

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

Applicant Information

Name: MASTER	Region: III
Date: 03/08/02	Facility/Unit: DAVIS BESSE
License Level: RO	Reactor Type: BW
Start Time: 0802	Finish Time:

Instructions

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

Applicant Certification

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

Applicant's Signature

Results

Examination Value	_____ 100 _____ Points
Applicant's Score	_____ Points
Applicant's Grade	_____ Percent

PART A - GENERAL GUIDELINES

1. **[Read Verbatim]** Cheating on any part of the examination will result in a denial of your application and/or action against your license.
2. If you have any questions concerning the administration of any part of the examination, do not hesitate asking them before starting that part of the test.
3. SRO applicants will be tested at the level of responsibility of the senior licensed shift position (i.e., shift supervisor, senior shift supervisor, or whatever the title of the position may be).
4. You must pass every part of the examination to receive a license or to continue performing license duties. Applicants for an SRO-upgrade license may require remedial training in order to continue their RO duties if the examination reveals deficiencies in the required knowledge and abilities.
5. The NRC examiner is not allowed to reveal the results of any part of the examination until they have been reviewed and approved by NRC management. Grades provided by the facility licensee are preliminary until approved by the NRC. You will be informed of the official examination results about 30 days after all the examinations are complete.
6. After you complete the examination, sign the statement on the cover sheet indicating that the work is your own and you have not received or given assistance in completing the examination.
7. To pass the examination, you must achieve a grade of 80.00 percent or greater; grades will not be rounded up to achieve a passing score. Every question is worth one point.
8. For an initial examination, the nominal time limit for completing the examination is six hours; extensions will be considered under extenuating circumstances.
9. You may bring pens, pencils, and calculators into the examination room. Use dark pencil to facilitate machine grading.
10. Print your name in the blank provided on the examination cover sheet and the answer sheet.
11. Mark your answers on the answer sheet provided. Use only the paper provided and do not write on the back side of the NCS Test Sheet. If you decide to change your original answer, erase thoroughly and enter the desired answer.

12. If you have any questions concerning the intent or the initial conditions of a question, do *not* hesitate asking them before answering the question. Ask questions of the NRC examiner or the designated facility instructor *only*. When answering a question, do *not* make assumptions regarding conditions that are not specified in the question unless they occur as a consequence of other conditions that are stated in the question. For example, you should not assume that any alarm has activated unless the question so states or the alarm is expected to activate as a result of the conditions that are stated in the question. Finally, answer all questions based on actual plant operation, procedures, and references. If you believe that the answer would be different based on simulator operation or training references, you should answer the question based on the *actual plant*.
13. Restroom trips are permitted, but only one applicant at a time will be allowed to leave. Avoid all contact with anyone outside the examination room to eliminate even the appearance or possibility of cheating.
14. When you complete the examination, assemble a package including the examination cover sheet and the NCS Test Sheet, and give it to the NRC examiner or proctor. Remember to sign the statement on the examination cover sheet indicating that the work is your own and that you have neither given nor received assistance in completing the examination. Your examination will be retained by the facility training department.
15. After you have turned in your examination, leave the examination area as defined by the proctor or NRC examiner. If you are found in this area while the examination is still in progress, your license may be denied or revoked.
11. Do you have any questions?

QUESTION: 001 (1.00)

The reactor was at 100% power. A reactor trip occurred 30 minutes ago. The most reactive control rod failed to insert and has been determined to be immovable.

How is the shutdown margin (SDM) effected by the following reactivity effects?

- a. Xenon will increase the SDM; the stuck control rod will lower the SDM.
- b. Xenon has no effect on the SDM; the stuck control rod has no effect on the SDM.
- c. Xenon will increase the SDM; the stuck control rod has no effect on the SDM.
- d. Xenon has no effect on the SDM; the stuck control rod will lower the SDM.

QUESTION: 002 (1.00)

The following plant conditions exist:

- The plant is operating at 100%.
- Annunciator Alarm 6-5-A, MONITOR SYSTEM TRBL, is received.
- RCP 2-2 indicates 450 amps.

Which one of the following statements would explain the listed conditions?

- a. B Bus voltage is low.
- b. RCP 2-2 has a sheared shaft.
- c. RCP 2-2 upper motor bearing is failing.
- d. MU 66B has failed closed.

