: 056 (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: 057 (1.00)

Which one of the following Radioactive Gaseous Waste Effluent Monitors has an automatic control function associated with its design to isolate a waste gas release when high noble gas activity is sensed?

a. RE-221, "Drumming Area Ventilation."

b. RE-224, "Gas Stripper Building Exhaust."

c. RE-225, "Combined Air Ejector Low Range."

d. RE-214, "Auxiliary Building Exhaust Ventilation."

QUESTION: 058 (1.00)

A malfunction in the RMS causes a high radiation signal in the control room. This will cause the control room ventilation to shift to Mode 4 which provides:

a. 100% recirculation.

b. 5% outside air, 95% recirculation.

c. 100% recirculation with 25% of it filtered.

d. 75% recirculation, 25% filtered outside air.

QUESTION: 059 (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: 060 (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: 061 (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: 062 (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: 063 (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: 064 (1.00)

With reactor power at 100%, the T_{HOT} 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.	Decrease	Decreases

QUESTION: 065 (1.00)

During performance of an NIS power range heat balance at 100% power, a Reactor Engineer uses a feedwater temperature 30°F lower than actual.

Would the calculated value of power be HIGHER or LOWER than actual power, and would an adjustment of the NIS power range channels, based on this value, be CONSERVATIVE or NON-CONSERVATIVE with respect to Reactor Protection setpoints?

a. Higher/Conservative

b. Higher/Non-Conservative

c. Lower/Conservative

d. Lower/Non-Conservative

QUESTION: 066 (1.00)

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

a. A T_{HOT} RTD failing HIGH.

b. Impulse pressure failing HIGH.

c. A Power Range NIS channel failing HIGH.

d. A pressurizer pressure channel failing LOW.

QUESTION: 067 (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: 068 (1.00)

Unit 2 is in the middle of refueling (core load in progress). A power supply failure has resulted in the de-energizing 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: 069 (1.00)

Unit 2 is in a refueling outage. 10 days after shutdown, and has just completed a full core offload to the Spent Fuel Pool (SFP). A complete loss of SFP cooling occurs at 0300 due to mechanical failure of both SFP pumps. The current temperature of the SFP is 90°F. The control room has entered AOP-8F, "Loss of SFP Cooling."

Given these plant conditions and AOP-8F, Figure 1, which one of the following indicates the earliest clock time at which boiling will be occurring in the SFP?

a. 1700

b. 1800

c. 1900

d. 2000

QUESTION: 070 (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 T_{COLD} 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: 071 (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: 072 (1.00)

Given the following plant conditions:

- Unit 1 is operating at 100% power.
- 1C03 1F 1-5, "Condenser Delta T High," alarm is received.
- Upon investigation the turbine hall AO reports that Vacuum Priming is operating normally and the Air Ejector Lineup is normal.
- Additionally the AO reports condenser delta T is 51°F and rising.

Based on this information your next action would be to. . . .

a. enter AOP-17A, "Rapid Power Reduction," and reduce load until condenser Delta T is restored to normal.

b. direct the turbine hall AO to manually open the exhaust hood spray valves to lower condenser Delta T per ARB.

c. immediately trip the reactor and enter EOP-0, "Reactor Trip or Safety Injection," since operation with condenser Delta T greater than 50°F is not allowed.

d. direct the turbine hall AO to open the condensate cooler outlet valve to increase cooling of the condensate that is returning to the main condenser per ARB.

QUESTION: 073 (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: 074 (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: 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 normal 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:

- Both units are operating at full power.
- Unit 1 has just tripped due to a lockout on High Voltage Station Transformer 1X03, combined with a failure of the "fast bus transfer" on the 13.8 kV level.

