



GULF STATES UTILITIES COMPANY

RIVER BEND STATION POST OFFICE BOX 220 ST. FRANCISVILLE, LOUISIANA 70775
AREA CODE 504 635-6084 346-8651

February 19, 1993

RBG- 38167

File No. G9.5, G15.4.1

Mr. James L. Milhoan
Regional Administrator
U.S. Nuclear Regulatory Commission
Region IV
611 Ryan Plaza Drive, Suite 400
Arlington, TX 76011

River Bend Station - Unit 1
Docket No. 50-458/92-99

Dear Mr. Milhoan,

Gulf States Utilities Company review comments for the NRC written examinations given at River Bend Station on January 25, 1993 are enclosed. These comments have been previously provided to Mr. Steve McCrory of your office. If there are any questions concerning our comments please call Mr. Rick Jackson at (504) 381-4211.

Sincerely,

J.E. Booker
Manager - Safety Assessment and
Quality Verification
River Bend Nuclear Group

LAE/DNL/KDG/kvm

93-0779

QUESTION # 64 SRO**COMMENT:**

All distractors are items which "should" be logged in the control room log. Step 5.1.3 provides a list of such items (OSP-3). Any failed I&C surveillance (system testing) has Technical Specification implications. Maintenance with no direct Technical Specifications implications for operability are called PMs. Regardless, item 2 requires major equipment and system testing to be logged and unsatisfactory results would be an expected part of that entry.

RECOMMENDATION:

Delete this question.

QUESTION # 85 SRO**COMMENT:**

Both a and ^d are correct. LPRM strings are inside the dry tube and are external to the reactor pressure vessel. Normal movement of IRM detector is specifically allowed by Technical Specification definition.

RECOMMENDATION:

Accept either a or ^d.

5.1.3. The following types of entries should be recorded:

1. Reportable occurrences or potential for reportable occurrences.
2. Major equipment and system testing.
3. Personnel accidents or injuries.
4. Offsite calls to/from NRC, upper management, or other regulatory officers concerning significant events.
5. Occurrences of significant events, such as reactor scrams or unexpected power changes.
6. Implementation of the Radiological Emergency Plan.
7. Security incidents.
8. Out-of-specification chemistry results.
9. Pertinent miscellaneous information.
10. Mode changes.
11. Load changes.
12. Reactivity changes (other than during startup and shutdown).
13. Major equipment status changes.
14. Safety-related and other important equipment maintenance in progress.
15. Entering a technical specification action statement.
16. Leaving a technical specification action statement.
17. Pertinent miscellaneous information.
18. Notifications and correspondence with Government Street, Beaumont, and Cajun System Operators.

5.1.4. The first entry by the On-coming Operator should be a stamp which includes the operating status of the unit.

5.1.5. The last log entry of the Off-going operator will be a statement including name of On-coming relief (i.e. Relieved by ...).

5.2 Turbine Building Logsheet

5.2.1. The Turbine Building Logsheets should be maintained by the Nuclear Equipment Operator assigned to the Turbine Building.

5.2.2. Completed logsheet will be forwarded to the Control Room for review and retention per OSP-0012 DAILY LOG REPORT.

5.3 Auxiliary Building Logsheet

5.3.1. The Auxiliary Building Logsheets should be maintained by the Nuclear Equipment Operator assigned to the Auxiliary Building.

5.3.2. Completed logsheets will be forwarded to the Control Room for review and retention per OSP-0012 DAILY LOG REPORT.

ATTACHMENT 3

WRITTEN EXAMINATION KEYS

U. S. NUCLEAR REGULATORY COMMISSION
SITE SPECIFIC EXAMINATION
REACTOR OPERATOR LICENSE
REGION 4

CANDIDATE'S NAME: _____
FACILITY: River Bend 1
REACTOR TYPE: BWR-GE6
DATE ADMINISTERED: 93/01/25

INSTRUCTIONS TO CANDIDATE:

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

<u>TEST VALUE</u>	<u>CANDIDATE'S SCORE</u>	<u>%</u>	
<u>98.00</u>		<u> </u> %	TOTALS
	<u>FINAL GRADE</u>		

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

Candidate's Signature

NRC RULES AND GUIDELINES FOR LICENSE EXAMINATIONS

During the administration of this examination the following rules apply:

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

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

QUESTION: 001 (1.00)

A transient is in progress. Which one of the following sets of plant conditions requires the Shift Supervisor to direct an Emergency RPV Depressurization?

RPV PRESSURE	SUPPRESSION POOL TEMPERATURE	SUPPRESSION POOL LEVEL
a. 1000 psig	130 deg F	18.5 feet
b. 800 psig	137 deg F	19.0 feet
c. 400 psig	153 deg F	17.0 feet
d. 100 psig	161 deg F	16.5 feet

QUESTION: 002 (1.00)

Which one of the following describes the plant response to the loss of ONE steam flow signal while operating in a normal 100% power configuration?

- a. Reactor level will increase causing the Main Turbine and Feed Pumps to trip.
- b. Reactor level will increase and stabilize at a higher level below the Main Turbine and Feed Pump trip setpoint.
- c. Reactor level will decrease causing the reactor to scram on low water level.
- d. Reactor level will decrease and stabilize at a lower level above the scram trip setpoint.

QUESTION: 003 (1.00)

A LOCA has resulted in the automatic start of the HPCS system and injection into the vessel. During the transient, the operator closed HPCS Injection Valve (IE22*F004) using the control switch when the following conditions existed:

Reactor water level = +50 inches
Condensate Storage Tank Level = 100 feet (Mean Sea Level)
Suppression Pool Level = 19 feet 4 inches

Which one of the following describes the automatic response of the HPCS Suppression Pool Suction Isolation Valve (IE22*F015) and the HPCS Injection Valve (IE22*F004) when reactor water level decreases to -50 inches and CST level decreases to 1 foot (96 foot mean sea level elevation)? (Assume NO operator action.)

	SUPPRESSION POOL SUCTION ISOLATION VALVE (F015)	INJECTION VALVE (F004)
a.	opens	opens
b.	Remains closed	opens
c.	Remains closed	Remains closed
d.	opens	Remains closed

QUESTION: 004 (1.00)

A LOCA has occurred and LPCS is injecting automatically. Which one of the following states the two methods of manually controlling reactor water level using LPCS?

- a. Stop the LPCS pump with the pump control switch or throttle the LPCS Injection Isolation Valve (IE21*F005) open/closed.
- b. Stop the LPCS pump with the pump control switch or throttle the LPCS Injection Isolation Valve (IE21*F005) closed only.
- c. Throttle the Test Return Valve (IE21*F012) open/closed or throttle the LPCS Injection Isolation Valve (IE21*F005) closed only.
- d. Throttle the Test Return Valve (IE21*F012) open/closed or throttle the LPCS Injection Isolation Valve (IE21*F005) open/closed.

QUESTION: 005 (1.00)

Which one of the following Offgas system malfunctions will result in increased radioactive releases?

- a. Wetted recombiner catalyst resulting in ignition in the charcoal adsorbers due to a high hydrogen concentration.
- b. Increased steam flow to the SJAE resulting in a high flow rate through the offgas system to the plant stack.
- c. Initiation of an air purge during at power operation of the offgas system resulting in activation of argon and nitrogen.
- d. Decreased steam flow to the SJAE resulting in higher charcoal adsorber temperatures due to decreased steam cooling.

QUESTION: 006 (1.00)

The HPCS 125 VDC Switchgear 1E22-S001 is being supplied by the Backup Battery Charger 1BYS-CHGR1D. Which one of the following describes the HPCS 125 VDC Switchgear status if a LOCA occurs?

- a. The backup power supply breaker to the HPCS DC system will trip leaving the HPCS battery as the only power source.
- b. The Backup battery charger will continue to supply the HPCS DC system loads and the battery will act as a backup.
- c. The Backup battery charger will be load shed from its non-safety related power supply and must be manually aligned to a 480 VAC Standby bus.
- d. The HPCS DC system will be supplied by the HPCS battery with the Backup Battery Charger available on a low battery voltage condition

QUESTION: 007 (1.00)

Which one of the following actions could be taken to minimize the thermal stress transients on the feedwater nozzles during low feedwater flow conditions during a reactor startup?

- a. Decrease RWCU system reject rate to the main condenser and maximize RWCU system temperature.
- b. Increase RWCU system reject rate to the main condenser and maximize RWCU system temperature.
- c. Increase Condensate system cleanup return flow rate to the main condenser.
- d. Decrease Condensate system cleanup return flow rate to the main condenser.

QUESTION: 008 (1.00)

Following the receipt of an automatic reactor scram signal, 10 control rods remained partially withdrawn. The plant conditions are as follows:

- The scram valves on the 10 control rods indicate open
- Reactor pressure is 950 psig
- ARI has been manually initiated

Which one of the following actions would provide a different method beyond those above to insert the 10 control rods?

- a. Pull the RPS scram fuses to de-energize the HCU scram solenoids.
- b. Start both CRD pumps and fully open FCV and PCV.
- c. Reset ARI and vent the scram air header.
- d. Vent the CRD over piston volumes.

QUESTION: 009 (1.00)

Following a small LOCA, RCIC is operating normally and injecting to the RPV when a RCIC turbine trip occurs. Which one of the following caused the RCIC turbine to trip?

- a. High containment pressure.
- b. High RPV water level.
- c. High drywell pressure.
- d. High gland seal exhaust pressure.

QUESTION: 010 (1.00)

Which one of the following describes why reactor level instrumentation indications are inaccurate when in the UNSAFE region of the RPV Saturation Curve?

- a. High containment temperatures will result in boiling of the reference legs causing an erroneously LOW level indication.
- b. High containment temperatures will result in boiling of the variable legs causing an erroneously LOW level indication.
- c. High drywell temperatures will result in boiling of the reference legs causing an erroneously LOW level indication.
- d. High drywell temperatures will result in boiling of the variable legs causing an erroneously HIGH level indication.

QUESTION: 011 (1.00)

Which one of the following maintains a negative pressure in the annulus following a LOCA?

- a. SGTS starts and takes a suction on the Annulus Pressure Control System.
- b. Annulus mixing fans start and discharge to the Annulus Pressure Control System.
- c. Annulus mixing fans start and discharge to the SGTS.
- d. SGTS starts and aligns to take a suction directly from the Annulus.

QUESTION: 012 (1.00)

The reactor is in Cold Shutdown, the RPV head bolts are tensioned, and reactor water level is +58 inches. Which one of the following is an adverse consequence that can result from thermal stratification during a complete loss of shutdown cooling?

- a. Inadequate circulation for coolant purification by RWCU.
- b. Fuel cladding damage due to inadequate coolant flow.
- c. RPV temperature decrease below Technical Specification limits.
- d. Inadvertent RPV pressurization.

QUESTION: 013 (1.00)

Which one of the following is the method that an operator should use to verify remote shutdown EJs breaker position per AOP-0031, "Shutdown From Outside the Main Control Room?"

- a. Local mechanical red/green position indicating flags.
- b. Local red/green position indicating lights.
- c. Observation of proper local voltage meter indication.
- d. Observation of a local current ammeter indication.

QUESTION: 014 (1.00)

The unit is operating at 80% rated power when a complete loss of instrument air occurs. Which one of the following causes the Feedwater Pumps to TRIP?

- a. The condensate and heater drain pumps minimum recirc valves fail open.
- b. The feedwater pump discharge valve locks up and then drifts closed.
- c. The feedwater pump suction valve drifts closed.
- d. The feedwater heater dump valves fail open.

QUESTION: 015 (1.00)

The unit is operating at power when a break in the Instrument Air Header results in a continuous decrease in instrument air pressure. Which one of the following explains how the control rods will be inserted into the core?

- a. The SDV vent and drain valves close and a scram signal is initiated on a high SDV level.
- b. The control rods scram individually into the core as the air pressure becomes insufficient to hold the scram valves closed.
- c. RPS scrams the control rods into the core when the instrument air header pressure decreases to less than or equal to 65 psig.
- d. The operator manually scrams the reactor when he observes more than one CRD accumulator trouble alarm on the rod display panel.

QUESTION: 016 (1.00)

Which one of the following plant conditions will result in the initiation of a control rod withdrawal block?

- a. The IRM detector is full OUT and the Reactor Mode Switch is in RUN.
- b. The IRM detector is full IN and the Reactor Mode Switch is in STARTUP.
- c. The IRM detector is withdrawn 1/3 of the way out of the core and the Reactor Mode Switch is in RUN.
- d. The IRM detector is inserted 1/3 of the way into the core and the Reactor Mode Switch is in STARTUP.

QUESTION: 017 (1.00)

A CONTROL ROD WITHDRAWAL BLOCK alarm has been received and SRM A amber UPSCALE OR INOP status light is on. Which one of the following conditions/operator actions will bypass the rod block?

- a. Reactor mode switch in Shutdown.
- b. Reactor mode switch in Refuel.
- c. IRMs A and E are on or above Range 3.
- d. IRMs A and E are on or above Range 8.

QUESTION: 018 (1.00)

The reactor has been operating near rated power for 200 days. Which one of the following describes the change in the indicated LPRM output signal from day 1 to day 200 and the method used to calibrate the LPRMs?

INDICATED LPRM POWER		METHOD OF LPRM CALIBRATION
a.	Decreases	Core Heat Balance
b.	Decreases	TIP System Trace
c.	Increases	Core Heat Balance
d.	Increases	TIP System Trace

QUESTION: 019 (1.00)

River Bend Station is at 70% reactor power and pressure controller "A" is in control. Which one of the following Electro-Hydraulic Control (EHC) System failures would result in a high reactor pressure transient (i.e. bypass valves and control valves close)?

- a. pressure controller "A" fails high
- b. pressure setpoint fails high
- c. pressure controller "A" fails low
- d. pressure setpoint fails low

QUESTION: 020 (1.00)

During a major transient requiring use of the EOPs the following plant conditions exist:

- Containment temp ----- 205 deg.F
- Drywell temp ----- 285 deg.F
- Reactor pressure ----- 200 psig

Which one of the following indications is reliable RPV level information?

- a. Narrow range indicates +12"
- b. Upset range indicates +21"
- c. Wide range indicates -120"
- d. Fuel zone indicates -116"

QUESTION: 021 (1.00)

Which one of the following would be indicative of a loss of air to the on-line Control Rod Drive (CRD) flow control valve?

- a. CRD cooling water high differential pressure.
- b. CRD high temperature
- c. HCU accumulator low pressure
- d. low charging water pressure

QUESTION: 022 (1.00)

The RCIC oil pump has failed (unknown to the operator). Which one of the following describes how the RCIC system will respond upon receipt of an initiation signal?

- a. The system will not start (ES1*F045 Steam Supply remains closed)
- b. The turbine will trip on overspeed
- c. The turbine will run continuously at minimum speed until the turbine bearings fail
- d. The turbine will run continuously at approximately 4500 rpm until the turbine bearings fail

QUESTION: 023 (1.00)

A reactor plant startup is in progress. For which one of the following conditions will the RCIS PRERMIT control rod movement. (NOTE: "A" SEQUENCE IS SELECTED WHEN SEQUENCE REQUIRED)

- a. Group 1 is fully withdrawn. Group 2 is still fully inserted. A withdrawal attempt is made on a control rod in Group 3.
- b. Groups 1 and 2 are fully withdrawn, and a control rod in Group 3 is selected. An attempt is made to fully withdraw the rod.
- c. Groups 1-4 are fully withdrawn. The next control rod selected is in Group 7 and a one-notch withdrawal is attempted.
- d. Reactor power is 75% and an attempt is made to withdraw the selected control rod three (3) notches.

QUESTION: 024 (1.00)

Which one of the following INDICATIONS would you expect to see as a result of a "Jet Pump Riser Failure"? Assume RECIRC FLOW CONTROL is in FLUX MANUAL.

- a. A DECREASE in reactor (APRM) power, a DECREASE in the Failed Jet Pump Flow, and a DECREASE in Core Differential Pressure.
- b. A DECREASE in core differential pressure, an INCREASE in Reactor Power, and an INCREASE in Indicated Core Flow.
- c. A DECREASE in failed Jet Pump flow, an INCREASE in indicated Core Flow, and a DECREASE in Core Differential Pressure.
- d. An INCREASE in indicated core flow, an INCREASE in Failed Jet Pump Flow, and an INCREASE in Reactor Power.

QUESTION: 025 (1.00)

For which one of the following abnormal conditions would the LPCS inject into the reactor vessel at LESS THAN acceptable flow rate with a valid initiation signal and Reactor pressure at 50 psig?

- a. Pump suction valve from the Suppression Pool, 1E21*F001, is shut.
- b. LPCS Flow transmitter, FT-N003, fails 'HIGH'.
- c. 25% of the suction strainer area has become clogged by debris.
- d. Control power is lost to 1E21*F011 prior to the initiation signal.

QUESTION: 026 (1.00)

SLC System A is in a normal STANDBY lineup but with the TEST TANK OUTLET VALVE (C41*F031) OPEN. Which of the following most accurately describes the effects on the STORAGE TANK OUTLET VALVE (F001) and SLC PUMP A of placing the SLC Keylock Control Switch for Pump A to START?

- a. Valve F001 Opens - SLC Pump A Starts after the valve reaches its Full Open position.
- b. Valve F001 Opens - SLC Pump A starts concurrently with the valve opening.
- c. Valve F001 does Not Open - SLC Pump A Starts
- d. Valve F001 does Not Open - SLC Pump A does Not Start

QUESTION: 027 (1.00)

Which one of the following automatic closure signals may be bypassed to prevent MSIV closure during an ATWS condition with emergency depressurization not required?