QUESTION: 003 (1.00)

The reactor and all four RCPs were tripped from 100% power due to a loss of cooling water. Both AFPTs tripped on overspeed. The secondary side Reactor Operator:

- a. CAN start the MDFP immediately, if he/she announces his/her intended action in accordance with Specific Rule 4, SG Level Setpoints.
- b. CAN NOT start the MDFP until Step 4.8, Check for SFRCS Actuation, is reached in DB-OP-02000.
- c. CAN start the MDFP immediately with permission from the Unit Supervisor and the Shift Manager.
- d. CAN NOT start the MDFP until directed to use Attachment 1, Guidelines for Restoring Feedwater.

QUESTION: 004 (1.00)

Immediately following a reactor trip, the following conditions exist:

- CRD trip breakers open
- NI power is 1×10^{-6} amps and lowering
- Control Rod 3-1 100% withdrawn
- Control Rod 3-3 100% withdrawn

Which one of the following identifies the correct action for this situation in accordance with DB-OP-02000, RPS, SFAS, SFRCS, or SG Tube Rupture?

- a. Route to DB-OP-02510, Loss of Reactor Coolant System Boron, at the completion of the Supplementary Actions.
- b. Initiate emergency boration until adequate shutdown margin is restored in accordance with Specific Rule 1, Reactivity Control.
- c. Momentarily de-energize E2 and F2 in accordance with the Immediate Actions.
- d. Commence boration to achieve acceptable shutdown margin in accordance with the Supplementary Actions.

QUESTION: 005 (1.00)

Following a loss of all CCW pumps, a makeup pump can be operated for up to one hour without cooling water in order to:

- a. allow post-trip pressurizer level recovery.
- b. provide seal injection since CCW is lost to the RCPs.
- c. ensure a boron injection flowpath is available to maintain shutdown margin greater than or equal to 1% $\Delta K/K$ until xenon can add adequate negative reactivity.
- d. prevent the need to start HPI pumps and LPI pumps since CCW essential headers are NOT available.

QUESTION: 006 (1.00)

During an overcooling event, pressurizer level lowers to four inches. RCS inventory should be maintained by running both makeup pumps with suction from the:

- a. makeup tank at maximum flow through both makeup injection lines.
- b. BWST at maximum flow through both makeup injection lines.
- c. makeup tank with flow limited to 250 gpm through each makeup injection line.
- d. BWST with flow limited to 250 gpm through each makeup injection line.

QUESTION: 007 (1.00)

The following plant conditions exist:

- A reactor startup is in progress.
- An electrical problem has caused a loss of D2 Bus and D1 Bus.
- The auxiliary boiler has tripped and condenser pressure is increasing.
- The MDFP has tripped.

Place the following in the correct hierarchy of performance:

1. DB-OP-02518, High Condenser Pressure
 2. DB-OP-02000, Immediate Actions
 3. DB-OP-02000, Supplementary Actions
 4. DB-OP-02000, Specific Rules
 5. DB-OP-02521, Loss of AC Bus Power Sources
- a. 5, 2, 3, 4, 1
 - b. 2, 3, 4, 1, 5
 - c. 5, 1, 2, 4, 3
 - d. 2, 4, 3, 1, 5

QUESTION: 008 (1.00)

A loss of _____ will cause MFPT 2 to be driven to zero speed.

- a. Essential Panel Y2
- b. Essential Panel Y4
- c. Panel YBU
- d. Non-Essential Panel YBR

QUESTION: 009 (1.00)

Direction provided in DB-OP-02000, RPS, SFAS, SFRCS Trip, or SG Tube Rupture, takes priority over abnormal procedures with the exception of:

- a. DB-OP-02508, Control Room Evacuation and DB-OP-02519, Serious Control Room Fire.
- b. DB-OP-02501, Serious Station Fire and DB-OP-02519, Serious Control Room Fire.
- c. DB-OP-02508, Control Room Evacuation and DB-OP-02529, Fire Procedure.
- d. DB-OP-02501, Serious Station Fire and DB-OP-02529, Fire Procedure.

QUESTION: 010 (1.00)

The following plant conditions exist:

- The plant was at 100% power.
- Adequate subcooling margin has been lost due to a small break loss of coolant accident.
- There is NO makeup OR HPI flow available.

Which one of the following is the correct response to these conditions?

Fully open the AVVs to cooldown the RCS at:

- a. 100°F/hour until CFTs begin to empty.
- b. 100°F/hour until LPI flow has been established.
- c. the maximum attainable rate until CFTs begin to empty.
- d. the maximum attainable rate until LPI flow has been established.