Which one of the following statements best describes the status of the circulating water system and procedure(s) that will mitigate circumstances related to the affected unit, if any?

a. Unit 2 Circulating Water (CW) pumps trip, Unit 2 CW discharge valves remain open, EOP-0 is entered for Units 1 and 2, and AOP-5A for Unit 2.

b. Unit 1 CW pumps trip and their associated discharge valves close. EOP-0 and AOP-5A are entered for Unit 1 only.

c. There is no effect on any running CW pump or discharge valve since these are still powered via Low Voltage Station Transformer 1X04. EOP-0 is entered on Unit 1 only.

d. Unit 1 CW pumps trip and their associated discharge valves remain open. EOP-0 and AOP-5A are entered for Unit 1 only.

QUESTION: 078 (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: 079 (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: 080 (1.00)

Given the following plant conditions:

- Reactor Coolant System temperature is 320°F.
- Reactor Coolant System pressure is 370 psig.
- RHR cooldown operations has been established with both RHR pumps and heat exchangers in service.
- A cooldown rate of 80°F/hr has been established.

Which one of the following failures will cause the cooldown rate to increase?

a. Loss of control air to RH-626 (RHR HX Bypass FCV).

b. Loss of power to CC-738A (HX-11A RHR HX-Shell Side Inlet Valve).

c. Maximum control air signal to RH-624 (HX-11A RHR HX Outlet FCV).

d. The bellows in FT-626 (RHR System Return Line Flow) fails by rupturing.

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)

Given the following plant conditions:

- Both units are at 100% power.
- Unit 2 has just experienced a failure of BOTH Component Cooling Water (CCW) pumps.
- AOP-9B, "Component Cooling System Malfunction," has been entered, however, neither Unit 2 CCW pump will start.

All of the following are required actions per AOP-9B for these conditions EXCEPT:

a. Manually trip the Unit 2 reactor to avoid an automatic trip during performance of other procedural actions.

b. Stop both Reactor Coolant Pumps (RCPs) due to loss of cooling.

c. Transfer the Condenser Steam Dump Mode Selector Switch to manual due to T_{AVG} signals being unreliable.

d. Maximize seal injection to both RCPs due to loss of thermal barrier flow.

QUESTION: 083 (1.00)

Which one of the following describes the result of taking the STEAM DUMP MODE SELECTOR SWITCH to MANUAL? (Assume all other controllers and switches remain in their normal, full power alignment.)

a. Allows the atmospheric steam dumps to be manually controlled at the remote shutdown local control station.

b. Allows the atmospheric steam dumps to modulate open as necessary to maintain RCS temperature at the controller setpoint.

c. Allows the condenser steam dumps to be manually opened and closed using the manual control knob on the steam dump controller.

d. Allows the condenser steam dumps to modulate open as necessary to maintain main steam header pressure at the controller setpoint.

QUESTION: 084 (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: 085 (1.00)

Given the following plant conditions:

- Both Units are at Full Power.
- An 'A' Train and 'B' Train Service Water Pump is running supplying normal plant loads.

What is the expected response of the Service Water System to a Unit 2 Safety Injection Signal?

a. SW-2869/2870, Cross-Connect valves, shut to isolate West Header.

b. If only four SW Pumps start, then all Unit 2 Turbine Hall loads are isolated.

c. Spent Fuel Pool Heat Exchanger Outlet Valves SW- 2930A/2930B close and Spent Fuel Pool Heat Exchanger Inlet Valves SW-2927A/2937B remain open.

d. 2SQW-2907/2908, 2HX-15A-D Containment Recirc Heat exchanger emergency flow control valves, open to increase flow to Containment Accident Coolers.

QUESTION: 086 (1.00)

The Instrument Air header has an unisolable rupture 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: 087 (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: 088 (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: 089 (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: 090 (1.00)

Unit 2 is operating at 100% power when a sequence of annunciators actuate, indicating a loss of feedwater and a reactor trip, but NO reactor trip occurs. The following plant status is noted:

- All attempts to perform a manual reactor trip fail.
- An urgent failure prevents all rod motion.
- All auxiliary feedwater pumps are operating.
- The turbine remains on-line (AUTO turbine trip did not occur).
- Reactor power remains near 100%.
- Reactor coolant system temperature and pressure slowly increase from 100% power values.