- a. Low reactor level
- b. High main steam line flow
- c. Main steam line high radiation
- d. Main steam line tunnel high temperature

QUESTION: 028 (1.00)

During power operation with Mode Switch in RUN, an event has resulted in the following conditions:

RPV level decrease to 6"
RPV pressure has reached 1075 psig
Drywell pressure has reached 1.2 psig.

Which one of the following is the correct status of the valve solenoids indicated? No manual actions have been taken.

	SCRAM	BACKUP SCRAM	ARI
a.	deenergized	deenergized	deenergized
b.	deenergized	energized	deenergized
c.	deenergized	energized	energized
d.	energized	deenergized	deenergized

QUESTION: 029 (1.00)

With the following initial EHC conditions, the pressure control unit input for main steam changes from 944 psig to 941 psig.

- recirculation flow control in loop manual
- normal condenser vacuum
- pressure setpoint at 920 psig
- load limit setpoint at 75%
- bypass jack at 0%
- maximum combined flow limiter at 100%

Which one of the following correctly describes how the control valve reference signal (CV) and bypass valve flow reference (B/P) will CHANGE?

- a. CV increase and B/P increase
- b. CV increase and B/P decrease
- c. CV decrease and B/P increase
- d. CV decrease and B/P decrease

QUESTION: 030 (1.00)

The HPCS discharge line fill pump has failed allowing the HPCS discharge piping to drain. Which one of the following describes the worst consequence if the HPCS System is initiated under these conditions?

- a. Insufficient HPCS pump minimum flow.
- b. Inability of the HPCS System to reach rated flow.
- c. Damage to the HPCS piping due to water hammer.
- d. Damage to the HPCS pump impeller due to cavitation.

QUESTION: 031 (1.00)

Which one of the following is the shift standing periodicity required of a licensed operator to maintain his/her license in an "active" status per the regulations of 10 CFR 55 "Operators' Licenses"?

- a. Seven 8 hour shifts or five 12 hour shifts per calendar month.
- b. Seven 8 hour shifts or five 12 hour shifts per calendar quarter.
- c. Five 8 hour shifts or four 12 hour shifts per calendar month.
- d. Five 8 hour shifts or four 12 hour shifts per calendar quarter.

QUESTION: 032 (1.00)

Which one of the individuals below is NOT permitted to operate reactor controls under the instruction or supervision of a licensed operator?

- a. Auxiliary operator enrolled in a current license training course to obtain an operator license.
- b. Individual enrolled in a current license training course to obtain an SRO instructor certification.
- c. A licensed reactor operator whose license has become inactive.
- d. A licensed reactor operator who recently failed an NRC administered Senior Reactor Operator upgrade examination.

QUESTION: 033 (1.00)

The unit is operating at power when a COMPLETE loss of Turbine Plant Component Cooling Water (CCS) occurs. Which one of the following lists the critical equipment lost that requires the operator to scram the reactor per AOP-0012, Loss of Turbine Plant Component Cooling?

- a. Auxiliary boiler recirc pumps and offgas refrigeration units.
- b. Condenser air removal and generator stator cooling pumps.
- c. Heater drain and condenser air removal pumps.
- d. Reactor feedwater and condensate pumps.

QUESTION: 034 (1.00)

The unit is operating at 100% rated power when a Loss of Offsite Power occurs. Which one of the following states the IMMEDIATE operator action required by the Abnormal Operating Procedures?

- a. Take manual control of the feedwater regulating valves.
- b. Manually start RCIC.
- c. Manually trip the main turbine.
- d. Open designated SRVs.

QUESTION: 035 (1.00)

Which one of the following describes the sequence in which the Emergency loads will be loaded onto the Emergency Diesel Generators following a complete Loss of Offsite Power concurrent with a high drywell pressure condition?

- a. RHR A and B, LPCS and RHR C, Containment Unit Cooler, SFC pumps A and B, and Standby Service Water pumps.
- b. RHR A and B, LPCS and RHR C, Containment Unit Cooler, Standby Service Water cooling tower fans, and SGTS and annulus mixing fan.
- c. LPCS and RHR C, RHR A and B, SGTS and annulus mixing fan, Standby Service Water pumps, and Containment Unit Cooler.
- d. LPCS and RHR C, SLC pumps A and B, RHR A and B, Standby Service Water pumps, and Containment Unit Cooler.

QUESTION: 036 (1.00)

Which one of the following describes the operation of the CRDM Individual Rod Scram Test switches when placed in the TEST position?

- a. Either test switch deenergizes a single test solenoid to allow the air to vent from the scram inlet and outlet valves.
- b. Either test switch deenergizes both RPS A and RPS B pilot solenoids to allow the air to vent from the scram inlet and outlet valves.
- c. One test switch deenergizes RPS A pilot solenoid and the other test switch deenergizes the RPS B pilot solenoid to allow the air to vent from the pilot valve.
- d. One test switch deenergizes a test solenoid to allow the scram inlet valve to vent and the other test switch deenergizes a test solenoid to allow the scram outlet valve to vent.

QUESTION: 037 (1.00)

Which one of the following is the reason for initiating an automatic SCRAM for a CRD SCRAM DISCHARGE VOLUME (SDV) HIGH WATER LEVEL?

- a. The SDV is nearly filled and a scram will be ineffective due to a hydraulic lock.
- b. The SDV Instrument Volume is nearly filled and a scram will insert all rods before a hydraulic lock occurs.
- c. The SDV is filling with water and a scram is automatically initiated to prevent water hammer damage to the scram valves and the CRDM.
- d. The SDV Instrument Volume is filling with water and a scram is automatically initiated to prevent water hammer damage to the scram valves and the CRDM.

QUESTION: 038 (1.00)

Following a reactor scram from high power levels there is an initial RPV level decrease (shrink) followed by an increase (swell). Which one of the following is the correct operator response to the changing RPV level in accordance with GOP-0003, "Scram Recovery."

- a. Verify the feedwater level control system automatically responds.
- b. Verify the main turbine is controlling reactor pressure.
- c. Immediately switch the feedwater level control system to single element control.
- d. Trip the main feedwater pumps.

QUESTION: 039 (1.00)

The RCIC flow transmitter has failed low (0 gpm). Which one of the following best describes how the RCIC turbine will respond upon receipt of an initiation signal?

- a. The system will not start (F045 Steam Supply remains closed)
- b. The turbine will trip on overspeed
- c. The turbine will run continuously at minimum speed
- d. The turbine will run continuously at approximately 4500 rpm

QUESTION: 040 (1.00)

The LPCS system piping inside the reactor vessel is monitored for integrity by the measurement of the pressure differential between the LPCS injection piping inside the drywell and:

- a. the A RHR system injection piping inside the drywell.
- b. the above core plate pressure tap inside the drywell.
- c. the HPCS injection piping inside the drywell.
- d. the SLC injection line below core plate pressure tap inside the drywell.

QUESTION: 041 (1.00)

Which one of the following, in combination with Turbine Control Valve fast closure or Turbine Stop valve closure will initiate an EOC-RPT function?

- a. >40% power by APRMs
- b. >40% power by Steam Cross-Around pressure
- c. >40% power by Turbine First Stage pressure
- d. >40% power by P-1 Heat Balance

QUESTION: 042 (1.00)

A mandatory work assignment must be completed near a high level radiation source which cannot be shielded. Under guidelines of OMP 0.32.2, "ALARA Work Review", which one of the following would be the preferred method of completing the assignment?

- a. One man who will receive a dose of 250 mr.
- b. Two men who will each receive a dose of 130 mr.
- c. Two men who will receive doses of 150 mr and 110 mr respectively.
- d. Three men who will each receive a dose of 90 mr.

QUESTION: 043 (1.00)

Refueling is in progress when the Refueling Cavity/Upper Containment Pool develops a leak beyond the capacity of the Fuel Pool Cooling and Cleanup system. An irradiated fuel bundle in the refueling cavity will be uncovered before it can be moved to a safe location. Which one of the following is the FIRST CHOICE for restoring pool water level in the condition above?

- a. Condensate system via feedwater injection lines.
- b. HPCS with suction from the suppression pool.
- c. Standby service water via RHR loop B injection path.
- d. Standby service water crosstie to FPC heat exchanger.

QUESTION: 044 (1.00)

The following conditions exist during refueling activities:

Fuel reload	complete
RHR loop A	operating in shutdown cooling
RHR loop B	in standby
Reactor vessel level	23.5 feet above vessel flange

A fire occurs the RHR pump B breaker rendering it inoperable. It is further noted that no alternate means of decay heat removal is available. Which one of the following is correct regarding satisfying the Technical Specification Limiting Condition for Operation?

- a. The LCO is satisfied because water level is >23 feet above the vessel flange and RHR ~~A~~₄ is operating in shutdown cooling.
- b. The LCO is satisfied because NO shutdown cooling is required to be in operation as long as water level is >23 feet above the vessel flange.
- c. The LCO is NOT satisfied because two loops of RHR are not operable.
- d. The LCO is NOT satisfied because no alternate means of decay heat removal is available.

QUESTION: 045 (1.00)

Following a trip on one Reactor Recirc pump the following conditions exist:

Reactor power	63%
Total core flow	37.5 x 10E6 lbm/hr

Which one of the following actions must be initiated?

- a. Reduce reactor power to less than or equal to 45% with control rod insertion.
- b. Reduce reactor power to less than or equal to 52% with control rod insertion.
- c. Reduce total core flow to less than 45% with the operating loop flow controller.
- d. Reduce total core flow to less than 55% with the operating loop flow controller.

QUESTION: 046 (1.00)

With the plant at 80% power a control rod begins to drift outward producing the expected alarms. The drive and exhaust water isolation valves are then shut but the rod continues to drift outward. Which one of the following is the most probable cause of continuing rod drift?

- a. CRD drive pressure is too high.
- b. Directional control valve 122 has failed.
- c. The collet piston is stuck.
- d. Cooling water pressure is too high.

QUESTION: 047 (1.00)

EOP-2 requires containment to be vented when containment pressure reaches 20 psig. Which one of the following describes the flow path for emergency venting of the containment?

- a. Drywell/Containment purge system takes a suction on containment and discharges through filter train #6 to the main stack.
- b. Hydrogen purge discharges to the annulus and the annulus mixing system is in operation discharging to SGTS.
- c. Drywell/Containment purge fan takes a suction on containment and discharges through the purge exhaust fans to the main stack.
- d. Hydrogen purge discharges through the Drywell/Containment purge system filter train #6 to the main stack.

QUESTION: 048 (1.00)

Which one of the following is the reason that EOP-3, Secondary Containment Control, directs scrambling the reactor if any Secondary Containment area parameter cannot be maintained below its MAXIMUM SAFE operating value?

- a. To reduce stored energy in the RPV.
- b. To reduce gaseous activity levels in the RPV.
- c. To ensure that the reactor can be made subcritical by the insertion of all control rods.
- d. To ensure the reactor is shutdown prior to initiating a rapid reactor depressurization.

QUESTION: 049 (1.00)

Which one of the following is the purpose of maintaining suppression pool level within the Heat Capacity Level Limit (HCLL)?

- a. To prevent evaporation of the pool level to below the drywell to containment horizontal vents during emergency RPV depressurization.
- b. To ensure a minimum of two feet of water is maintained above the SRV tailpipes for quenching any steam that is discharged from the SRVs.
- c. To prevent exceeding the temperature limit of the suppression pool during an emergency RPV depressurization.
- d. To ensure an adequate source of water is maintained for all low pressure ECCS to provide adequate core cooling.

QUESTION: 050 (1.00)

In EOP-2, Step 1 of Drywell Temperature Control directs the operator to "Monitor and control Drywell temperature below 145 deg F, using available Drywell cooling." Which one of the following defines AVAILABLE in this step?

- a. Fans/coolers that have been environmentally qualified.
- b. Fan/coolers that meet Technical Specification Operability requirements.
- c. Fan/coolers that have operable electrical power supplies.
- d. Fans/coolers that have the necessary support systems operable.

QUESTION: 051 (1.00)

A reactor startup is in progress and reactor pressure is 800 psig. A loss of both CRD pumps has resulted in the receipt of the CRD ACCUMULATOR TROUBLE alarm. The nitrogen pressure on one of the CRD HCUs indicates 650 psig. Which one of the following describes the effect of this condition on the CRDM when a scram is initiated?

- a. Accumulator pressure alone is sufficient to drive the rod in.
- b. Reactor pressure alone is sufficient to drive the rod in.
- c. Both reactor pressure and accumulator pressure must be combined to drive the rod in.
- d. Both reactor pressure and accumulator pressure combined are inadequate to drive the rod in.

QUESTION: 052 (1.00)

Which one of the following is the basis for maintaining a minimum water level in the fuel pool and reactor cavity during refueling operations per Technical Specifications?

- a. To adequately remove decay heat from the irradiated fuel assemblies to prevent cladding failure.
- b. To absorb the radioactive gases that would escape from the rupture of an irradiated fuel assembly.
- c. To reduce the radiation levels on the refueling floor to less than 2 mrem per hour.
- d. To provide a buffer layer of water for the reduction of fuel clad corrosion by dissolved oxygen.

QUESTION: 053 (1.00)

A complete loss of 125 VDC power to Standby Diesel Generator A has occurred. Which one of the following describes the response of the D/G to a complete loss of offsite power?

- a. The D/G will receive an automatic start signal and the output breaker will automatically close onto the emergency bus when the D/G is at rated speed and voltage.
- b. The D/G will startup and run unloaded due to a loss of breaker control power that prevents automatic closure of the output breaker.
- c. The D/G will startup and come up to rated speed but the generator output voltage will remain at zero due to the loss of power to the field flashing circuit.
- d. The D/G will receive an automatic start signal but will fail to start due to the loss of power to the starting air valves.

QUESTION: 054 (1.00)

The unit is operating at 100% rated power when a loss of RPS Bus B occurs. AOP-0010, Loss of One RPS Bus, directs the operator to immediately reset the resulting NSSSS isolation by taking the RPS POWER TRANSFER switch to:

- a. ALT A and depressing the INBOARD ISOLATION SEAL-IN RESET pushbutton.
- b. ALT A, and depressing the INBOARD and OUTBOARD ISOLATION SEAL-IN RESET pushbuttons.
- c. ALT B, and depressing the INBOARD ISOLATION SEAL-IN RESET pushbutton.
- d. ALT B, and depressing the INBOARD and OUTBOARD ISOLATION SEAL-IN RESET pushbuttons.

QUESTION: 055 (1.00)

The unit is operating at 30% rated power when ONE of the operating circulating water pumps trips. Which one of the following is the IMMEDIATE ACTION that the operator is required to take per the Abnormal Operating Procedure?

- a. When condenser vacuum decreases to less than 25 inches Hg vacuum, insert a manual reactor scram.
- b. When condenser vacuum decreases to less than 25 inches Hg vacuum, trip the main turbine.
- c. When condenser vacuum decreases to 22.3 inches Hg vacuum or less, insert a manual reactor scram.
- d. When condenser vacuum decreases to 22.3 inches Hg vacuum or less, trip the main turbine.

QUESTION: 056 (1.00)

During a refueling outage, RHR loop A is operating in the Fuel Pool Cooling Assist Mode when an inadvertent BOP Containment Isolation occurs. Which one of the following is the reason that AOP-0003 cautions the operator to secure the running RHR pump as soon as possible?

- a. To allow the operator to realign the pump to the standby LPCI mode.
- b. To prevent overheating the RHR pump due to the isolation of motor and pump cooling water.
- c. To prevent pump damage due to the isolation of the RHR pump suction from the Fuel Pool.
- d. To prevent draining the Fuel Pool to the suppression pool through the RHR minimum flow valve.

QUESTION: 057 (1.00)

Which one of the following is the reason for placing the Reactor Mode Select Switch to SHUTDOWN following an automatic scram per AOP-0001, Reactor Scram?

- a. To reduce the APRMs fixed scram setpoint.
- b. To activate the IRM scram functions.
- c. To keep the MSIVs open during the scram pressure transient.
- d. To provide a redundant RPS actuation.

QUESTION: 058 (1.00)

Which one of the following describes the proper practice for equipment isolation using air operated valves?

- a. Valves that fail OPEN shall have the control switch tagged in the CLOSED position and the air removed.
- b. Valves that fail CLOSED shall have the control switch tagged in the OPEN position and the air removed.
- c. Valves that fail OPEN shall have the control switch tagged in the CLOSED position and a gagging device installed.
- d. Valves that fail CLOSED shall have the control switch tagged in the CLOSED position and a gagging device applied.

QUESTION: 059 (1.00)

Given the following plant conditions:

- The plant is at 65% power
- The "A" Control Rod Drive (CRD) Pump is tagged for maintenance.
- The Reactor Building Operator is recharging control rod 32-33 HCU accumulator due to low pressure.

The "B" CRD Pump trips due a breaker fault.

Which one of the subsequent alarm conditions below would REQUIRE the operator to promptly initiate a manual reactor scram?

- a. SCRAM PILOT VLV AIR HEADER HIGH PRESSURE
- b. CONT ROD DRIVE HYDRAULIC DRIVE SYS HIGH TEMP
- c. CONTROL ROD DRIFT
- d. ACCUMULATOR TROUBLE

QUESTION: 060 (1.00)

Following a reactor scram due to high reactor pressure, the operator noted that a total of 9 SRVs had opened to control pressure. Which one of the following is the highest pressure the RPV could have experienced if all SRVs were functioning properly?