QUESTION: 011 (1.00)

Which one of the following explains why the reactor coolant pumps are tripped following a loss of adequate subcooling margin?

- a. Prevent possible uncovering the core.
- b. Reduce tension stresses on the steam generator tubes.
- c. Reduce the heat input into the RCS.
- d. Prevent damage to the RCPs due to cavitation.

QUESTION: 012 (1.00)

Which one of the following annunciators, if alarming, is a symptom of high activity in the Reactor Coolant System and requires entry into DB-OP-02535, High Activity in the Reactor Coolant System?

- a. LETDOWN RAD HI (2-1-A)
- b. CTMT RAD HI (4-1-A)
- c. SFAS CTMT RAD CH TRIP (5-1-A)
- d. VAC SYS DISCH RAD HI (9-4-A)

QUESTION: 013 (1.00)

The Station Blackout Diesel Generator (SBODG) has been started from the Control Room and loaded on D2 Bus following a station blackout. The SBODG then automatically trips.

Determine which one of the following caused the trip.

- a. Negative phase sequence
- b. Reverse power
- c. Transformer DF8 overcurrent
- d. Ground overcurrent

QUESTION: 014 (1.00)

The plant is at 100% power. A seismic event occurs causing a Service Water System break in the TPCW header.

Action is required within three hours to isolate the service water break to prevent:

- a. flooding of the MDFP.
- b. flooding of the AFPs.
- c. loss of ultimate heat sink inventory.
- d. loss of high voltage switchgear buses.

QUESTION: 015 (1.00)

The following plant conditions exist:

- A plant shutdown is in progress due to an SG tube rupture.
- Steam flow is being transferred from the turbine to the Turbine Bypass Valves (TBVs).
- Steam generators are on low level levels.
- Megawatt demand is 220 MWE.

The measured variable display for the TBVs shows the pointer below the carat. This indicates that the TBVs are set to control header pressure at the _____ psig setpoint.

- a. 1025
- b. 995
- c. 920
- d. 870

QUESTION: 016 (1.00)

The following plant conditions exist:

- A plant shutdown and cooldown is in progress due to an 80 gallon per minute steam generator tube leak.
- The Technical Support Center has determined the need to drain the condenser hotwell.

The hotwell drains will be routed to _____ in order to reduce hotwell level.

- a. the Circulating Water System
- b. Condensate Polishing Demin Holdup Tanks
- c. any of the settling basins
- d. Training Building Pond

QUESTION: 017 (1.00)

The following plant conditions exist:

- The reactor was initially at 40% power.
- A loss of both stator cooling water pumps caused a plant runback.

Which one of the following actions would have to be taken to clear annunciator 14-6-D, ICS IN TRACK?

- a. Reclose the turbine generator output breakers ACB 34560 and ACB 34561.
- b. Adjust reactor power to clear the ULD low load limit.
- c. Transfer turbine control to ICS AUTOMATIC.
- d. Adjust feedwater flow to match reactor power.

QUESTION: 018 (1.00)

The following plant conditions exist:

- The reactor was initially at 50% power with MFPT 1 out of service.
- Following an MFPT 2 control system failure, the reactor tripped on high RCS pressure.
- AFW started on low SG levels.
- MFPT 2 is running on the low speed stop.

What action should be taken NEXT based on these conditions?

- a. Place MFPT 2 speed in manual and control steam generators on low level limits to balance steam loads.
- b. Initiate AFW flow and isolation of both SGs to replace the malfunctioning MFW System.
- c. Start the MDFP in the AFW mode and shutdown the AFPTs in preparation for trip recovery.
- d. Start the MDFP in the MFW mode and shut down the AFPTs to conserve water in the condensate storage tanks.

QUESTION: 019 (1.00)

The following plant conditions exist:

- The reactor has tripped due to a loss of MFW.
- Both AFW pumps tripped on overspeed.
- The standby makeup pump failed to start.
- MDFP is out of service for maintenance.

MU/HPI cooling should be initiated _____.

- a. immediately upon entry in DB-OP-02000
- b. after completion of the Immediate Actions in DB-OP-02000
- c. when Step 4.10, Check for Lack of Heat Transfer, is reached in the Supplementary Actions of DB-OP-02000
- d. when the first T_{hot} indication reaches 600°F

QUESTION: 020 (1.00)

The reactor was at 100% when a loss of D1P and DAP occurred.