Which one of the following correctly states the action that the operator should take to mitigate the transient from this condition?

a. Trip the turbine to avoid an excessive pressure increase after the steam generator tubes uncover.

b. Open the PORVs immediately because the increasing pressure will take the pressurizer solid, resulting in insufficient water relief.

c. Align maximum auxiliary feedwater flow to one steam generator to maintain it as a heat sink for cooldown of the reactor coolant system.

d. Reduce turbine load slowly to avoid a rapid reactor coolant system temperature and pressure increase, leading to opening of a pressurizer safety valve.

QUESTION: 091 (1.00)

Which one of the following conditions would be indicated by a bright illuminated status light on the "SI/SPRAY Ready Panel" with the Unit at FULL POWER?

A component . . . .

a. has lost DC control power.

b. has lost AC control power.

c. is in its normal alignment condition.

d. is in an abnormal alignment condition.

QUESTION: 092 (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 peal readings occurred during the transient.:

- RCS Pressure - 2385 psig.
- Reactor Power - 52%
- RCS T_{HOT} - 670°F
- RCS T_{COLD} - 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: 093 (1.00)

Given the following plant conditions:

- A Unit 1 Core reload is in progress per RP-1C, "Refueling."
- You are the Refueling Unit Control Board Operator.

Which one of the following conditions would require the refueling operation to cease?

a. RCS boron concentration has lowered from 2210 to 2180 ppm.

b. RHR Heat Exchanger inlet temperature has risen from 90°F to 110°F.

c. Source Range channels N-32 and N-40 indicate a rise above the baseline count rate by a factor of 1.5.

d. Source Range channel N-31 indicates a rise above the baseline count rate by a factor of 3.5.

QUESTION: 094 (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.

QUESTION: 095 (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: 096 (1.00)

You are exiting the Radiation Control Area (RCA) after completing a plant tour. The PCM-1B Personnel Contamination Monitor alarms and indicates contamination on your left shoe. You exit the PCM-1B and perform a frisk using a hand held frisker. No contamination is detected during the frisk.

In this situation, which one of the following is the proper method for you to exit the RCA?

a. Proceed directly to the Portal Monitors.

b. Exit the RCA, bypassing the Portal Monitors.

c. Perform one additional PCM-1B recount, if no PCM-1B alarm is received, proceed to the Portal Monitors.

d. Perform two additional PCM-1B recounts, if no PCM-1B alarm is received, proceed to the Portal Monitors.

QUESTION: 097 (1.00)

Given the following plant conditions:

- Unit 1 startup is in progress with reactor power at 6% and stable.
- All systems are in a normal lineup with no equipment out of service.
- Procedure in effect is OP-1C, "Low Power Operation to Normal Power Operation."
- As the Unit 1 Control Operator moves rods out one step to continue the power ascension, control rods continue to step out.
- Rod movement is terminated by the Control Operator by manually tripping the reactor.
- Just prior to the manual trip, reactor power is noted to be 22%.
- EOP-0, "Reactor Trip or Safety Injection," is entered.

Which one of the following is correct regarding these events?

a. An automatic reactor trip should not have occurred since the Low Power Range Trip was automatically bypassed when power went above the P-10 interlock.

b. An automatic reactor trip should have occurred since the Low Power Range Trip was not bypassed and exceeded its reactor trip setpoint.

c. An automatic reactor trip should have occurred since the "At-Power Trips" were enabled when power went above the P-7 interlock.

d. An automatic reactor trip should have occurred since the Intermediate Range Trip was not bypassed and exceeded its reactor trip setpoint.

QUESTION: 098 (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: 099 (1.00)

Many of PBNP's Emergency Operating Procedures (EOPs) contain the following caution:

> If offsite power is lost after SI reset, manual action may be required to restart safeguard equipment.