- a. 1145 psig
- b. 1118 psig
- c. 1109 psig
- d. 1080 psig

QUESTION: 061 (1.00)

Which one of the following describes why EOP 1, "RPV control," Caution number 2 directs the operator to open and leave open RHR Shutdown Cooling Inboard Isolation, 1E12-F009, following a LOCA?

- a. High temperature steam conditions in the drywell may cause thermal overloads in the motor to trip, rendering the valve inoperable, unless the valve is opened early in the transient.
- b. High temperatures in the drywell could cause local boiling in the piping upstream of F009, resulting in water hammer if the valve is not open.
- c. High temperature steam conditions in the drywell may cause accelerated corrosion of the motor rotor resulting in insufficient torque to operate the valve.
- d. The motor on F009 is designed for only one cycle of operation at the maximum anticipated drywell temperatures.

QUESTION: 062 (1.00)

Which one of the following conditions is indicative of a single rod scram at power due to a failed scram solenoid?

- a. "SCRAM VLVS" and "ACCUM FAULT" status lights backlit; no "ROD DRIFT" status light backlit.
- b. "SCRAM VLVS" and "ROD DRIFT" status lights backlit; no "ACCUM FAULT" status light backlit.
- c. "ACCUM FAULT" status light backlit; no "ROD DRIFT" or "SCRAM VLVS" status lights backlit.
- d. "SCRAM VLVS", "ACCUM FAULT" and "ROD DRIFT" status lights ALL backlit.

QUESTION: 063 (1.00)

The reactor is operating at rated conditions with the reactor recirculation system in LOOP MANUAL. Over the next several minutes, feedwater heating degrades to essentially zero. Which one of the following RPS trip setpoints would be reached first resulting in a plant scram? (Assume no operator action).

- a. High neutron flux (118% of RTP)
- b. APRM High Thermal power (.66W+48)
- c. RPV High pressure (1064.7 psig)
- d. RPV water level High (+51" in RUN mode)

QUESTION: 064 (1.00)

Which one of the following sets of conditions would result in the Automatic Depressurization System (ADS) safety relief valves opening? Drywell pressure is 1.5 psig.

- a. Reactor level -150" for 5 min, RHR A discharge pressure 130 psig, RHR B & C discharge pressure 0, LPCS discharge pressure 140 psig
- b. Reactor level -145" for 7 min, RHR B discharge pressure 137 psig, RHR A & C discharge pressure 0, LPCS discharge pressure 150 psig
- c. Reactor level -150" for 5 min, RHR A discharge pressure 136 psig, RHR B & C discharge pressure 0, LPCS discharge pressure 147 psig.
- d. Reactor level -145" for 7 min, RHR B discharge pressure 127 psig, RHR A & C discharge pressure 0, LPCS discharge pressure 130 psig

QUESTION: 065 (1.00)

Which one of the following sets of parameters will allow the MSIV-PLCS System to operate after the 5 minute timer times out?

- a. Reactor pressure 22 psig, System air flow 10 scfm, system air pressure 55 psig.
- b. Reactor pressure 27 psig, System air flow 15 scfm, system air pressure 45 psig.
- c. Reactor pressure 27 psig, System air flow 10 scfm, system air pressure 45 psig.
- d. Reactor pressure 22 psig, System air flow 15 scfm, system air pressure 55 psig.

QUESTION: 066 (1.00)

Fuel Building (FB) HVAC has automatically actuated in the following sequence:

- the FB isolation dampers go fully closed
- the FB exhaust fan inlet and outlet isolation dampers isolate
- the FB ventilation air supply fans tripped
- the FB charcoal filter train started

Which one of the following caused the initiation?

- a. Mode change of FB HVAC from "No Fuel Handling" to "Fuel Handling".
- b. RPV water low level 3.
- c. FB high differential pressure.
- d. Drywell pressure 1.92 psig.

QUESTION: 067 (1.00)

Which one of the following is the purpose for the 3/4 inch lines routed to the suppression from the Residual Heat Removal pump suppression pool suction valves, E12*F004A(B)?

- a. prevent air from accumulating in the suction piping.
- b. flush corrosion products from the suction piping.
- c. prevent pressure locking of F004A(B) in the closed position.
- d. provide a minimum flow path during shutdown cooling.

QUESTION: 068 (1.00)

Which one of the following describes a MISORIENTED fuel bundle?

- a. Orientation boss on fuel bundle bail points toward the center of the control cell.
- b. The channel spacer buttons are adjacent to the control blade and adjacent to each other.
- c. Serial number on bail is readable as viewed from the center of the control cell.
- d. Channel fasteners are located on outside edge 180 degrees away from fuel cell center.

QUESTION: 069 (1.00)

The quarterly Low Pressure Core Spray (LPCS) System operability test is in progress with the Suppression Pool Test Return Valve, E21*F012, fully open when a loss of coolant accident (LOCA) occurs. Plant conditions are as follows:

- Reactor vessel water level is -160 inches, decreasing
- Reactor pressure is 450 psig, decreasing
- The Test Return Valve E21*F012 fails to close on the LPCS initiation signal

Which one of the following describes the response of the LPCS system to these conditions?

- a. The Injection Valve, E21*F005, opens and LPCS flow indicator reads approximately 5000 gpm.
- b. The Injection Valve, E21*F005, opens and LPCS flow indicator reads full scale, 8000 gpm.
- c. The Injection Valve, E21*F005, remains closed and LPCS flow indicator reads 875 gpm.
- d. The Injection Valve, E21*F005, remains closed and LPCS flow indicator reads approximately 3500 gpm.

QUESTION: 070 (1.00)

Following an automatic High Pressure Core Spray (HPCS) actuation the injection valve, E22*F004 closed on an RPV Level 8 signal. After RPV level decreases to 30 inches, which one of the following actions will reopen the HPCS injection valve, E22*F004?

- a. Taking the handswitch to open
- b. Depressing the "HPCS INITIATION RESET" pushbutton and taking the handswitch to open
- c. Arming and depressing the "HPCS MANUAL INITIATION" pushbutton
- d. Depressing the "HPCS HIGH WATER LEVEL RESET" pushbutton and taking the handswitch to open

QUESTION: 071 (1.00)

With the Reactor Mode Switch in "STARTUP", the "MODE/TEST" switch on IRM channel "D" drawer is inadvertently taken out of "OPERATE". This will result in a:

- a. trip of RPS "B" logic only.
- b. rod withdraw block only.
- c. trip of RPS "B" logic and a rod withdrawal block.
- d. full reactor scram if any other IRM is bypassed.

QUESTION: 072 (1.00)

During operation at 100% power the following panel indications for recirculation pump "B" are noted:

- Seal cavity #1 pressure reads 920 psig
- Seal cavity #2 pressure reads 420 psig
- Annunciator "RECIRC PUMP B OUTER SEAL HIGH LEAKAGE" is alarming
- Annunciator "RECIRC PUMP B SEAL STAGING HIGH/LOW FLOW" is alarming

This indicates that:

- a. the seal staging line isolation valve has failed closed.
- b. the seal purge pressure reducing valve has failed.
- c. both #1 and #2 seals have failed.
- d. only #2 seal has failed

QUESTION: 073 (1.00)

The operators are aligning RHR Loop B for Shutdown Cooling (SDC). The SDC suction valves (F008 and F009) from the reactor vessel are OPEN. Which one of the following inadvertent operator actions would result in draining the reactor vessel to the suppression pool?

- a. The operator attempts to open RHR Suppression Pool Suction, F004B with RHR Pump SDC Suction, F006B open.
- b. The operator attempts to open RHR Pump SDC Suction, F006B prior to closing RHR Suppression Pool Suction, F004B.
- c. The operator attempts to open RHR Pump SDC Suction, F006B with RHR Suppression Pool Suction, F004B closed and RHR Test Return to Suppression Pool, F024B open.
- d. The operator attempts to open RHR Test Return to Suppression Pool, F024B after RHR Suppression Pool Suction, F004B is closed and RHR Pump SDC Suction, F006B is opened.

QUESTION: 074 (1.00)

With the reactor operating at 100% power a bus fault trips 1NPS-SWG1B. Which one of the following will be the OPERATING condensate and feedwater pump configuration after the trip of bus 1NPS-SWG1B?

- a. Condensate pumps "A" and "C" Feedwater pumps "A" and "C"
- b. Condensate Pump "A" and "C" Feedwater pump "A"
- c. Condensate pump "C" and Feedwater pump "A"
- d. Condensate pump "B" and Feedwater pumps "B" and "C"

QUESTION: 075 (1.00)

While operating at 100% power, with the Low Pressure Core Spray system in normal standby condition, 1E21*MOV F005, LPCS injection valve, is shut. Which one of the following correctly describes the operability of F005 valve?

- a. The valve can be manually opened from the Control Room anytime the LPCS pump is running.
- b. The valve will auto open if reactor pressure is less than 520 psig.
- c. The valve will auto open if reactor pressure is less than 470 psig and a LOCA signal is present.
- d. The valve will auto open when the LPCS discharge pressure exceeds 145 psig.

QUESTION: 076 (1.00)

A control rod block has occurred with the following conditions:

- SRM channel B is 95 cps
- All other SRM channels are greater than $1.90 \times E4$ cps
- Only SRM detector A is full in
- Intermediate range (IRM) channel B is on range 2
- All other IRM channels are on range 3

Which one of the following caused the rod block?

- a. SRM downscale
- b. Inoperable SRM channel
- c. Retract permissive interlock
- d. SRM upscale

QUESTION: 077 (1.00)

Which one of the following containment ventilation devices is powered from a safety-related bus?

- a. Containment continuous purge fan
- b. Annulus mix fan
- c. Containment/drywell purge supply air fan
- d. Annulus pressure control exhaust fan

QUESTION: 078 (1.00)

A Class B/C fire extinguisher and a Class A fire extinguisher are both available at the scene of an electrical fire. Which one of the following describes the proper use of fire extinguishers?

- a. Use the Class A fire extinguisher first. If it does NOT put out the fire, use the Class B/C fire extinguisher.
- b. Do NOT use the Class A fire extinguisher. Put the fire out with the Class B/C fire extinguisher.
- c. Wait for the fire brigade member assigned to bring a Class D fire extinguisher, then use the Class D fire extinguisher.
- d. Do NOT use the Class B/C fire extinguisher. Put the fire out with the Class A fire extinguisher.

QUESTION: 079 (1.00)

The Main Turbine is at 90 percent of rated speed during turbine startup when 125 VDC buses 1BYS-SWG01A and B are lost. Which one of the following describes the effect of the bus loss on the Main Turbine?

- a. The Main Turbine will trip.
- b. 125 VDC will be lost to the PMG preventing the synchronization of the Main Turbine Generator.
- c. Electrical Malfunction and System Fault lights will be energized, which will electrically stop the Main Turbine startup.
- d. Main Turbine startup can continue unaffected.

QUESTION: 080 (1.00)

Following an automatic initiation of the Standby Gas Treatment (SGT) system the operator stops Train "A" and returns it to "STANDBY" with the initiation signal still present. Which one of the following restores the SGT system to operation if the Train "B" fan motor trips?

- a. Train "A" will automatically initiate on low air flow in train "B"
- b. Place the SGT DIV II Inoperability switch in "ON" which will automatically initiate SGT train "A"
- c. Train "B" must be placed in "LOCKOUT" and train "A" manually initiated
- d. Train "A" will automatically initiate on a positive pressure signal in the annulus

QUESTION: 081 (1.00)

Which one of the following states the correct sequence of components in the flow path of the Standby Gas Treatment Filter Train?

- a. Prefilter, HEPA filter, electric heater, demister, charcoal filter, HEPA filter.
- b. Electric heater, demister, prefilter, HEPA filter, charcoal filter, HEPA filter.
- c. Demister, electric heater, prefilter, HEPA filter, charcoal filter, HEPA filter.
- d. Demister, electric heater, charcoal filter, HEPA filter, prefilter, HEPA filter.

QUESTION: 082 (1.00)

Which one of the following is an example of a practice that contributes to meeting ALARA goals?

- a. Entering an area with a large steam leak on an Access RWP in order to locate the leak.
- b. Entering the TIP Drive Area on an Access RWP for training on the TIP system.
- c. Entering a Radiation Area for independent verification of a valve line-up only after the initial line-up is complete.
- d. Entering a High Radiation Area with an out of calibration dose-rate monitoring device.

QUESTION: 083 (1.00)

The purpose of DANGER-Hold tags for the installation of electrical grounds is to ensure that:

- a. Grounds are INSTALLED on a "first-on, last-off" basis.
- b. Equipment is protected during work under a CLEARANCE.
- c. Grounds are REMOVED prior to re-energizing the system.
- d. "High lines" are NOT used for grounding each phase.

QUESTION: 084 (1.00)

A Standing Radiation Work Permit (SRWP) can be used for:

- a. A job in an area with fluctuating radiological conditions.
- b. A job evaluated to result in individual exposures of 25 mRem/day.
- c. An entry where the collective dose is equal to 0.1 man-rem.
- d. An entry into an area requiring use of respiratory protective equipment.

QUESTION: 085 (1.00)

During the performance of a Surveillance Test Procedure (STP), a normally lit indicator is out due to maintenance on its power supply. Its condition is not required to satisfy the STP acceptance criteria. Which one of the following is necessary per ADM-0015, "Station Surveillance Test Program" to continue the STP.

- a. Notify the Shift Supervisor/Control Operating Foreman and obtain his/her approval to continue.
- b. Complete an "Exception Report," attach it to the STP and continue.
- c. Treat the step as a "Test Exception," provide a justifying comment on the Data Package Cover Sheet and continue.
- d. Complete a "Temporary Change Notice" and continue once necessary TCN approvals are obtained.

QUESTION: 086 (1.00)

Which one of the choices below correctly completes the following statement in accordance with EIP-2-012, "Radiation Exposure Controls?" Authorization to receive radiological exposures in excess of 10CFR20 limits is the responsibility of the _____.

- a. Emergency Director
- b. Radiation Protection Coordinator
- c. Radiological Assessment Coordinator
- d. Recovery Manager

QUESTION: 087 (1.00)

What is the MINIMUM RPV water level at which the core is adequately cooled with NO injection systems operating?

- a. -205 inches
- b. -193 inches
- c. -162 inches
- d. -100 inches

QUESTION: 088 (1.00)

Which one of the following states the maximum duration for a HOT WORK PERMIT after approval by the Shift Supervisor for work in the Turbine Building?

- a. 8 hours while operating and 24 hours during plant shutdown.
- b. 24 hours while operating and 24 hours during plant shutdown.
- c. 8 hours while operating and for the length of the job during shutdown.
- d. 24 hours while operating and for the length of the job during shutdown.

QUESTION: 089 (2.00)

Match each location/device in Column A with the individual from Column B who is authorized to ISSUE THE ASSOCIATED KEY in accordance with ADM-0020, Plant Key Control. (NOTE: The items in Column B may be used more than once or not at all.)

Column A (Location/Device)	Column B (Individuals)
_____ a. Power Block Building	1. Senior Radiation Protection Technician
_____ b. Very High Radiation Area	2. Shift Supervisor
_____ c. Locked Valve/Device	3. Lock and Key Supervisor
_____ d. High Radiation Area	4. Security Shift Supervisor
	5. Operations Supervisor
	6. Director-Radiological Programs

QUESTION: 090 (2.00)

Match the automatic trip in Column A with the fault condition it is designed to prevent in Column B. Items in Column B may be used more than once or not at all.

COLUMN A (Automatic Trip)	COLUMN B (Fault Condition Prevented)
_____ a. Generator output 230 KV Circuit Breakers (20635 and 20640) trip to prevent:	1. maintaining system voltage after turbine trip.
_____ b. Trip and lockout of the normal 13.8 KV and 4.16 KV supply breakers to prevent:	2. serious fire by enabling the transformer fire protection interlock.
_____ c. Trip and lockout the exciter field breaker to prevent:	3. turbine overspeed
_____ d. Trip the main and normal station service transformer cooling system to prevent:	4. motoring the main generator
	5. a transformer sudden pressure transient
	6. supplying system power into the original fault.

QUESTION: 091 (2.00)

Match the condition in Column A to the expected recirculation flow control response in Column B. (NOTE: Each response in Column B may be used more than once or not at all.)

COLUMN A (Condition)	COLUMN B (Flow Control Valve (FCV) Response)
_____ a. Reactor water level DECREASES to level 4 and LESS than three feedwater pumps are running.	1. FCV limited to 102% drive flow MAXIMUM
_____ b. Reactor water level INCREASES to level 7 and ALL three feedwater pumps are running.	2. FCV limited to 48% drive flow MINIMUM flow
_____ c. Drywell pressure INCREASES to HIGH DRYWELL PRESSURE (1.68 psig).	3. FCV runback to 60% drive flow
_____ d. Hydraulic Power Unit (HPU) failure due to undervoltage condition.	4. FCV runback to 48% drive flow
	5. FCV motion inhibit
	6. No Response

QUESTION: 092 (2.00)

With a loss of 125 VDC, match the component in Column A with the effect in Column B. (NOTE: The items in Column B may be used more than once or not at all.)