Which one of the following choices represents the basis for this caution statement?

a. Automatic SI signals are not blocked after SI reset.

b. The SI logic requires a manual operator action to remove the undervoltage signal to the reset circuitry.

c. Manual action must be taken to realign all safeguards equipment, otherwise equipment would not restart.

d. Normal sequencing of safeguards loads onto vital buses subsequent to diesel-generator startup may not occur.

QUESTION: 100 (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.

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

ANSWER: 001 (1.00)
c.
REFERENCE:
General Physics Chapter 4, PP 18, 19
New
Higher
005AA104 ..(KA's)

ANSWER: 002 (1.00)
b.
REFERENCE:
AOP-1B & B/G Doc. ARB 1C04 1C 4-11 OM 3.7
New
Higher
015/017AK1 ..(KA's)

ANSWER: 003 (1.00)
a.
REFERENCE:
EOP 0.1
Bank
Memory
2.4.47 ..(KA's)

ANSWER: 004 (1.00)
b.
REFERENCE:
EOP 0.1 & BG Doc.
Bank
Higher
024AK302 ..(KA's)

ANSWER: 005 (1.00)
d.
REFERENCE:
EOP-3 and associated B/G Document
New
Memory
027AK303 ..(KA's)

ANSWER: 006 (1.00)
a.
REFERENCE:
ECA 2.1 and B/G Document
Modified
Memory

ANSWER: 007 (1.00)
b.
REFERENCE:
CSP-ST.0 CSP-P.1
Bank
Higher

ANSWER: 008 (1.00)
d.
REFERENCE:
WEST 883D195 Sh, 2,3,12
Bank
Higher
051AA202 ..(KA's)

ANSWER: 009 (1.00)
b.
REFERENCE:
ECA 0.0 and B/G Doc.
New
Memory
055EK302 ..(KA's)

ANSWER: 010 (1.00)
c.
REFERENCE:
AOP 0.2 DBD-24 TRHB Fig 13.4.6, 13.4.7
Modified
Higher
057AA219 ..(KA's)

ANSWER: 011 (1.00)
c.
REFERENCE:
AOP-13A, OI-70
New
Higher
062AA202 ..(KA's)

ANSWER: 012 (1.00)
b.
REFERENCE:
FAP 3.4 FAP 3.0
Modified
Memory
067AK102 ..(KA's)

ANSWER: 013 (1.00)
b.
REFERENCE:
AOP-10A
New
Memory
068AK202 ..(KA's)

ANSWER: 014 (1.00)
c.
REFERENCE:
EOP-0, Att. A & Att. B
New
Higher
069AA101 ..(KA's)

ANSWER: 015 (1.00)
a.
REFERENCE:
BG-CSP-ST.0
New
Higher
074EA206 ..(KA's)

ANSWER: 016 (1.00)
b.
REFERENCE:
AOP-8A
Bank
Memory
076AK201 ..(KA's)

ANSWER: 017 (1.00)
d.
REFERENCE:
AOP-6C FSAR Chapter 14.1.2
Bank
Higher
001AK105 ..(KA's)

ANSWER: 018 (1.00)
a.
REFERENCE:
AOP-6A & B/G Doc.
Bank
Memory
2.4.11 ..(KA's)

ANSWER: 019 (1.00)
c.
REFERENCE:
EOP-0 B/G Document
Bank
Memory
007EK301 ..(KA's)

ANSWER: 020 (1.00)
d.
REFERENCE:
Steam Tables
Bank Higher
008AK101 ..(KA's)

ANSWER: 021 (1.00)
c.
REFERENCE:
West 885D195 Sh. 7
New
Memory
011EA104 ..(KA's)

ANSWER: 022 (1.00)
d.
REFERENCE:
EOP-0 & Associated B/G Doc.
Bank
Higher
2.1.7 ..(KA's)

ANSWER: 023 (1.00)
c.
REFERENCE:
ECA 1.1 & B/G Document
Bank
Memory

ANSWER: 024 (1.00)
b.
REFERENCE:
EOP 0.1 Fold-out Page
Bank
Higher

ANSWER: 025 (1.00)
b.
REFERENCE:
AOP-1A Tank Level Book (TLB-2)
New Higher
022AA204 ..(KA's)

ANSWER: 026 (1.00)
d.
REFERENCE:
SEP-1 SEP-1.1
Bank
Higher
025AK101 ..(KA's)

ANSWER: 027 (1.00)
d.
REFERENCE:
ITS 3.3.1 and Bases
New
Memory
033AK301 ..(KA's)

ANSWER: 028 (1.00)
c.
REFERENCE:
PI Worksheet GP Chapter 6 DBD-07 Main Steam pp 2-17
Bank
Higher
037AK102 ..(KA's)

ANSWER: 029 (1.00)
b.
REFERENCE:
Steam Tables EOP-3 and B/G
Bank
Higher
038EA136 ..(KA's)

ANSWER: 030 (1.00)
d.
REFERENCE:
TRHB 11.4 pp 7, 9
New
Higher
054AA203 ..(KA's)

ANSWER: 031 (1.00)
b.
REFERENCE:
CSP H.1
Bank
Memory
2.4.6 ..(KA's)

ANSWER: 032 (1.00)
b.
REFERENCE:
RMSASRB CI 1RE-229
AOP-4A RAM 3.1
Bank
Memory
059AK301 ..(KA's)

ANSWER: 033 (1.00)
c.
REFERENCE:
OM 3.7
Bank
Higher

ANSWER: 034 (1.00)
c.
REFERENCE:
Westinghouse 883D195
Logic Sheet #18 ARB 1C04
1C 2-3
New
Higher
2.4.31 ..(KA's)

ANSWER: 035 (1.00)
d.
REFERENCE:
FSAR Chapter 14
New
Memory
036AK302 ..(KA's)

ANSWER: 036 (1.00)
a.
REFERENCE:
BG-CSP-ST.0 CSP-ST.0
Bank
Memory

ANSWER: 037 (1.00)
a.
REFERENCE:
TRHB 13.8 OP-1C Figure 1
Bank
Higher
001A303 ..(KA's)

ANSWER: 038 (1.00)
c.
REFERENCE:
MDB 3.2.2 - 2A01
New
Higher
003K201 ..(KA's)

ANSWER: 039 (1.00)
a.
REFERENCE:
FSAR 14.1.8 TRHB Fig.
13.6.2 DBD-07 pp 2-17
New Higher
003A105 ..(KA's)

ANSWER: 040 (1.00)
a.
REFERENCE:
DBD-04 pp 3, Figure 1-1
Bank Higher
004K308 ..(KA's)

ANSWER: 041 (1.00)
a.
REFERENCE:
DBD-04
New
Higher
004K507 ..(KA's)

ANSWER: 042 (1.00)
d.
REFERENCE:
MDB 3.2.2, 3.2.4
Bank
Higher
013A403 ..(KA's)

ANSWER: 043 (1.00)
a.
REFERENCE:
FSAR Chapter 6.4 DBD-24
STPT 2.3
New
Higher
2.1.31 ..(KA's)

ANSWER: 044 (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: 045 (1.00)
c.
REFERENCE:
TRHB 13.1 GP Theory
Chapter 4 EOP-0, EOP-1.3,
CSP-S.2 CSP-ST.0 Figure 1
New
Higher
015A205 ..(KA's)

ANSWER: 046 (1.00)
d.
REFERENCE:
EOP 1.2
Bank
Higher
017A301 ..(KA's)

ANSWER: 047 (1.00)
d.
REFERENCE:
MDB 3.2.3 Panel 1B04
Bank
Memory
022K201 ..(KA's)