Column A
(System/Component)

Column B
(Effect on System)

- | | |
|---|--|
| _____ a. ARI | 1. Will NOT operate automatically and CANNOT be manually operated locally or from the Control Room |
| _____ b. ADS | 2. Will NOT operate automatically and CANNOT be manually operated locally but can be manually operated from the Control Room |
| _____ c. RCIC | 3. Will NOT operate automatically, CANNOT be manually operated from the Control Room, but can be manually operated locally |
| _____ d. 4.16 KV Breakers
on 1ENS-SWG01B | 4. Will operate automatically but CANNOT be manually operated locally or from the Control Room |

QUESTION: 093 (2.00)

Match the condition in Column A with the appropriate controlled area designation from Column B. (NOTE: The items in Column B may be used more than once or not at all.)

Column A (Conditions)	Column B (Controlled Areas)
_____ a. 20 dpm/100 cm ² alpha activity	1. High Radiation Area
_____ b. 0.5 mr/hr general area radiation	2. Radiation Area
_____ c. 120 mrem dose in 5 consecutive days	3. Contaminated Area
_____ d. 2 R/hr general area radiation	4. Very High Radiation Area
	5. Radiologically Controlled Area
	6. VHR Exclusion Area
	7. Clean Area

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

ANSWER: 001 (1.00)

c.

REFERENCE:

EOP-2, HCTL Fig. 2 and HCLL Fig. 4
 EPSTG*0002-1, pg 8, 10, 232
 KA 295026K206 [3.5/3.7]
 295026K206 ..(KA's)

ANSWER: 002 (1.00)

d.

REFERENCE:

LOTM, Chapter 34, pg 14
 259002K301 [3.8/3.8]
 259002K301 ..(KA's)

ANSWER: 003 (1.00)

d.

REFERENCE:

LOTM Chapter 18, Table 3
 ARP-601-16
 SOP-0030, High Pressure Core Spray
 209002K407 [3.5/3.7]
 209002K407 ..(KA's)

ANSWER: 004 (1.00)

a.

REFERENCE:

RB LOTM, Chapter 17, Sect V
KA 209001A408 [3.9/3.9]
209001A408 .. (KA's)

ANSWER: 005 (1.00)

a.

REFERENCE:

RB LOTM 30-2, pg 18 and Fig. 1
KA 271000K302 [3.3/3.9]
271000K302 .. (KA's)

ANSWER: 006 (1.00)

a.

REFERENCE:

RB LOTM 57-4, pg 6
KA 263000K401 [3.1/3.4]
263000K401 .. (KA's)

ANSWER: 007 (1.00)

a.

REFERENCE:

RB SOP-0090, pg 3
KA 290002G010 3.2/3.4
290002G010 .. (KA's)

ANSWER: 008 (1.00)

d.

REFERENCE:

RB EOP-1A
LOTM 4, 5, and 15
KA 295015A101 [3.8/3.9]
295015A101 .. (KA's)

ANSWER: 009 (1.00)

a.

REFERENCE:

RB EPSTG*0002
KA 295036A201 3.0/3.2
295036A201 .. (KA's)

ANSWER: 010 (1.00)

d.

REFERENCE:

RB EPSTG*0002, pg B-30
KA 295027K102 3.0/3.2
295027K102 .. (KA's)

ANSWER: 011 (1.00)

c.

REFERENCE:

RB LOTM 63, pg 5, 6
 KA 288000K502 3.2/3.4
 288000K502 .. (KA's)

ANSWER: 012 (1.00)

d.

REFERENCE:

RB SOP-0031, pg 4
 KA 295021K102 3.3/3.4
 295021K102 .. (KA's)

ANSWER: 013 (1.00)

a.

REFERENCE:

RB AOP-0031, pg 9
 KA 295016A104 [3.1/3.2]
 295016A104 .. (KA's)

ANSWER: 014 (1.00)

a.

REFERENCE:

RB AOP-0008, pg 2
KA 295019K203 [3.2/3.3]
295019K203 .. (KA's)

ANSWER: 015 (1.00)

b.

REFERENCE:

RB AOP-0008, pg 2
LOTM 5
KA 295019K201 [3.8/3.9]
295019K201 .. (KA's)

ANSWER: 016 (1.00)

d.

REFERENCE:

RB LOTM 10, pg 10
KA 215003K401 [3.7/3.7]
215003K401 .. (KA's)

ANSWER: 017 (1.00)

d.

REFERENCE:

RB LOTM 9, Table 1
KA 215004K406 [3.2/3.2]
215004K406 .. (KA's)

ANSWER: 018 (1.00)

b.

REFERENCE:

RB LOTM 11, pg 4
KA 215005A101 [4.0/4.0]
215005A101 .. (KA's)

ANSWER: 019 (1.00)

b.

REFERENCE:

RB LOTM-27, p. 8.
KA 295025K208 (3.7).
295025K208 .. (KA's)

ANSWER: 020 (1.00)

d.

REFERENCE:

RB EOP-1, Caution #1
KA 295031A201 (4.6).
295031A201 .. (KA's)

ANSWER: 021 (1.00)

b.

REFERENCE:

1. River Bend: LOTM-5, CRDH Figure.
2. KA 201003A206 (3.0).
201003A206 .. (KA's)

ANSWER: 022 (1.00)

b

REFERENCE:

River Bend LOTM-20
GE BWR-6 Technology
K/A 217000 A2.07 3.1/3.1
A2.10 3.1/3.1
217000A210 217000A207 .. (KA's)

ANSWER: 023 (1.00)

c

REFERENCE:

LOTM-6, pg 40
201005K406 3.5/3.5
201005K406 .. (KA's)

ANSWER: 024 (1.00)

a

REFERENCE:

River Bend Simulator Malf #41
202001A201 3.4/3.9
202001A201 .. (KA's)

ANSWER: 025 (1.00)

a

REFERENCE:

LOTM-17, pg 1, 5, Table 4

209001 K1.02 3.4/3.4

1.06 2.0/2.1

4.05 2.6/2.6

A2.02 3.2/3.2

209001K405

209001A202

209001K106

209001K102

.. (KA's)

ANSWER: 026 (1.00)

c

REFERENCE:

LOTM-16, pg 8

211000K408 4.2*/4.2*

211000K408 .. (KA's)

ANSWER: 027 (1.00)

a

REFERENCE:

EOP-1A, step RPA-7

295037K306 3.8/4.1

295037K306 .. (KA's)

ANSWER: 028 (1.00)

b

REFERENCE:

LOTM-15

201001K404 3.6/3.6

201001A204 3.8/3.9

201001A204

201001K404

.. (KA's)

ANSWER: 029 (1.00)

d.

REFERENCE:

1. River Bend: LOTM-27
2. KA Numbers 241000K401 (3.8).
241000K401 ..(KA's)

ANSWER: 030 (1.00)

c.

REFERENCE:

1. River Bend: LOTM-18, pg 6
2. KA Numbers 209002K103 (3.0).
209002K103 ..(KA's)

ANSWER: 031 (1.00)

b

REFERENCE:

RB ADM 022
10 CFR 55.53(e)
KA 294001A103 2.5/3.4
294001A103 ..(KA's)

ANSWER: 032 (1.00)

b.

REFERENCE:

10CFR55.13[a][2]
KA 294001A103 2.7/3.9
KA 294001A109
294001A109 294001A103 .. (KA's)

ANSWER: 033 (1.00)

d.

REFERENCE:

AOP-0012, pg 3
295018K202 [3.4/3.6]
295018K202 .. (KA's)

ANSWER: 034 (1.00)

b.

REFERENCE:

AOP-0004, pg 2
KA 295003G010 3.9/4.1
295003G010 .. (KA's)

ANSWER: 035 (1.00)

c.

REFERENCE:

AOP-0004, pg 11-13
KA 295003K204 3.4/3.5
295003K204 .. (KA's)

ANSWER: 036 (1.00)

c.

REFERENCE:

RB LOTM-5, FIG 7
 LOTM 15, pg 6
 201003A204 [3.5/3.6]
 201003A204 ..(KA's)

ANSWER: 037 (1.00)

b.

REFERENCE:

LOTM 5, pg 10
 201001A204 [3.8/3.9]
 201001A204 ..(KA's)

ANSWER: 038 (1.00)

a.

REFERENCE:

RB AOP-0001
 1. River Bend: GOP-0003, para. 3.0.
 2. KA Numbers 295008A101 (3.7).
 295008A101 ..(KA's)

ANSWER: 039 (1.00)

d

REFERENCE:

River Bend LOTM-20, pg 5,6
GE BWR-6 Technology
K/A 217000 A2.07 3.1/3.1
A2.10 3.1/3.1
217000A210 217000A207 .. (KA's)

ANSWER: 040 (1.00)

a [1.0]

REFERENCE:

RB LOTM-17 P. 4
GGNS, OP-LO-SYS-LP-E21, LO 3.b, P. 8
KA 209001K404 3.0/3.2
209001K404 .. (KA's)

ANSWER: 041 (1.00)

c

REFERENCE:

LOTM-7, Recirculation System, pg 11
202001K128 3.9/4.1
202001K128 .. (KA's)

ANSWER: 042 (1.00)

A

REFERENCE:

RB GET-II-07-HB pg 12
KA 294001K104 3.3/3.6
294001K104 .. (KA's)

ANSWER: 043 (1.00)

a

REFERENCE:

RB AOP-0027, SEC 5.11.2
KA 295023G011 3.9/4.2
295023G011 .. (KA's)

ANSWER: 044 (1.00)

a

REFERENCE:

RB TS 3.9.11.2, STP-204-0700
KA 295021K305 3.6/3.8
KA 205000G001 3.6/3.7
KA 205000G011 3.1/3.9
295021K305 .. (KA's)

ANSWER: 045 (1.00)

a

REFERENCE:

RB TS 3.4.1.1, AOP-0024 SEC 5.5.1
KA 295001G003 3.2/4.1
KA 202002G011 3.4/4.2
295001G003 .. (KA's)

ANSWER: 046 (1.00)

c

REFERENCE:

RB ARP-680-07/B02
KA 2950141203 4.0/4.3
KA 201003A203 3.4/3.7
KA 201003G008 3.6/3.7
295014A203 .. (KA's)

ANSWER: 047 (1.00)

b.

REFERENCE:

RB EOP-2, ENCL 21
EOP-2 BASIS, pg B-206
LOTM 63
295024A118 [3.6/3.6]
295024A118 .. (KA's)

ANSWER: 048 (1.00)

a.

REFERENCE:

RB EPSTG*0002, pg B-289
295032K302 [3.6/3.8]
295032K302 .. (KA's)

ANSWER: 049 (1.00)

c.

REFERENCE:

EPSTG*0002, pg B-235
295030G007 [3.6/3.9]
295030G007 .. (KA's)

ANSWER: 050 (1.00)

d.

REFERENCE:

EPSTG*0002, pg B-25
 295012A102 [3.8/3.8]
 295012A102 .. (KA's)

ANSWER: 051 (1.00)

b.

REFERENCE:

LOTM 4, pg 15
 295022K101 [3.3/3.4]
 295022K101 .. (KA's)

ANSWER: 052 (1.00)

b.

REFERENCE:

Technical Specification Basis 3.9.8 and 3.9.9
 295023G004 [2.7/3.8]
 295023G004 .. (KA's)

ANSWER: 053 (1.00)

d.

REFERENCE:

LOTM 58, pg 14
 LOTM 57, Table 2
 295004A102 [3.8/4.1]
 295004A102 .. (KA's)

ANSWER: 054 (1.00)

d.

REFERENCE:

AOP-0010, pg 3
 LOTM 51
 295020A101 [3.6/3.6]
 295020A101 .. (KA's)

ANSWER: 055 (1.00)

a.

REFERENCE:

RB AOP-0005, pg 2
 295002A105 [3.2/3.2]
 295002A105 .. (KA's)

ANSWER: 056 (1.00)

c.

REFERENCE:

AOP-0003, pg 3
 295020G007 [3.0/3.3]
 295020G007 .. (KA's)

ANSWER: 057 (1.00)

d.

REFERENCE:

AOP-0001, Item 6.12
295006G007 [3.8/4.1]
295006G007 .. (KA's)

ANSWER: 058 (1.00)

c.

REFERENCE:

ADM-0027, Protective Tagging, Sect. 7.2.3
294001K102 [3.9/4.5]
294001K102 .. (KA's)

ANSWER: 059 (1.00)

d.

REFERENCE:

RB ARP-680-07, pg 16
ARP-601-22, pg 2
KA 295022A102 [3.6/3.6]
295022A102 .. (KA's)

ANSWER: 060 (1.00)

b.

REFERENCE:

RB LOTM-24, pg 17
 KA 295007A104 [3.9/4.1]
 295007A104 .. (KA's)

ANSWER: 061 (1.00)

c.

REFERENCE:

RB EPSTG*0002, pg 33
 KA 295028K202 (3.2/3.3)
 295028K202 .. (KA's)

ANSWER: 062 (1.00)

d.

REFERENCE:

RB LOTM-6
 KA 201005K103 (3.7/3.7)
 201005K103 .. (KA's)

ANSWER: 063 (1.00)

b.

REFERENCE:

RB AOP-0007,
 LOTM-12, pg 7
 KA 295014K301 (4.1/4.1)
 295014K301 .. (KA's)

ANSWER: 064 (1.00)

b.

REFERENCE:

RB LOTM-21, pp. 2&3
KA 218000K403 (3.8/4.0)
218000K403 .. (KA's)

ANSWER: 065 (1.00)

a.

REFERENCE:

RB LOTM-52, pg 5-7
ARP-601-17
KA 239003A203 (2.6/2.7)
239003A203 .. (KA's)

ANSWER: 066 (1.00)

d.

REFERENCE:

RB AOP-003
RB LOTM-60, pg 7, figure 7
KA 288000A301 (3.8/3.8).
288000A301 .. (KA's)

ANSWER: 067 (1.00)

c.

REFERENCE:

RB LOTM-19, pg 5
 KA 203000K402 [3.3/3.4]
 203000K402 .. (KA's)

ANSWER: 068 (1.00)

d.

REFERENCE:

RB LOTM-1, pg 10
 KA 234000K505 [3.0/3.7]
 234000K505 .. (KA's)

ANSWER: 069 (1.00)

a.

REFERENCE:

RB LOTM-17, pg 3, TS 4.5.1.b.1.
 KA 209001A208 [3.1/3.1]
 209001A208 .. (KA's)

ANSWER: 070 (1.00)

d.

REFERENCE:

RB LOTM-18, pg 12
 KA 209002A203 [3.2/3.4]
 209002A203 .. (KA's)

ANSWER: 071 (1.00)

c.

REFERENCE:

RB LOTM-10, pg 10, ARP P680-06A/AO9.
 KA 215003K301 [3.9/4.0]
 215003K301 .. (KA's)

ANSWER: 072 (1.00)

c.

REFERENCE:

RB LOTM-7, pg 5
 KA 202001A109 [3.3/3.3]
 202001A109 .. (KA's)

ANSWER: 073 (1.00)

d.

REFERENCE:

RB LOTM-19, pg 45
 KA 205000A105 [3.4/3.4]
 205000A105 .. (KA's)

ANSWER: 074 (1.00)

b.

REFERENCE:

RB LOTM-31, pg 19
 LOTM-33, pg 26
 KA 256000K604 [2.8/2.8]
 256000K604 .. (KA's)

ANSWER: 075 (1.00)

c.

REFERENCE:

RB LOTM-17, pg 6
SOP-0032

KA 209001A403 (3.7/3.6)
209001A403 .. (KA's)

ANSWER: 076 (1.00)

c.

REFERENCE:

RB LOTM-9, pg 7

KA 215004K401 (3.6/3.8)
215004K401 .. (KA's)

ANSWER: 077 (1.00)

b.

REFERENCE:

RB LOTM-63, pg 17

KA 288000K601
288000K601 .. (KA's)

ANSWER: 078 (1.00)

b.

REFERENCE:

RB GET I, pg 42

KA 294001K116 (3.4/3.8)
294001K116 .. (KA's)

ANSWER: 079 (1.00)

d.

REFERENCE:

RB LOTM 57, TABLE 2
ACP-0002, pg 2
LOTM 28, TABLE 3
KA 245000K606 (3.0/3.2)
245000K606 .. (KA's)

ANSWER: 080 (1.00)

a.

REFERENCE:

RB LOTM-64, pg 15
KA 261000A302 [3.2/3.1]
261000A302 .. (KA's)

ANSWER: 081 (1.00)

c.

REFERENCE:

RB LOTM-64 Fig. 2
KA 261000G007 (3.5/3.7)
261000G007 .. (KA's)

ANSWER: 082 (1.00)

c.

REFERENCE:

RB RSP-0200
KA 294001K104 [3.3/3.6]
294001K104 .. (KA's)

ANSWER: 083 (1.00)

c.

REFERENCE:

RB ADM-0027, Sects 7.2.4 & 7.5.2
 KA 294001K107 [3.3/3.6]
 294001K107 .. (KA's)

ANSWER: 084 (1.00)

c.

REFERENCE:

RSP-0200, Sect 6.6
 KA 294001K103 [3.3/3.8]
 294001K103 294001K101 .. (KA's)

ANSWER: 085 (1.00)

c.

REFERENCE:

RB ADM-0015, pg 13
 KA Numbers 294001A102 (4.2)
 294001A102 .. (KA's)

ANSWER: 086 (1.00)

a.