ANSWER: 048 (1.00)
d.
REFERENCE:
ITS Bases 3.6.6 CSP-ST.0
Figure 5
Modified
Higher
022A204 ..(KA's)

ANSWER: 049 (1.00)
b.
REFERENCE:
STPT 14.2
Bank
Memory
056K301 ..(KA's)

ANSWER: 050 (1.00)
d.
REFERENCE:
FSAR 10.1-8
Bank
Memory
2.1.27 ..(KA's)

ANSWER: 051 (1.00)
b.
REFERENCE:
DBD-03 Section 3.2.4
Bank
Memory
059A306 ..(KA's)

ANSWER: 052 (1.00)
d.
REFERENCE:
STPT 5.4 ARO 1C03 1E2 2-3
New
Higher
059A411 ..(KA's)

ANSWER: 053 (1.00)
b.
REFERENCE:
FSAR Table 7.3-1 FSAR
Chapter 10.2
Bank
Higher
061K101 ..(KA's)

ANSWER: 054 (1.00)
d.
REFERENCE:
OI-62B
Bank
Memory
061K406 ..(KA's)

ANSWER: 055 (1.00)
c.
REFERENCE:
ODCM Table 2-1/Fig. 2-1
RMSASRB
Bank
Memory
068A302 ..(KA's)

ANSWER: 056 (1.00)
b.
REFERENCE:
WEST 684J972 sh.1
New
Memory
071K305 ..(KA's)

ANSWER: 057 (1.00)
d.
REFERENCE:
ODCM Table 2-2/Figure 2-2
OP-9D
Bank
Memory
071K404 ..(KA's)

ANSWER: 058 (1.00)
d.
REFERENCE:
OI-90
Bank
Memory
072K101 ..(KA's)

ANSWER: 059 (1.00)
b.
REFERENCE:
HP Fundamentals (ABB CE
Nuclear Power)
Bank
Higher
072K501 ..(KA's)

ANSWER: 060 (1.00)
d.
REFERENCE:
OP-1C M-202 sh. 2
New
Higher
002K511 ..(KA's)

ANSWER: 061 (1.00)
d.
REFERENCE:
DBD-11 Sec. 3.12.4
Bank
Memory
006K417 ..(KA's)

ANSWER: 062 (1.00)
b.
REFERENCE:
Setpoint Study (WCAP 7377)
WEST 883D195 sh. 18
EOP-1 and B/G Doc.
Bank
Higher
010K102 ..(KA's)

ANSWER: 063 (1.00)
b.
REFERENCE:
TRHB 13.6 pg 3 AOP-24
New
Higher
011A206 ..(KA's)

ANSWER: 064 (1.00)
d.
REFERENCE:
TRHB 13.3
Bank
Higher
012K606 ..(KA's)

ANSWER: 065 (1.00)
a.
REFERENCE:
General Physics - Thermo
Chapter 7
Bank
Higher
012A101 ..(KA's)

ANSWER: 066 (1.00)
a.
REFERENCE:
TRHB 13.13
Bank
Memory
014A103 ..(KA's)

ANSWER: 067 (1.00)
a.
REFERENCE:
DBD-11
Bank
Memory
026K406 ..(KA's)

ANSWER: 068 (1.00)
c.
REFERENCE:
RMSARB CI 2RE-305
RMSARB 1.0 LP2395
Bank
Memory
029K403 ..(KA's)

ANSWER: 069 (1.00)
c.
REFERENCE:
AOP-8F
New
Higher
2.4.24 ..(KA's)

ANSWER: 070 (1.00)
b.
REFERENCE:
FSAR Chapter 14.1.6
Bank
Higher
035K501 ..(KA's)

ANSWER: 071 (1.00)
b.
REFERENCE:
M-201 Sh. 1
Bank
Memory
039K109 ..(KA's)

ANSWER: 072 (1.00)
c.
REFERENCE:
ARB 1C03 1F 1-5
Bank
Higher
055A201 ..(KA's)

ANSWER: 073 (1.00)
b.
REFERENCE:
WEST 883D195 Shs. 4, 6, 6a
Bank
Higher
062K302 ..(KA's)

ANSWER: 074 (1.00)
a.
REFERENCE:
AOP 0.0
Modified
Memory
063K201 ..(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)
b.
REFERENCE:
MDB 3.2.0, 3.2.1, 3.2.5, 3.2.6
AOP-5A
Modified
Higher
075A202 ..(KA's)

ANSWER: 078 (1.00)
c.
REFERENCE:
AOP-5B
Bank
Memory
079K401 ..(KA's)

ANSWER: 079 (1.00)
a.
REFERENCE:
CSP-H.1 Foldout page
AOP-23
Bank
Memory
086K103 ..(KA's)

ANSWER: 080 (1.00)
a.
REFERENCE:
WEST 110E018 Sh. 1
Bank
Higher
005A101 ..(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)
c.
REFERENCE:
AOP-9B
New
Memory
008A201 ..(KA's)

ANSWER: 083 (1.00)
d.
REFERENCE:
LP0035
Bank
Memory
041A404 ..(KA's)

ANSWER: 084 (1.00)
a.
REFERENCE:
ARB 1C03 1E1 4-1/1F 3-7/1F 1-7/1E1 4-3
Bank
Memory
045K120 ..(KA's)

ANSWER: 085 (1.00)
d.
REFERENCE:
WEST 883D195 sh. 8, 9
Bank
Memory
076A404 ..(KA's)

ANSWER: 086 (1.00)
a.
REFERENCE:
DBD-07 Sec 3.3.1
Bank
Memory
078K105 ..(KA's)

ANSWER: 087 (1.00)
a.
REFERENCE:
DBD-24 TRHB 10.16
Bank
Higher
103A301 ..(KA's)

ANSWER: 088 (1.00)
b.
REFERENCE:
FSAR 14.1.7
Bank
Higher
2.1.7 ..(KA's)

ANSWER: 089 (1.00)
c.
REFERENCE:
ITS 3.2.1 Bases
Bank
Memory
2.1.10 ..(KA's)

ANSWER: 090 (1.00)
a.
REFERENCE:
CSP-S.1 & B/G Doc.
Bank
Higher
2.1.20 ..(KA's)

ANSWER: 091 (1.00)
d.
REFERENCE:
DBD-11 Sec 2.2.12
Bank
Memory
2.1.31 ..(KA's)

ANSWER: 092 (1.00)
b.
REFERENCE:
ITS 2.0
Bank
Higher
2.2.22 ..(KA's)

ANSWER: 093 (1.00)
d.
REFERENCE:
RP-1C OM 3.10
New
Memory
2.2.30 ..(KA's)

ANSWER: 094 (1.00)
a.
REFERENCE:
HP 3.2
Bank
Higher
2.3.1 ..(KA's)

ANSWER: 095 (1.00)
b.
REFERENCE:
NP 4.2.1
Bank
Memory
2.3.2 ..(KA's)

ANSWER: 096 (1.00)
d.
REFERENCE:
HP 1.11.1
Bank
Memory
2.3.10 ..(KA's)

ANSWER: 097 (1.00)
b.
REFERENCE:
STPT 1.1 WEST 883D195
sh. 11
New
Higher
2.4.2 ..(KA's)

ANSWER: 098 (1.00)
b.
REFERENCE:
SEP-3.0
Bank
Higher
2.4.5 ..(KA's)

ANSWER: 099 (1.00)
b.
REFERENCE:
BG-EOP-1.2
Bank
Memory
2.4.20 ..(KA's)

ANSWER: 100 (1.00)
d.
REFERENCE:
EOP-0
Bank
Higher
2.4.21 ..(KA's)

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

A N S W E R K E Y
MULTIPLE CHOICE

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

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