REFERENCE:

RB EIP-2-012, p. 2.
KA 294001K103 (3.3).
294001K103 .. (KA's)

ANSWER: 087 (1.00)

a.

REFERENCE:

RB EPSTG*0002, pg B-118-120
KA 295009A201 [4.2/4.2]
295009A201 .. (KA's)

ANSWER: 088 (1.00)

d.

REFERENCE:

FPP-0060, Hot Work Permit, Rev 2, Sect 5.1.1
294001K116 [3.5/3.8]
294001K116 .. (KA's)

ANSWER: 089 (2.00)

a. 4
b. 1
c. 2
d. 1

REFERENCE:

RB ADM-0020, Plant Key Control, Rev 5
KA 294001K105 [3.2/3.7]
294001K105 .. (KA's)

ANSWER: 090 (2.00)

- a. 4
- b. 6
- c. 1
- d. 2

REFERENCE:

LOTM-53, pp. 4 through 7

KA	245000K101	3.2/3.3
KA	245000K301	3.4
KA	245000K409	3.1
KA	245000K606	3.0
KA	245000A301	3.6
245000K101	245000K301	.. (KA's)

ANSWER: 091 (2.00)

- a. 3
- b. 6
- c. 5
- d. 5

REFERENCE:

1. River Bend: LOTM-8, pg 13
4. KA Numbers 202002A301 (3.6).
202002A301 .. (KA's)

ANSWER: 092 (2.00)

- a. 1
- b. 1
- c. 1
- d. 3

REFERENCE:

RB LOTM 5, pg 4
 LOTM 57, Table 2
 LOTM 20, pg 12
 LOTM 21, pg 2
 295004K203 [3.3/3.3]
 295004K203 .. (KA's)

ANSWER: 093 (2.00)

- a. 3
- b. 5
- c. 2
- d. 4

REFERENCE:

RPP-0005, Posting of Radiolaogically Controlled Areas, Sect 3
 294001K103 [3.3/3.8]
 294001K103 .. (KA's)

ATTACHMENT 4

FACILITY POST-EXAMINATION REVIEW COMMENTS

U. S. NUCLEAR REGULATORY COMMISSION
SITE SPECIFIC EXAMINATION
SENIOR OPERATOR LICENSE
REGION 4

CANDIDATE'S NAME: _____
FACILITY: River Bend 1
REACTOR TYPE: BWR-GE6
DATE ADMINISTERED: 93/01/25

INSTRUCTIONS TO CANDIDATE:

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

<u>TEST VALUE</u>	<u>CANDIDATE'S SCORE</u>	<u>%</u>	
<u>98.00</u>		<u> </u>	TOTALS
	<u>FINAL GRADE</u>		

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

Candidate's Signature

NRC RULES AND GUIDELINES FOR LICENSE EXAMINATIONS

During the administration of this examination the following rules apply:

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

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

QUESTION: 001 (1.00)

A transient is in progress. Which one of the following sets of plant conditions requires the Shift Supervisor to direct an Emergency RPV Depressurization?

RPV PRESSURE	SUPPRESSION POOL TEMPERATURE	SUPPRESSION POOL LEVEL
a. 1000 psig	130 deg F	18.5 feet
b. 800 psig	137 deg F	19.0 feet
c. 400 psig	153 deg F	17.0 feet
d. 100 psig	161 deg F	16.5 feet

QUESTION: 002 (1.00)

Which one of the following describes the plant response to the loss of ONE steam flow signal while operating in a normal 100% power configuration?

- a. Reactor level will increase causing the Main Turbine and Feed Pumps to trip.
- b. Reactor level will increase and stabilize at a higher level below the Main Turbine and Feed Pump trip setpoint.
- c. Reactor level will decrease causing the reactor to scram on low water level.
- d. Reactor level will decrease and stabilize at a lower level above the scram trip setpoint.

QUESTION: 003 (1.00)

A LOCA has resulted in the automatic start of the HPCS system and injection into the vessel. During the transient, the operator closed HPCS Injection Valve (IE22*F004) using the control switch when the following conditions existed:

Reactor water level = +50 inches

Condensate Storage Tank Level = 100 feet (Mean Sea Level)

Suppression Pool Level = 19 feet 4 inches

Which one of the following describes the automatic response of the HPCS Suppression Pool Suction Isolation Valve (IE22*F015) and the HPCS Injection Valve (IE22*F004) when reactor water level decreases to -50 inches and CST level decreases to 1 foot (96 foot mean sea level elevation)? (Assume NO operator action.)

	SUPPRESSION POOL SUCTION ISOLATION VALVE (F015)	INJECTION VALVE (F004)
a.	opens	opens
b.	Remains closed	opens
c.	Remains closed	Remains closed
d.	opens	Remains closed

QUESTION: 004 (1.00)

A LOCA has occurred and LPCS is injecting automatically. Which one of the following states the two methods of manually controlling reactor water level using LPCS?

- a. Stop the LPCS pump with the pump control switch or throttle the LPCS Injection Isolation Valve (IE21*F005) open/closed.
- b. Stop the LPCS pump with the pump control switch or throttle the LPCS Injection Isolation Valve (IE21*F005) closed only.
- c. Throttle the Test Return Valve (IE21*F012) open/closed or throttle the LPCS Injection Isolation Valve (IE21*F005) closed only.
- d. Throttle the Test Return Valve (IE21*F012) open/closed or throttle the LPCS Injection Isolation Valve (IE21*F005) open/closed.

QUESTION: 005 (1.00)

Which one of the following Offgas system malfunctions will result in increased radioactive releases?

- a. Wetted recombiner catalyst resulting in ignition in the charcoal adsorbers due to a high hydrogen concentration.
- b. Increased steam flow to the SJAE resulting in a high flow rate through the offgas system to the plant stack.
- c. Initiation of an air purge during at power operation of the offgas system resulting in activation of argon and nitrogen.
- d. Decreased steam flow to the SJAE resulting in higher charcoal adsorber temperatures due to decreased steam cooling.

QUESTION: 006 (1.00)

The HPCS 125 VDC Switchgear 1E22-S001 is being supplied by the Backup Battery Charger 1BYS-CHGR1D. Which one of the following describes the HPCS 125 VDC Switchgear status if a LOCA occurs?

- a. The backup power supply breaker to the HPCS DC system will trip leaving the HPCS battery as the only power source.
- b. The Backup battery charger will continue to supply the HPCS DC system loads and the battery will act as a backup.
- c. The Backup battery charger will be load shed from its non-safety related power supply and must be manually aligned to a 480 VAC Standby bus.
- d. The HPCS DC system will be supplied by the HPCS battery with the Backup Battery Charger available on a low battery voltage condition.

QUESTION: 007 (1.00)

Which one of the following actions could be taken to minimize the thermal stress transients on the feedwater nozzles during low feedwater flow conditions during a reactor startup?

- a. Decrease RWCU system reject rate to the main condenser and maximize RWCU system temperature.
- b. Increase RWCU system reject rate to the main condenser and maximize RWCU system temperature.
- c. Increase Condensate system cleanup return flow rate to the main condenser.
- d. Decrease Condensate system cleanup return flow rate to the main condenser.

QUESTION: 008 (1.00)

Following the receipt of an automatic reactor scram signal, 10 control rods remained partially withdrawn. The plant conditions are as follows:

- The scram valves on the 10 control rods indicate open
- Reactor pressure is 950 psig
- ARI has been manually initiated

Which one of the following actions would provide a different method beyond those above to insert the 10 control rods?

- a. Pull the RPS scram fuses to de-energize the HCU scram solenoids.
- b. Start both CRD pumps and fully open FCV and PCV.
- c. Reset ARI and vent the scram air header.
- d. Vent the CRD over piston volumes.

QUESTION: 009 (1.00)

Following a small LOCA, RCIC is operating normally and injecting to the RPV when a RCIC turbine trip occurs. Which one of the following caused the RCIC turbine to trip?

- a. High containment pressure.
- b. High RPV water level.
- c. High drywell pressure.
- d. High gland seal exhaust pressure.

QUESTION: 010 (1.00)

Which one of the following describes why reactor level instrumentation indications are inaccurate when in the UNSAFE region of the RPV Saturation Curve?

- a. High containment temperatures will result in boiling of the reference legs causing an erroneously LOW level indication.
- b. High containment temperatures will result in boiling of the variable legs causing an erroneously LOW level indication.
- c. High drywell temperatures will result in boiling of the reference legs causing an erroneously LOW level indication.
- d. High drywell temperatures will result in boiling of the variable legs causing an erroneously HIGH level indication.

QUESTION: 011 (1.00)

Which one of the following maintains a negative pressure in the annulus following a LOCA?

- a. SGTS starts and takes a suction on the Annulus Pressure Control System.
- b. Annulus mixing fans start and discharge to the Annulus Pressure Control System.
- c. Annulus mixing fans start and discharge to the SGTS.
- d. SGTS starts and aligns to take a suction directly from the Annulus.

QUESTION: 012 (1.00)

The reactor is in Cold Shutdown, the RPV head bolts are tensioned, and reactor water level is +58 inches. Which one of the following is an adverse consequence that can result from thermal stratification during a complete loss of shutdown cooling?

- a. Inadequate circulation for coolant purification by RWCU.
- b. Fuel cladding damage due to inadequate coolant flow.
- c. RPV temperature decrease below Technical Specification limits.
- d. Inadvertent RPV pressurization.

QUESTION: 013 (1.00)

Which one of the following is the method that an operator should use to verify remote shutdown EJS breaker position per AOP-0031, "Shutdown From Outside the Main Control Room?"

- a. Local mechanical red/green position indicating flags.
- b. Local red/green position indicating lights.
- c. Observation of proper local voltage meter indication.
- d. Observation of a local current ammeter indication.

QUESTION: 014 (1.00)

The unit is operating at 80% rated power when a complete loss of instrument air occurs. Which one of the following causes the Feedwater Pumps to TRIP?

- a. The condensate and heater drain pumps minimum recirc valves fail open.
- b. The feedwater pump discharge valve locks up and then drifts closed.
- c. The feedwater pump suction valve drifts closed.
- d. The feedwater heater dump valves fail open.

QUESTION: 015 (1.00)

The unit is operating at power when a break in the Instrument Air Header results in a continuous decrease in instrument air pressure. Which one of the following explains how the control rods will be inserted into the core?

- a. The SDV vent and drain valves close and a scram signal is initiated on a high SDV level.
- b. The control rods scram individually into the core as the air pressure becomes insufficient to hold the scram valves closed.
- c. RPS scrams the control rods into the core when the instrument air header pressure decreases to less than or equal to 65 psig.
- d. The operator manually scrams the reactor when he observes more than one CRD accumulator trouble alarm on the rod display panel.

QUESTION: 016 (1.00)

Which one of the following plant conditions will result in the initiation of a control rod withdrawal block?

- a. The IRM detector is full OUT and the Reactor Mode Switch is in RUN.
- b. The IRM detector is full IN and the Reactor Mode Switch is in STARTUP.
- c. The IRM detector is withdrawn 1/3 of the way out of the core and the Reactor Mode Switch is in RUN.
- d. The IRM detector is inserted 1/3 of the way into the core and the Reactor Mode Switch is in STARTUP.

QUESTION: 017 (1.00)

A CONTROL ROD WITHDRAWAL BLOCK alarm has been received and SRM A amber UPSCALE OR INOP status light is on. Which one of the following conditions/operator actions will bypass the rod block?

- a. Reactor mode switch in Shutdown.
- b. Reactor mode switch in Refuel.
- c. IRMs A and E are on or above Range 3.
- d. IRMs A and E are on or above Range 8.

QUESTION: 018 (1.00)

The reactor has been operating near rated power for 200 days. Which one of the following describes the change in the indicated LPRM output signal from day 1 to day 200 and the method used to calibrate the LPRMs?

INDICATED LPRM POWER		METHOD OF LPRM CALIBRATION
a.	Decreases	Core Heat Balance
b.	Decreases	TIP System Trace
c.	Increases	Core Heat Balance
d.	Increases	TIP System Trace

QUESTION: 019 (1.00)

River Bend Station is at 70% reactor power and pressure controller "A" is in control. Which one of the following Electro-Hydraulic Control (EHC) System failures would result in a high reactor pressure transient (i.e. bypass valves and control valves close)?

- a. pressure controller "A" fails high
- b. pressure setpoint fails high
- c. pressure controller "A" fails low
- d. pressure setpoint fails low

QUESTION: 020 (1.00)

During a major transient requiring use of the EOPs the following plant conditions exist:

- Containment temp ----- 205 deg.F
- Drywell temp ----- 285 deg.F
- Reactor pressure ----- 200 psig

Which one of the following indications is reliable RPV level information?

- a. Narrow range indicates +12"
- b. Upset range indicates +21"
- c. Wide range indicates -120"
- d. Fuel zone indicates -116"

QUESTION: 021 (1.00)

Which one of the following would be indicative of a loss of air to the on-line Control Rod Drive (CRD) flow control valve?

- a. CRD cooling water high differential pressure.
- b. CRD high temperature
- c. HCU accumulator low pressure
- d. low charging water pressure

QUESTION: 022 (1.00)

The RCIC oil pump has failed (unknown to the operator). Which one of the following describes how the RCIC system will respond upon receipt of an initiation signal?

- a. The system will not start (ES1*F045 Steam Supply remains closed)
- b. The turbine will trip on overspeed
- c. The turbine will run continuously at minimum speed until the turbine bearings fail
- d. The turbine will run continuously at approximately 4500 rpm until the turbine bearings fail

QUESTION: 023 (1.00)

A reactor plant startup is in progress. For which one of the following conditions will the RCIS PRERMIT control rod movement. (NOTE: "A" SEQUENCE IS SELECTED WHEN SEQUENCE REQUIRED)

- a. Group 1 is fully withdrawn. Group 2 is still fully inserted. A withdrawal attempt is made on a control rod in Group 3.
- b. Groups 1 and 2 are fully withdrawn, and a control rod in Group 3 is selected. An attempt is made to fully withdraw the rod.
- c. Groups 1-4 are fully withdrawn. The next control rod selected is in Group 7 and a one-notch withdrawal is attempted.
- d. Reactor power is 75% and an attempt is made to withdraw the selected control rod three (3) notches.

QUESTION: 024 (1.00)

Which one of the following INDICATIONS would you expect to see as a result of a "Jet Pump Riser Failure"? Assume RECIRC FLOW CONTROL is in FLUX MANUAL.

- a. A DECREASE in reactor (APRM) power, a DECREASE in the Failed Jet Pump Flow, and a DECREASE in Core Differential Pressure.
- b. A DECREASE in core differential pressure, an INCREASE in Reactor Power, and an INCREASE in Indicated Core Flow.
- c. A DECREASE in failed Jet Pump flow, an INCREASE in indicated Core Flow, and a DECREASE in Core Differential Pressure.
- d. An INCREASE in indicated core flow, an INCREASE in Failed Jet Pump Flow, and an INCREASE in Reactor Power.

QUESTION: 025 (1.00)

For which one of the following abnormal conditions would the LPCS inject into the reactor vessel at LESS THAN acceptable flow rate with a valid initiation signal and Reactor pressure at 50 psig?

- a. Pump suction valve from the Suppression Pool, 1E21*F001, is shut.
- b. LPCS Flow transmitter, FT-N003, fails 'HIGH'.
- c. 25% of the suction strainer area has become clogged by debris.
- d. Control power is lost to 1E21*F011 prior to the initiation signal.

QUESTION: 026 (1.00)

SLC System A is in a normal STANDBY lineup but with the TEST TANK OUTLET VALVE (C41*F031) OPEN. Which of the following most accurately describes the effects on the STORAGE TANK OUTLET VALVE (F001) and SLC PUMP A of placing the SLC Keylock Control Switch for Pump A to START?

- a. Valve F001 Opens - SLC Pump A Starts after the valve reaches its Full Open position.
- b. Valve F001 Opens - SLC Pump A starts concurrently with the valve opening.
- c. Valve F001 does Not Open SLC Pump A Starts
- d. Valve F001 does Not Open - SLC Pump A does Not Start

QUESTION: 027 (1.00)

Which one of the following automatic closure signals may be bypassed to prevent MSIV closure during an ATWS condition with emergency depressurization not required?

- a. Low reactor level
- b. High main steam line flow
- c. Main steam line high radiation
- d. Main steam line tunnel high temperature

QUESTION: 028 (1.00)

During power operation with Mode Switch in RUN, an event has resulted in the following conditions:

RPV level decrease to 6"
RPV pressure has reached 1075 psig
Drywell pressure has reached 1.2 psig.

Which one of the following is the correct status of the valve solenoids indicated? No manual actions have been taken.

	SCRAM	BACKUP SCRAM	ARI
a.	deenergized	deenergized	deenergized
b.	deenergized	energized	deenergized
c.	deenergized	energized	energized
d.	energized	deenergized	deenergized

QUESTION: 029 (1.00)

With the following initial EHC conditions, the pressure control unit input for main steam changes from 944 psig to 941 psig.

- recirculation flow control in loop manual
- normal condenser vacuum
- pressure setpoint at 920 psig
- load limit setpoint at 75%
- bypass jack at 0%
- maximum combined flow limiter at 100%

Which one of the following correctly describes how the control valve reference signal (CV) and bypass valve flow reference (B/P) will CHANGE?

- a. CV increase and B/P increase
- b. CV increase and B/P decrease
- c. CV decrease and B/P increase
- d. CV decrease and B/P decrease

QUESTION: 030 (1.00)

The HPCS discharge line fill pump has failed allowing the HPCS discharge piping to drain. Which one of the following describes the worst consequence if the HPCS System is initiated under these conditions?

- a. Insufficient HPCS pump minimum flow.
- b. Inability of the HPCS System to reach rated flow.
- c. Damage to the HPCS piping due to water hammer.
- d. Damage to the HPCS pump impeller due to cavitation.

QUESTION: 031 (1.00)

Which one of the following is the shift standing periodicity required of a licensed operator to maintain his/her license in an "active" status per the regulations of 10 CFR 55 "Operators' Licenses"?

- a. Seven 8 hour shifts or five 12 hour shifts per calendar month.
- b. Seven 8 hour shifts or five 12 hour shifts per calendar quarter.
- c. Five 8 hour shifts or four 12 hour shifts per calendar month.
- d. Five 8 hour shifts or four 12 hour shifts per calendar quarter.

QUESTION: 032 (1.00)

Which one of the individuals below is NOT permitted to operate reactor controls under the instruction or supervision of a licensed operator?

- a. Auxiliary operator enrolled in a current license training course to obtain an operator license.
- b. Individual enrolled in a current license training course to obtain an SRO instructor certification.
- c. A licensed reactor operator whose license has become inactive.
- d. A licensed reactor operator who recently failed an NRC administered Senior Reactor Operator upgrade examination.

QUESTION: 033 (1.00)

The unit is operating at power when a COMPLETE loss of Turbine Plant Component Cooling Water (CCS) occurs. Which one of the following lists the critical equipment lost that requires the operator to scram the reactor per AOP-0012, Loss of Turbine Plant Component Cooling?

- a. Auxiliary boiler recirc pumps and offgas refrigeration units.
- b. Condenser air removal and generator stator cooling pumps.
- c. Heater drain and condenser air removal pumps.
- d. Reactor feedwater and condensate pumps.

QUESTION: 034 (1.00)

The unit is operating at 100% rated power when a Loss of Offsite Power occurs. Which one of the following states the IMMEDIATE operator action required by the Abnormal Operating Procedures?

- a. Take manual control of the feedwater regulating valves.
- b. Manually start RCIC.
- c. Manually trip the main turbine.
- d. Open designated SRVs.

QUESTION: 035 (1.00)

Which one of the following describes the sequence in which the Emergency loads will be loaded onto the Emergency Diesel Generators following a complete Loss of Offsite Power concurrent with a high drywell pressure condition?

- a. RHR A and B, LPCS and RHR C, Containment Unit Cooler, SFC pumps A and B, and Standby Service Water pumps.
- b. RHR A and B, LPCS and RHR C, Containment Unit Cooler, Standby Service Water cooling tower fans, and SGTS and annulus mixing fan.
- c. LPCS and RHR C, RHR A and B, SGTS and annulus mixing fan, Standby Service Water pumps, and Containment Unit Cooler.
- d. LPCS and RHR C, SLC pumps A and B, RHR A and B, Standby Service Water pumps, and Containment Unit Cooler.

QUESTION: 036 (1.00)

Which one of the following describes the operation of the CRDM Individual Rod Scram Test switches when placed in the TEST position?

- a. Either test switch deenergizes a single test solenoid to allow the air to vent from the scram inlet and outlet valves.
- b. Either test switch deenergizes both RPS A and RPS B pilot solenoids to allow the air to vent from the scram inlet and outlet valves.
- c. One test switch deenergizes RPS A pilot solenoid and the other test switch deenergizes the RPS B pilot solenoid to allow the air to vent from the pilot valve.
- d. One test switch deenergizes a test solenoid to allow the scram inlet valve to vent and the other test switch deenergizes a test solenoid to allow the scram outlet valve to vent.

QUESTION: 037 (1.00)

Which one of the following is the reason for initiating an automatic SCRAM for a CRD SCRAM DISCHARGE VOLUME (SDV) HIGH WATER LEVEL?

- a. The SDV is nearly filled and a scram will be ineffective due to a hydraulic lock.
- b. The SDV Instrument Volume is nearly filled and a scram will insert all rods before a hydraulic lock occurs.
- c. The SDV is filling with water and a scram is automatically initiated to prevent water hammer damage to the scram valves and the CRDM.
- d. The SDV Instrument Volume is filling with water and a scram is automatically initiated to prevent water hammer damage to the scram valves and the CRDM.

QUESTION: 038 (1.00)

Following a reactor scram from high power levels there is an initial RPV level decrease (shrink) followed by an increase (swell). Which one of the following is the correct operator response to the changing RPV level in accordance with GOP-0003, "Scram Recovery."

- a. Verify the feedwater level control system automatically responds.
- b. Verify the main turbine is controlling reactor pressure.
- c. Immediately switch the feedwater level control system to single element control.
- d. Trip the main feedwater pumps.

QUESTION: 039 (1.00)

The RCIC flow transmitter has failed low (0 gpm). Which one of the following best describes how the RCIC turbine will respond upon receipt of an initiation signal?

- a. The system will not start (F045 Steam Supply remains closed)
- b. The turbine will trip on overspeed
- c. The turbine will run continuously at minimum speed
- d. The turbine will run continuously at approximately 4500 rpm

QUESTION: 040 (1.00)

The LPCS system piping inside the reactor vessel is monitored for integrity by the measurement of the pressure differential between the LPCS injection piping inside the drywell and:

- a. the A RHR system injection piping inside the drywell.
- b. the above core plate pressure tap inside the drywell.
- c. the HPCS injection piping inside the drywell.
- d. the SLC injection line below core plate pressure tap inside the drywell.

QUESTION: 041 (1.00)

Which one of the following, in combination with Turbine Control Valve fast closure or Turbine Stop valve closure will initiate an EOC-RPT function?

- a. >40% power by APRMs
- b. >40% power by Steam Cross-Around pressure
- c. >40% power by Turbine First Stage pressure
- d. >40% power by P-1 Heat Balance

QUESTION: 042 (1.00)

A mandatory work assignment must be completed near a high level radiation source which cannot be shielded. Under guidelines of OMP 0.32.2, "ALARA Work Review", which one of the following would be the preferred method of completing the assignment?

- a. One man who will receive a dose of 250 mr.
- b. Two men who will each receive a dose of 130 mr.
- c. Two men who will receive doses of 150 mr and 110 mr respectively.
- d. Three men who will each receive a dose of 90 mr.

QUESTION: 043 (1.00)

Refueling is in progress when the Refueling Cavity/Upper Containment Pool develops a leak beyond the capacity of the Fuel Pool Cooling and Cleanup system. An irradiated fuel bundle in the refueling cavity will be uncovered before it can be moved to a safe location. Which one of the following is the FIRST CHOICE for restoring pool water level in the condition above?

- a. Condensate system via feedwater injection lines.
- b. HPCS with suction from the suppression pool.
- c. Standby service water via RHR loop B injection path.
- d. Standby service water crosstie to FPC heat exchanger.

QUESTION: 044 (1.00)

The following conditions exist during refueling activities:

Fuel reload	complete
RHR loop A	operating in shutdown cooling
RHR loop B	in standby
Reactor vessel level	23.5 feet above vessel flange

A fire occurs the RHR pump B breaker rendering it inoperable. It is further noted that no alternate means of decay heat removal is available. Which one of the following is correct regarding satisfying the Technical Specification Limiting Condition for Operation?

- a. The LCO is satisfied because water level is >23 feet above the vessel flange and RHR ~~B~~_A is operating in shutdown cooling.
- b. The LCO is satisfied because NO shutdown cooling is required to be in operation as long as water level is >23 feet above the vessel flange.
- c. The LCO is NOT satisfied because two loops of RHR are not operable.
- d. The LCO is NOT satisfied because no alternate means of decay heat removal is available.

QUESTION: 045 (1.00)

Following a trip on one Reactor Recirc pump the following conditions exist:

Reactor power	63%
Total core flow	37.5 x 10E6 lbm/hr

Which one of the following actions must be initiated?

- a. Reduce reactor power to less than or equal to 45% with control rod insertion.
- b. Reduce reactor power to less than or equal to 52% with control rod insertion.
- c. Reduce total core flow to less than 45% with the operating loop flow controller.
- d. Reduce total core flow to less than 55% with the operating loop flow controller.

QUESTION: 046 (1.00)

With the plant at 80% power a control rod begins to drift outward producing the expected alarms. The drive and exhaust water isolation valves are then shut but the rod continues to drift outward. Which one of the following is the most probable cause of continuing rod drift?

- a. CRD drive pressure is too high.
- b. Directional control valve 122 has failed.
- c. The collet piston is stuck.
- d. Cooling water pressure is too high.

QUESTION: 047 (1.00)

EOP-2 requires containment to be vented when containment pressure reaches 20 psig. Which one of the following describes the flow path for emergency venting of the containment?

- a. Drywell/Containment purge system takes a suction on containment and discharges through filter train #6 to the main stack.
- b. Hydrogen purge discharges to the annulus and the annulus mixing system is in operation discharging to SGTS.
- c. Drywell/Containment purge fan takes a suction on containment and discharges through the purge exhaust fans to the main stack.
- d. Hydrogen purge discharges through the Drywell/Containment purge system filter train #6 to the main stack.

QUESTION: 048 (1.00)

Which one of the following is the reason that EOP-3, Secondary Containment Control, directs scrambling the reactor if any Secondary Containment area parameter cannot be maintained below its MAXIMUM SAFE operating value?

- a. To reduce stored energy in the RPV.
- b. To reduce gaseous activity levels in the RPV.
- c. To ensure that the reactor can be made subcritical by the insertion of all control rods.
- d. To ensure the reactor is shutdown prior to initiating a rapid reactor depressurization.

QUESTION: 049 (1.00)

Which one of the following is the purpose of maintaining suppression pool level within the Heat Capacity Level Limit (HCLL)?

- a. To prevent evaporation of the pool level to below the drywell to containment horizontal vents during emergency RPV depressurization.
- b. To ensure a minimum of two feet of water is maintained above the SRV tailpipes for quenching any steam that is discharged from the SRVs.
- c. To prevent exceeding the temperature limit of the suppression pool during an emergency RPV depressurization.
- d. To ensure an adequate source of water is maintained for all low pressure ECCS to provide adequate core cooling.

QUESTION: 050 (1.00)

In EOP-2, Step 1 of Drywell Temperature Control directs the operator to "Monitor and control Drywell temperature below 145 deg F, using available Drywell cooling." Which one of the following defines AVAILABLE in this step?

- a. Fans/coolers that have been environmentally qualified.
- b. Fan/coolers that meet Technical Specification Operability requirements.
- c. Fan/coolers that have operable electrical power supplies.
- d. Fans/coolers that have the necessary support systems operable.

QUESTION: 051 (1.00)

A reactor startup is in progress and reactor pressure is 800 psig. A loss of both CRD pumps has resulted in the receipt of the CRD ACCUMULATOR TROUBLE alarm. The nitrogen pressure on one of the CRD HCUs indicates 650 psig. Which one of the following describes the effect of this condition on the CRDM when a scram is initiated?

- a. Accumulator pressure alone is sufficient to drive the rod in.
- b. Reactor pressure alone is sufficient to drive the rod in.
- c. Both reactor pressure and accumulator pressure must be combined to drive the rod in.
- d. Both reactor pressure and accumulator pressure combined are inadequate to drive the rod in.

QUESTION: 052 (1.00)

Which one of the following is the basis for maintaining a minimum water level in the fuel pool and reactor cavity during refueling operations per Technical Specifications?

- a. To adequately remove decay heat from the irradiated fuel assemblies to prevent cladding failure.
- b. To absorb the radioactive gases that would escape from the rupture of an irradiated fuel assembly.
- c. To reduce the radiation levels on the refueling floor to less than 2 mrem per hour.
- d. To provide a buffer layer of water for the reduction of fuel clad corrosion by dissolved oxygen.

QUESTION: 053 (1.00)

A complete loss of 125 VDC power to Standby Diesel Generator A has occurred. Which one of the following describes the response of the D/G to a complete loss of offsite power?

- a. The D/G will receive an automatic start signal and the output breaker will automatically close onto the emergency bus when the D/G is at rated speed and voltage.
- b. The D/G will startup and run unloaded due to a loss of breaker control power that prevents automatic closure of the output breaker.
- c. The D/G will startup and come up to rated speed but the generator output voltage will remain at zero due to the loss of power to the field flashing circuit.
- d. The D/G will receive an automatic start signal but will fail to start due to the loss of power to the starting air valves.

QUESTION: 054 (1.00)

The unit is operating at 100% rated power when a loss of RPS Bus B occurs. AOP-0010, Loss of One RPS Bus, directs the operator to immediately reset the resulting NSSSS isolation by taking the RPS POWER TRANSFER switch to:

- a. ALT A and depressing the INBOARD ISOLATION SEAL-IN RESET pushbutton.
- b. ALT A, and depressing the INBOARD and OUTBOARD ISOLATION SEAL-IN RESET pushbuttons.
- c. ALT B, and depressing the INBOARD ISOLATION SEAL-IN RESET pushbutton.
- d. ALT B, and depressing the INBOARD and OUTBOARD ISOLATION SEAL-IN RESET pushbuttons.

QUESTION: 055 (1.00)

The unit is operating at 30% rated power when ONE of the operating circulating water pumps trips. Which one of the following is the IMMEDIATE ACTION that the operator is required to take per the Abnormal Operating Procedure?

- a. When condenser vacuum decreases to less than 25 inches Hg vacuum, insert a manual reactor scram.
- b. When condenser vacuum decreases to less than 25 inches Hg vacuum, trip the main turbine.
- c. When condenser vacuum decreases to 22.3 inches Hg vacuum or less, insert a manual reactor scram.
- d. When condenser vacuum decreases to 22.3 inches Hg vacuum or less, trip the main turbine.

QUESTION: 056 (1.00)

During a refueling outage, RHR loop A is operating in the Fuel Pool Cooling Assist Mode when an inadvertent BOP Containment Isolation occurs. Which one of the following is the reason that AOP-0003 cautions the operator to secure the running RHR pump as soon as possible?

- a. To allow the operator to realign the pump to the standby LPCI mode.
- b. To prevent overheating the RHR pump due to the isolation of motor and pump cooling water.
- c. To prevent pump damage due to the isolation of the RHR pump suction from the Fuel Pool.
- d. To prevent draining the Fuel Pool to the suppression pool through the RHR minimum flow valve.

QUESTION: 057 (1.00)

Which one of the following is the reason for placing the Reactor Mode Select Switch to SHUTDOWN following an automatic scram per AOP-0001, Reactor Scram?

- a. To reduce the APRMs fixed scram setpoint.
- b. To activate the IRM scram functions.
- c. To keep the MSIVs open during the scram pressure transient.
- d. To provide a redundant RPS actuation.

QUESTION: 058 (1.00)

Which one of the following describes the proper practice for equipment isolation using air operated valves?

- a. Valves that fail OPEN shall have the control switch tagged in the CLOSED position and the air removed.
- b. Valves that fail CLOSED shall have the control switch tagged in the OPEN position and the air removed.
- c. Valves that fail OPEN shall have the control switch tagged in the CLOSED position and a gagging device installed.
- d. Valves that fail CLOSED shall have the control switch tagged in the CLOSED position and a gagging device applied.

QUESTION: 059 (1.00)

Given the following plant conditions:

- The plant is at 65% power
- The "A" Control Rod Drive (CRD) Pump is tagged for maintenance.
- The Reactor Building Operator is recharging control rod 32-33 HCU accumulator due to low pressure.

The "B" CRD Pump trips due a breaker fault.

Which one of the subsequent alarm conditions below would REQUIRE the operator to promptly initiate a manual reactor scram?

- a. SCRAM PILOT VLV AIR HEADER HIGH PRESSURE
- b. CONT ROD DRIVE HYDRAULIC DRIVE SYS HIGH TEMP
- c. CONTROL ROD DRIFT
- d. ACCUMULATOR TROUBLE

QUESTION: 060 (1.00)

Following a reactor scram due to high reactor pressure, the operator noted that a total of 9 SRVs had opened to control pressure. Which one of the following is the highest pressure the RPV could have experienced if all SRVs were functioning properly?

- a. 1145 psig
- b. 1118 psig
- c. 1109 psig
- d. 1080 psig

QUESTION: 061 (1.00)

Which one of the following describes why EOP 1, "RPV control," Caution number 2 directs the operator to open and leave open RHR Shutdown Cooling Inboard Isolation, 1E12-F009, following a LOCA?

- a. High temperature steam conditions in the drywell may cause thermal overloads in the motor to trip, rendering the valve inoperable, unless the valve is opened early in the transient.
- b. High temperatures in the drywell could cause local boiling in the piping upstream of F009, resulting in water hammer if the valve is not open.
- c. High temperature steam conditions in the drywell may cause accelerated corrosion of the motor rotor resulting in insufficient torque to operate the valve.
- d. The motor on F009 is designed for only one cycle of operation at the maximum anticipated drywell temperatures.

QUESTION: 062 (1.00)

The plant is at 75% power. Which one of the following actions can the ATC operator perform?

- a. Swap the Turbine Bldg Ventilation Fans to equalize run time.
- b. Acknowledge a Standby Gas Treatment (SGT) auto start annunciator alarm.
- c. Monitor containment pressure during venting with standby gas treatment.
- d. Go to the back panels to take Surveillance Readings.

QUESTION: 063 (1.00)

The reactor has just scrammed. The following plant conditions exist:

-Reactor power	3%
-Reactor water level	17 inches
-Reactor pressure	1047 psig
-Suppression pool water level	20.2'
-Drywell hydrogen conc.	0.4%
-Drywell pressure	0.2 psig

Which one of the following sets of EOPs must be entered?

- a. EOP 1 and EOP 2
- b. EOP 2 only
- c. EOP 1A and EOP 2
- d. EOP 1 only

QUESTION: 064 (1.00)

Which one of the following correctly states three examples of events required to be a Control Room Log entry?

- a. LPCS is declared INOP, Control rod 04-41 is bypassed, Mode Switch is placed in STARTUP.
- b. Any failed I&C surveillance, Control rod 04-41 is bypassed, Mode Switch is placed in RUN.
- c. LPCS is declared INOP, Any failed I&C surveillance, Mode Switch is placed in SHUTDOWN.
- d. LPCS is declared INOP, Control rod 04-41 is bypassed, Any failed I&C surveillance.

QUESTION: 065 (1.00)

Given the following conditions:

-Reactor pressure	200 psig
-Highest indicated drywell temp.	310 deg F.
-Highest indicated containment temp.	150 deg F.
-Narrow range (NR) level	52"
-Wide range (WR) level	39"
-Upset Range (UR) level	44"

Which one of the following is correct regarding the validity of level indications? (see attachments)

- a. All three are valid.
- b. NR and WR are valid, UR is invalid
- c. UR and WR are valid, NR is invalid
- d. NR and UR are valid, WR is invalid.

QUESTION: 066 (1.00)

Which one of the following radiation monitors in the alarm condition could require implementation of Radioactive Release Control, EOP-3?

- a. Offgas Pre-treatment Radiation Monitor.
- b. Main Steam Line Radiation Monitor High-High.
- c. Radwaste Building Ventilation Exhaust Monitor.
- d. Fuel Handling Area Radiation Monitor.

QUESTION: 067 (1.00)

In which one of the following conditions is core cooling adequate?

- a. RPV level is being maintained at -245 inches with the LPCI pumps injecting at rated capacity. Reactor pressure is 275 psig.
- b. RPV level is at -198 inches and decreasing with all ECCS pumps injecting. Reactor pressure is 325 psig.
- c. RPV level is at -215 inches with no source of injection, reactor pressure is 400 psig and one Safety Relief Valve is open.
- d. RPV level is -205 inches with no source of injection and reactor pressure is 450 psig.

QUESTION: 068 (1.00)

Following a small break LOCA, indicated wide range reactor level is -20" and slowly increasing due to RCIC injection from the CST. Other plant parameters are as follows:

RPV pressure	550 psig
Suppression pool temp	140 deg. F
Containment pressure	4.0 psig

The MINIMUM suppression pool level which will assure adequate heat capacity is:

- a. 15.3 ft
- b. 16.3 ft
- c. 18.3 ft
- d. 19.3 ft

QUESTION: 069 (1.00)

Which one of the following plant conditions requires entry into the Emergency Procedures?

- a. Suppression pool temperature at 101 deg. F.
- b. Drywell temperature at 125 deg. F.
- c. Containment temperature at 85 deg. F.
- d. Suppression pool level at 19.75 feet.

QUESTION: 070 (1.00)

The reactor is at 5% power, 920 psig, with the Mode Switch in STARTUP, when the Reactor Level instrument selected for feedwater control fails downscale. Which one of the following will occur with no operator action?

- a. Feedwater flow increases and the reactor scrams on high reactor level.
- b. Feedwater flow increases and the reactor feedwater pumps trip on high reactor level.
- c. The recirculation flow control valves lock up.
- d. The recirculation flow control valves run back to 22% flow.

QUESTION: 071 (1.00)

While operating at 100% core flow and 80% reactor power, an inadvertent EOC-RPT trip signal is generated and the recirculation system responds as designed. The COF then directs the ATC to fully open the flow control valves. Which one of the following corresponds to the final reactor power and core flow with no further operator action? (Neglect feedwater temp. and xenon effects.)

- a. 57% power, 40% core flow
- b. 48% power, 31% core flow
- c. 44% power, 41% core flow
- d. 40% power, 31% core flow

QUESTION: 072 (1.00)

During valve timing test on RHR System A, 1E12*MOVFO04A, RHR pump A suppression pool Suction Valve, is closed with all other valves/switches in their normal standby position when a valid LOCA signal occurs. In this condition, RHR pump A will:

- a. not start because of the 1E12*MOVFO04A contacts in the breaker trip circuit.
- b. not start because of the 1E12*MOVFO04A contacts in the breaker close permissive circuit.
- c. start after 1E12*MOVFO04A opens automatically.
- d. start and remains running, while 1E12*MOVFO04A remains closed.

QUESTION: 073 (1.00)

EOP-1, "RPV Control", was entered due to low RPV water level. Five minutes later, while still in EOP-1, drywell pressure rises to 2.0 psig. Which one of the following describes the required actions?

- a. Enter EOP-2 and continue on in EOP-1.
- b. Reenter EOP-1 at the beginning and enter EOP-2.
- c. Exit EOP-1 and enter EOP-2.
- d. Reenter EOP-1 at the beginning.

QUESTION: 074 (1.00)

Which one of the following describes the meaning of an illuminated red light on the VERTICAL section of panel 1H13*P601-19B, between the ADS reset and initiation switches?

- a. The tailpipe acoustic monitor is alarming
- b. The tailpipe thermocouple is alarming
- c. The SRV solenoid open limit switch is energized
- d. The SRV control switch is in the off position

QUESTION: 075 (1.00)

Following a valid ADS initiation, the operator is directed to close the ADS valves with the initiating signals still present. Which one of the following operator actions will cause the ADS valves to close?

- a. Place the control switches on 1H13P*601 for the ADS valves to the "OFF" position.
- b. Place the ADS inhibit switches on 1H13P*601 to the "NORMAL" position.
- c. Shutdown all low pressure ECCS systems in either Div. 1 or Div. 2.
- d. Depress both "ADS Timer/Level 3 Seal-In Reset" pushbuttons, S13A(B)

QUESTION: 076 (1.00)

The following SRM indications are recorded prior to commencing a Reactor Startup:

- SRM "A" 5.1 cps
- SRM "B" 2.2 cps
- SRM "C" 8.6 cps
- SRM "D" 3.8 cps

Prior to control rod withdrawal, SRM channel "C" fails downscale and is bypassed by the operator. Which one of the following describes the effect the failure of SRM channel "C" has on the reactor startup?

- a. Startup may not begin until SRM channel "C" is repaired.
- b. Startup may begin if the signal to noise ratio for SRM "B" is greater than or equal 2.
- c. Startup may not begin until all channels read greater than 3.0 cps.
- d. Startup may begin since all channels read greater than 0.7 cps.

QUESTION: 077 (1.00)

Following a Loss of Coolant Accident the following plant parameters exist:

- Reactor pressure is 380 psig and slowly decreasing
- Vessel level is -80 inches and slowly decreasing
- Drywell pressure is 2.2 psig and slowly increasing
- Containment pressure is normal and steady

Which one of the following describes the Low Pressure Coolant Injection mode of the Residual Heat Removal system?

- a. Pumps have started, but are not injecting because the injection valves, FO42A, B, and C have not opened.
- b. Pumps have started, injection valves FO42A, B, and C have opened, but reactor pressure is too high for injection.
- c. Pumps have not started, but injection valves FO42A, B and C are open.
- d. Pumps have started, injection valves FO42A, B, and C are open and injection has started.

QUESTION: 078 (1.00)

Which of the following describes the expected action(s) when depressing the "DRYWELL PRESSURE TEST" switch for the hydraulic power unit (HPU)?

- a. Flow control valve (FCV) motion is inhibited.
- b. HPU shifts to the maintenance mode.
- c. HPU shifts to the maintenance mode and all loop controllers shift to manual.
- d. FCV motion is inhibited and the HPU shifts to the maintenance mode.

QUESTION: 079 (1.00)

The "SCRAM VALVES" pushbutton on the RCIS display is backlit red. The operator depresses and holds the "SCRAM VALVES" pushbutton. A green status light illuminated on the core matrix for rod 24-29 indicates:

- a. the scram valves on rod 24-29 are in different positions.
- b. both scram solenoids for rod 24-29 are deenergized.
- c. one scram solenoid for rod 24-29 is deenergized.
- d. rod 24-29 is full in.

QUESTION: 080 (1.00)

The following are current plant conditions:

- All persons have NRC form 4 on file
- The plant has experienced a Loss of Coolant Accident.
- 3 personnel are unaccounted for in the Auxiliary Building.
- The Emergency Director has directed the Search and Rescue Team to enter the building.
- Both team members are volunteers and have no current quarterly exposure.
- Exceeding emergency exposure limits has NOT been authorized.

What is the MAXIMUM whole body exposure, according to 10 CFR 20, each member of the Search and Rescue Team is allowed to receive on this entry?

- a. 75 rem
- b. 25 rem
- c. 12 rem
- d. 3 rem

QUESTION: 081 (1.00)

With the plant at 100% power, the Shift Supervisor approves a Hot Work Permit at 2:00pm, Tuesday January 26, 1993 for a job in the Turbine Building. What is the LATEST time this Hot Work Permit can be in effect?

- a. Until 2:00pm, Wednesday January 27, 1993.
- b. Until 10:00pm, Tuesday January 26, 1993.
- c. Until the job is completed, 6:00pm, Wednesday, January 27, 1993.
- d. Until the end the shift, 6:00pm, Tuesday, January 26, 1993.

QUESTION: 082 (1.00)

OSP-0017, "Normal Control Board Lineups for Safety Related Systems," is required to be performed:

- a. after placing the Mode Switch in "Startup/Hot Standby".
- b. after placing the Mode Switch in "Run".
- c. prior to entering Mode 4 from Mode 5.
- d. prior to entering Mode 2 from Mode 4.

QUESTION: 083 (1.00)

The following drywell conditions exist:

Drywell oxygen concentration:	21.0%
Drywell hydrogen concentration:	1.0%
Drywell temperature:	125.0 degrees F
Drywell has been vented for:	45 minutes

Which Drywell condition must be waived by the Plant Manager/Designee to allow the dry well entry per RSP-0212, "Drywell Entry?"

- a. Drywell oxygen concentration
- b. Drywell hydrogen concentration
- c. Drywell temperature
- d. Drywell venting time

QUESTION: 084 (1.00)

The Administrative Control Operating Foreman is REQUIRED to be stationed:

- a. prior to the first control rod withdrawal and remain stationed until 25% reactor power.
- b. prior to the first control rod withdrawal and remain stationed until all Feedwater Regulating Valves are in service.
- c. from reactor criticality and remain stationed until reactor power is at least 25%.
- d. from reactor criticality and remain stationed until the last Feedwater Regulating Valve is in service.

QUESTION: 085 (1.00)

Which one of the following is NOT considered a CORE ALTERATION per the River Bend Technical Specifications?

- a. Removal of an LPRM string for replacement
- b. Control rod withdrawal and insertion to test a position indicator probe
- c. Removal of an uncoupled control rod for replacement
- d. Withdrawal and insertion of an IRM detector to check the drive motor

QUESTION: 086 (1.00)

Which one of the following is indicative of a seal #2 (outer seal) failure on a reactor recirculation pump?

- a. Seal #1 and #2 pressures decrease and the RECIRC PUMP OUTER SEAL HIGH LEAKAGE annunciator is received.
- b. Seal #2 pressure decreases, seal #1 pressure remains approximately constant, and the RECIRC PUMP OUTER SEAL HIGH LEAKAGE annunciator is received.
- c. Seal #1 pressure decreases to a pressure approximately equal to the pressure of seal #2 and the SEAL STAGING HIGH/LOW FLOW annunciator is received.
- d. Seal #2 pressure decreases to near atmospheric pressure, seal #1 pressure increases to about 120 psig above reactor pressure, and SEAL STAGING HIGH/LOW FLOW annunciator is received.

QUESTION: 087 (1.00)

While performing EOP-3, which one of the following plant conditions would require Emergency RPV Depressurization?

- a. RCIC equipment area temperature 150 deg F and RHR equipment area 2 temperature 160 deg F.
- b. RHR equipment area 2 temperature 160 deg F and RCIC equipment room water level 7 inches above the floor.
- c. HPCS room floor water level 5 inches above the floor and HPCS area radiation $3.5 \text{ E}+04 \text{ mr/hr}$.
- d. HPCS area radiation levels $9.8 \text{ E}+03 \text{ mr/hr}$ and RCIC equipment room area radiation $1.5 \text{ E}+04 \text{ mr/hr}$.

QUESTION: 088 (1.00)

Which one of the following is a responsibility of the Shift Supervisor concerning approvals for a Radiation Work Permit (RWP)?

- a. Approval of the RWP after ensuring that no plant evolutions are planned that may change radiological conditions in the work area.
- b. Approval of the RWP after ensuring that the protective requirements are consistent with plant conditions.
- c. Approval of revisions to a RWP after ensuring that no plant evolutions are planned that may change radiological conditions in the work area.
- d. Approval of revisions to a RWP after ensuring that the protective requirements are consistent with plant conditions.

QUESTION: 089 (2.00)

Match the automatic trip in Column A with the fault condition it is designed to prevent in Column B. Items in Column B may be used more than once or not at all.

COLUMN A (Automatic Trip)	COLUMN B (Fault Condition Prevented)
_____ a. Generator output 230 KV Circuit Breakers (20635 and 20640) trip to prevent:	1. maintaining system voltage after turbine trip.
_____ b. Trip and lockout of the normal 13.8 KV and 4.16 KV supply breakers to prevent:	2. serious fire by enabling the transformer fire protection interlock.
_____ c. Trip and lockout the exciter field breaker to prevent:	3. turbine overspeed
_____ d. Trip the main and normal station service transformer cooling system to prevent:	4. motoring the main generator
	5. a transformer sudden pressure transient
	6. supplying system power into the original fault.

QUESTION: 090 (2.00)

Match each location/device in Column A with the individual from Column B who is authorized to ISSUE THE ASSOCIATED KEY in accordance with ADM-0020, Plant Key Control. (NOTE: The items in Column B may be used more than once or not at all.)

Column A
(Location/Device)

Column B
(Individuals)

- | | |
|-----------------------------------|---|
| _____ a. Power Block Building | 1. Senior Radiation Protection Technician |
| _____ b. Very High Radiation Area | 2. Shift Supervisor |
| _____ c. Locked Valve/Device | 3. Lock and Key Supervisor |
| _____ d. High Radiation Area | 4. Security Shift Supervisor |
| | 5. Operations Supervisor |
| | 6. Director-Radiological Programs |

QUESTION: 091 (2.00)

Match the condition in Column A to the expected recirculation flow control response in Column B. (NOTE: Each response in Column B may be used more than once or not at all.)

COLUMN A (Condition)	COLUMN B (Flow Control Valve (FCV) Response)
_____ a. Reactor water level DECREASES to level 4 and LESS than three feedwater pumps are running.	1. FCV limited to 102% drive flow MAXIMUM
_____ b. Reactor water level INCREASES to level 7 and ALL three feedwater pumps are running.	2. FCV limited to 48% drive flow MINIMUM flow
_____ c. Drywell pressure INCREASES to HIGH DRYWELL PRESSURE (1.68 psig).	3. FCV runback to 60% drive flow
_____ d. Hydraulic Power Unit (HPU) failure due to undervoltage condition.	4. FCV runback to 48% drive flow
	5. FCV motion inhibit
	6. No Response

QUESTION: 092 (2.00)

With a loss of 125 VDC, match the component in Column A with the effect in Column B. (NOTE: The items in Column B may be used more than once or not at all.)

Column A
(System/Component)

Column B
(Effect on System)

_____ a. ARI

1. Will NOT operate automatically and CANNOT be manually operated locally or from the Control Room

_____ b. ADS

2. Will NOT operate automatically and CANNOT be manually operated locally but can be manually operated from the Control Room

_____ c. RCIC

3. Will NOT operate automatically, CANNOT be manually operated from the Control Room, but can be manually operated locally

_____ d. 4.16 KV Breakers
on 1ENS-SWG01B

4. Will operate automatically but CANNOT be manually operated locally or from the Control Room

QUESTION: 093 (2.00)

Match the condition in Column A with the appropriate controlled area designation from Column B. (NOTE: The items in Column B may be used more than once or not at all.)

Column A (Conditions)	Column B (Controlled Areas)
_____ a. 20 dpm/100 cm ² alpha activity	1. High Radiation Area
_____ b. 0.5 mr/hr general area radiation	2. Radiation Area
_____ c. 120 mrem dose in 5 consecutive days	3. Contaminated Area
_____ d. 2 R/hr general area radiation	4. Very High Radiation Area
	5. Radiologically Controlled Area
	6. VHR Exclusion Area
	7. Clean Area

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

ANSWER: 001 (1.00)

c.

REFERENCE:

EOP-2, HCTL Fig. 2 and HCLL Fig. 4
EPSTG*0002-1, pg 8, 10, 232
KA 295026K206 [3.5/3.7]
295026K206 .. (KA's)

ANSWER: 002 (1.00)

d.

REFERENCE:

LOTM, Chapter 34, pg 14
259002K301 [3.8/3.8]
259002K301 .. (KA's)

ANSWER: 003 (1.00)

d.

REFERENCE:

LOTM Chapter 18, Table 3
ARP-601-16
SOP-0030, High Pressure Core Spray
209002K407 [3.5/3.7]
209002K407 .. (KA's)

ANSWER: 004 (1.00)

a.

REFERENCE:

RB LOTM, Chapter 17, Sect V
KA 209001A408 [3.9/3.9]
209001A408 .. (KA's)

ANSWER: 005 (1.00)

a.

REFERENCE:

RB LOTM 30-2, pg 18 and Fig. 1
KA 271000K302 [3.3/3.9]
271000K302 .. (KA's)

ANSWER: 006 (1.00)

a.

REFERENCE:

RB LOTM 57-4, pg 6
KA 263000K401 [3.1/3.4]
263000K401 .. (KA's)

ANSWER: 007 (1.00)

a.

REFERENCE:

RB SOP-0090, pg 3
KA 290002G010 3.2/3.4
290002G010 .. (KA's)

ANSWER: 008 (1.00)

d.

REFERENCE:

RB EOP-1A
LOTM 4, 5, and 15
KA 295015A101 [3.8/3.9]
295015A101 .. (KA's)

ANSWER: 009 (1.00)

a.

REFERENCE:

RB EPSTG*0002
KA 295036A201 3.0/3.2
295036A201 .. (KA's)

ANSWER: 010 (1.00)

d.

REFERENCE:

RB EPSTG*0002, pg B-30
KA 295027K102 3.0/3.2
295027K102 .. (KA's)

ANSWER: 011 (1.00)

c.

REFERENCE:

RB LOTM 63, pg 5, 6
KA 288000K502 3.2/3.4
288000K502 .. (KA's)

ANSWER: 012 (1.00)

d.

REFERENCE:

RB SOP-0031, pg 4
KA 295021K102 3.3/3.4
295021K102 .. (KA's)

ANSWER: 013 (1.00)

a.

REFERENCE:

RB AOP-0031, pg 9
KA 295016A104 [3.1/3.2]
295016A104 .. (KA's)

ANSWER: 014 (1.00)

a.

REFERENCE:

RB AOP-0008, pg 2
KA 295019K203 [3.2/3.3]
295019K203 .. (KA's)

ANSWER: 015 (1.00)

b.

REFERENCE:

RB AOP-0008, pg 2
LOTM 5
KA 295019K201 [3.8/3.9]
295019K201 .. (KA's)

ANSWER: 016 (1.00)

d.

REFERENCE:

RB LOTM 10, pg 10
KA 215003K401 [3.7/3.7]
215003K401 .. (KA's)

ANSWER: 017 (1.00)

d.

REFERENCE:

RB LOTM 9, Table 1
KA 215004K406 [3.2/3.2]
215004K406 .. (KA's)

ANSWER: 018 (1.00)

b.

REFERENCE:

RB LOTM 11, pg 4
KA 215005A101 [4.0/4.0]
215005A101 .. (KA's)

ANSWER: 019 (1.00)

b.

REFERENCE:

RB LOTM-27, p. 8.
KA 295025K208 (3.7).
295025K208 .. (KA's)

ANSWER: 020 (1.00)

d.

REFERENCE:

RB EOP-1, Caution #1
KA 295031A201 (4.6).
295031A201 .. (KA's)

ANSWER: 021 (1.00)

b.

REFERENCE:

1. River Bend: LOTM-5, CRDH Figure.
2. KA 201003A206 (3.0).
201003A206 ..(KA's)

ANSWER: 022 (1.00)

b

REFERENCE:

River Bend LOTM-20
GE BWR-6 Technology
K/A 217000 A2.07 3.1/3.1
A2.10 3.1/3.1
217000A210 217000A207 ..(KA's)

ANSWER: 023 (1.00)

c

REFERENCE:

LOTM-6, pg 40
201005K406 3.5/3.5
201005K406 ..(KA's)

ANSWER: 024 (1.00)

a

REFERENCE:

River Bend Simulator Malf #41
202001A201 3.4/3.9
202001A201 ..(KA's)

ANSWER: 025 (1.00)

a

REFERENCE:

LOTM-17, pg 1, 5, Table 4

209001 K1.02 3.4/3.4

1.06 2.0/2.1

4.05 2.6/2.6

A2.02 3.2/3.2

209001K405

209001A202

209001K106

209001K102

.. (KA's)

ANSWER: 026 (1.00)

c

REFERENCE:

LOTM-16, pg 8

211000K408 4.2*/4.2*

211000K408 .. (KA's)

ANSWER: 027 (1.00)

a

REFERENCE:

EOP-1A, step RPA-7

295037K306 3.8/4.1

295037K306 .. (KA's)

ANSWER: 028 (1.00)

b

REFERENCE:

LOTM-15

201001K404 3.6/3.6

201001A204 3.8/3.9

201001A204 201001K404 .. (KA's)

ANSWER: 029 (1.00)

d.

REFERENCE:

1. River Bend: LOTM-27
2. KA Numbers 241000K401 (3.8).
241000K401 ..(KA's)

ANSWER: 030 (1.00)

c.

REFERENCE:

1. River Bend: LOTM-18, pg 6
2. KA Numbers 209002K103 (3.0).
209002K103 ..(KA's)

ANSWER: 031 (1.00)

b

REFERENCE:

RB ADM 022
10 CFR 55.53(e)
KA 294001A103 2.5/3.4
294001A103 ..(KA's)

ANSWER: 032 (1.00)

b.

REFERENCE:

10CFR55.13 [a] [2]
KA 294001A103 2.7/3.9
KA 294001A109
294001A109 294001A103 .. (KA's)

ANSWER: 033 (1.00)

d.

REFERENCE:

AOP-0012, pg 3
295018K202 [3.4/3.6]
295018K202 .. (KA's)

ANSWER: 034 (1.00)

b.

REFERENCE:

AOP-0004, pg 2
KA 295003G010 3.9/4.1
295003G010 .. (KA's)

ANSWER: 035 (1.00)

c.

REFERENCE:

AOP-0004, pg 11-13
KA 295003K204 3.4/3.5
295003K204 .. (KA's)

ANSWER: 036 (1.00)

c.

REFERENCE:

RB LOTM-5, FIG 7
LOTM 15, pg 6
201003A204 [3.5/3.6]
201003A204 ..(KA's)

ANSWER: 037 (1.00)

b.

REFERENCE:

LOTM 5, pg 10
201001A204 [3.8/3.9]
201001A204 ..(KA's)

ANSWER: 038 (1.00)

a.

REFERENCE:

RB AOP-0001
1. River Bend: GOP-0003, para. 3.0.
2. KA Numbers 295008A101 (3.7).
295008A101 ..(KA's)

ANSWER: 039 (1.00)

d

REFERENCE:

River Bend LOTM-20, pg 5,6
GE BWR-6 Technology
K/A 217000 A2.07 3.1/3.1
A2.10 3.1/3.1
217000A210 217000A207 .. (KA's)

ANSWER: 040 (1.00)

a [1.0]

REFERENCE:

RB LOTM-17 P. 4
GGNS, OP-LO-SYS-LP-E21, LO 3.b, P. 8
KA 209001K404 3.0/3.2
209001K404 .. (KA's)

ANSWER: 041 (1.00)

c

REFERENCE:

LOTM-7, Recirculation System, pg 11
202001K128 3.9/4.1
202001K128 .. (KA's)

ANSWER: 042 (1.00)

A

REFERENCE:

RB GET-II-07-HB pg 12
KA 294001K104 3.3/3.6
294001K104 .. (KA's)

ANSWER: 043 (1.00)

a

REFERENCE:

RB AOP-0027, SEC 5.11.2
KA 295023G011 3.9/4.2
295023G011 .. (KA's)

ANSWER: 044 (1.00)

a

REFERENCE:

RB TS 3.9.11.2, STP-204-0700
KA 295021K305 3.6/3.8
KA 205000G001 3.6/3.7
KA 205000G011 3.1/3.9
295021K305 .. (KA's)

ANSWER: 045 (1.00)

a

REFERENCE:

RB TS 3.4.1.1, AOP-0024 SEC 5.5.1
KA 295001G003 3.2/4.1
KA 202002G011 3.4/4.2
295001G003 .. (KA's)

ANSWER: 046 (1.00)

c

REFERENCE:

RB ARP-680-07/B02
KA 2950141203 4.0/4.3
KA 201003A203 3.4/3.7
KA 201003G008 3.6/3.7
295014A203 .. (KA's)

ANSWER: 047 (1.00)

b.

REFERENCE:

RB EOP-2, ENCL 21
EOP-2 BASIS, pg B-206
LOTM 63
295024A118 [3.6/3.6]
295024A118 .. (KA's)

ANSWER: 048 (1.00)

a.

REFERENCE:

RB EPSTG*0002, pg B-289
295032K302 [3.6/3.8]
295032K302 .. (KA's)

ANSWER: 049 (1.00)

c.

REFERENCE:

EPSTG*0002, pg B-235
295030G007 [3.6/3.9]
295030G007 .. (KA's)

ANSWER: 050 (1.00)

d.

REFERENCE:

EPSTG*0002, pg B-25
295012A102 [3.8/3.8]
295012A102 .. (KA's)

ANSWER: 051 (1.00)

b.

REFERENCE:

LOTM 4, pg 15
295022K101 [3.3/3.4]
295022K101 .. (KA's)

ANSWER: 052 (1.00)

b.

REFERENCE:

Technical Specification Basis 3.9.8 and 3.9.9
295023G004 [2.7/3.8]
295023G004 .. (KA's)

ANSWER: 053 (1.00)

d.

REFERENCE:

LOTM 58, pg 14
LOTM 57, Table 2
295004A102 [3.8/4.1]
295004A102 .. (KA's)

ANSWER: 054 (1.00)

d.

REFERENCE:

AOP-0010, pg 3
LOTM 51
295020A101 [3.6/3.6]
295020A101 .. (KA's)

ANSWER: 055 (1.00)

a.

REFERENCE:

RB AOP-0005, pg 2
295002A105 [3.2/3.2]
295002A105 .. (KA's)

ANSWER: 056 (1.00)

c.

REFERENCE:

AOP-0003, pg 3
295020G007 [3.0/3.3]
295020G007 .. (KA's)

ANSWER: 057 (1.00)

d.

REFERENCE:

AOP-0001, Item 6.12
 295006G007 [3.8/4.1]
 295006G007 ..(KA's)

ANSWER: 058 (1.00)

c.

REFERENCE:

ADM-0027, Protective Tagging, Sect. 7.2.3
 294001K102 [3.9/4.5]
 294001K102 ..(KA's)

ANSWER: 059 (1.00)

d.

REFERENCE:

RB ARP-680-07, pg 16
 ARP-601-22, pg 2
 KA 295022A102 [3.6/3.6]
 295022A102 ..(KA's)

ANSWER: 060 (1.00)

b.

REFERENCE:

RB LOTM-24, pg 17
KA 295007A104 [3.9/4.1]
295007A104 .. (KA's)

ANSWER: 061 (1.00)

c.

REFERENCE:

RB EPSTG*0002, pg 33
KA 295028K202 (3.2/3.3)
295028K202 .. (KA's)

ANSWER: 062 (1.00)

b.

REFERENCE:

RB ADM-0022, pg 11
KA 294001A103 (2.7/3.7)
294001A103 .. (KA's)

ANSWER: 063 (1.00)

b.

REFERENCE:

RB EOP Flowcharts
KA 295029G012 (3.8/4.4)
295029G012 .. (KA's)

ANSWER: 064 (1.00)

a.

REFERENCE:

RB OSP-0003, pg 7
KA 294001A106 (3.4/3.6)
294001A106 ..(KA's)

ANSWER: 065 (1.00)

b.

REFERENCE:

RB EOP-1, Caution 1
KA 295027K102 (3.0/3.2)
295027K102 ..(KA's)

ANSWER: 066 (1.00)

c.

REFERENCE:

RB EOP-3 and EIP-2-001
KA 295017K204 (3.1/3.3)
295038K204 ..(KA's)

ANSWER: 067 (1.00)

d.

REFERENCE:

RB EPSTG*0002, pg B-118-120, 136
KA 295031K101 (4.6/4.7)
295031K101 ..(KA's)

ANSWER: 068 (1.00)

b.

REFERENCE:

RB EOP-1, Fig, 2 & 4
KA 295026K301 (3.8/4.1)
295026K301 .. (KA's)

ANSWER: 069 (1.00)

a.

REFERENCE:

RB EOP-2
KA 295013G011 (4.1*/4.4*)
295013G011 .. (KA's)

ANSWER: 070 (1.00)

b.

REFERENCE:

RB LOTM-34, pg 15
KA 259002K302 (3.7/3.7)
259002K302 .. (KA's)

ANSWER: 071 (1.00)

c.

REFERENCE:

RB AOP-0024, ENCL 1
KA 202002A105 (3.2/3.2)
202002A105 .. (KA's)

ANSWER: 072 (1.00)

a.

REFERENCE:

RB LOTM-19, pg 3
SOP-0031, pg 6
KA 203C00A302 (4.0/3.9)
203000A302 ..(KA's)

ANSWER: 073 (1.00)

d.

REFERENCE:

RB EOP-1
KA 295010G012 [3.8/4.4]
295010G012 ..(KA's)

ANSWER: 074 (1.00)

a.

REFERENCE:

RB LOTM-24, pg 6 and Figure 21
KA 239002A304 [3.6/3.7]
239002A304 ..(KA's)

ANSWER: 075 (1.00)

d.

REFERENCE:

RB LOTM-21-4, ADS pg 4
KA 218000K501 [3.8/3.8]
218000K501 ..(KA's)

ANSWER: 076 (1.00)

b.

REFERENCE:

RB SOP-0074, pg 2, TS 4.3.7.6.c.
KA 215004G011 [2.7/3.4]
215004G011 .. (KA's)

ANSWER: 077 (1.00)

b.

REFERENCE:

RB LOTM-19, pgs 3 and 9.
KA 203000A102 [3.9/4.0]
203000A102 .. (KA's)

ANSWER: 078 (1.00)

a.

REFERENCE:

RB LOTM-8, pg 10
KA 202002A108 [3.4/3.4]
202002A108 .. (KA's)

ANSWER: 079 (1.00)

a.

REFERENCE:

RB LOTM-6, pg 36
KA 201005A301 [3.5/3.5]
201005A301 .. (KA's)

ANSWER: 080 (1.00)

d.

REFERENCE:

RB EIP-2-008, pg 3
KA 294001K103 [3.3/3.8]
294001K103 .. (KA's)

ANSWER: 081 (1.00)

a.

REFERENCE:

RB TFP-0060, pg 4
KA 294001K116 [3.5/3.8]
294001K116 .. (KA's)

ANSWER: 082 (1.00)

d.

REFERENCE:

RB OSP-0017, pg 3
KA 294001A113 [4.5/4.3]
294001A113 .. (KA's)

ANSWER: 083 (1.00)

c.

REFERENCE:

RB RSP-0212, pg 5
KA 294001K108 [3.1/3.4]
294001K108 .. (KA's)

ANSWER: 084 (1.00)

d.

REFERENCE:

RB ADM-0022, pg 13
KA 294001A109 [3.3/4.2]
294001A109 ..(KA's)

ANSWER: 085 (1.00)

a or d

REFERENCE:

RBS TS Definition of CORE ALTERATION
KA 201003G011 3.2/3.9*
215003G011 3.4/4.1
214000G011 3.1/4.0
215005G011 3.4/4.1
214000G011 215005G011 201003G011 215003G011 ..(KA's)

ANSWER: 086 (1.00)

b.

REFERENCE:

RB LOTM-7, pg 5
KA 202001A411 [3.2/3.3]
202001A411 ..(KA's)

ANSWER: 087 (1.00)

d.

REFERENCE:

RB EOP-3, STEP SC-19, TABLE 4
KA 295033G012 [3.8/4.4]
295033G012 ..(KA's)

ANSWER: 088 (1.00)

a.

REFERENCE:

RB RSP-0200, Sect 4.0
KA 294001K103 [3.3/3.8]
294001K103 .. (KA's)

ANSWER: 089 (2.00)

a. 4
b. 6
c. 1
d. 2

REFERENCE:

LOTM-53, pp. 4 through 7
KA 245000K101 3.2/3.3
KA 245000K301 3.4
KA 245000K409 3.1
KA 245000K606 3.0
KA 245000A301 3.6
245000K101 245000K301 .. (KA's)

ANSWER: 090 (2.00)

a. 4
b. 1
c. 2
d. 1

REFERENCE:

RB ADM-0020, Plant Key Control, Rev 5
KA 294001K105 [3.2/3.7]
294001K105 .. (KA's)

ANSWER: 091 (2.00)

- a. 3
- b. 6
- c. 5
- d. 5

REFERENCE:

- 1. River Bend: LOTM-8, pg 13
- 4. KA Numbers 202002A301 (3.6).
202002A301 ..(KA's)

ANSWER: 092 (2.00)

- a. 1
- b. 1
- c. 1
- d. 3

REFERENCE:

- RB LOTM 5, pg 4
- LOTM 57, Table 2
- LOTM 20, pg 12
- LOTM 21, pg 2
- 295004K203 [3.3/3.3]
- 295004K203 ..(KA's)

ANSWER: 093 (2.00)

- a. 3
- b. 5
- c. 2
- d. 4

REFERENCE:

RPP-0005, Posting of Radiologically Controlled Areas, Sect 3
294001K103 [3.3/3.8]
294001K103 .. (KA's)

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