DB-OP-02537, Loss of D1P and DAP, directs the verification of CCW containment isolation OPEN:

- a. to verify cooling water is available to the CRDMs.
- b. to verify cooling water is available to both letdown coolers.
- c. because CCW Pump 1 has lost control power.
- d. because seal injection is lost to two RCPs.

QUESTION: 021 (1.00)

The plant is at 100% power.

- Maintenance is in progress on Seal Injection Filter 1.
- A leaking Seal Injection Filter isolation valve has led to high airborne radioactivity.

Which one of the following ventilation systems will automatically shutdown?

- a. The Fuel Handling Ventilation System
- b. The Radwaste Area Ventilation System
- c. The Containment Purge Ventilation System
- d. The Main Station Exhaust System

QUESTION: 022 (1.00)

The following plant conditions exist:

- Tave is 584°F and rising.
- Main feedwater flow is rising.
- Reactor power is 92% and rising.
- Neutron error is 2% in the "IN" direction.
- Rod index is 293% and rods are moving out.
- RCS pressure is 2170 psig and rising.
- Diamond panel OUT COMMAND red light is lit.
- Turbine header pressure is 870 psig and stable.
- Generator output is 880 MWE and rising.

The operator should:

- a. put Feedwater Loop Demand HAND/AUTO stations in HAND and reduce feedwater flow.
- b. put the turbine in MANUAL and reduce megawatts.
- c. depress and hold the ROD STOP button.
- d. place the SG/RX Demand HAND/AUTO station in HAND and reduce the demand.

QUESTION: 023 (1.00)

Following a reactor trip, which one of the following would require the initiation of AFW flow and isolation of both steam generators?

- a. NNI X AC power supply indicating light is lit.
- b. Both SG levels indicate 40 inches.
- c. Instrument air header pressure indicates 91 psig.
- d. ICS HAND/AUTO station indicating lights are off.

QUESTION: 024 (1.00)

The following sequence of events has occurred:

- The main turbine tripped at 45% reactor power.
- Main Stop Valve 1 failed to close.
- Main Control Valve 4 failed to close.

After completion of the appropriate mitigating procedure, the plant status will be:

- a. reactor power at 28%, steam generator level control on low level limits.
- b. reactor power at 0%, steam generator level control on low level limits.
- c. reactor power at 28%, steam generator level control on auxiliary feedwater.
- d. reactor power at 0%, steam generator level control on auxiliary feedwater.

QUESTION: 025 (1.00)

A plant transient is in progress. Plant conditions are as follows:

- All RCPs are tripped.
- Incore thermocouples indicate 900°F.
- RCS pressure is 200 psig.
- Both SGs are unisolated and pressures are approximately 815 psig.

In accordance with DB-OP-02000, RPS, SFAS, SFRCS Trip, or SG Tube Rupture, Step 9.13, the operator is directed to induce heat transfer from the RCS to the SGs by rapidly lowering BOTH SG pressures to achieve a 100°F step decrease in secondary T_{sat} .

Which one of the following SG pressures corresponds to this new T_{sat} condition?

- a. 125 psig
- b. 210 psig
- c. 300 psig
- d. 400 psig

QUESTION: 026 (1.00)

The following plant conditions exist:

- A LOCA is in progress.
- BWST level is 8 feet and decreasing.
- HPI is running and required to be in operation by DB-OP-02000, RPS, SFAS, SFRCS Trip or SG Rupture.

Which one of the following is the reason for closing the HPI recirc valves (HP-32 and HP-31) when placing HPI into the piggyback mode?

- a. Prevent depletion of the containment emergency sump.
- b. Increase the discharge head of the HPI pumps.
- c. Increase the HPI injection flow rate.
- d. Ensure containment integrity is maintained.

QUESTION: 027 (1.00)

The following plant conditions exist:

- A loss of all main and auxiliary feedwater has occurred.
- AFTER makeup/HPI cooling has been initiated in accordance with DB-OP-02000, RPS, SFAS, SFRCS Trip, or SG Tube Rupture, Makeup Pump 1 trips due to an electrical fault.

Which one of the following is the correct response to the loss of MU Pump 1?

- a. Throttle MU 32 and MU 6419 to limit injection flow to 250 gpm per makeup line.
- b. Close MU 6421 to prevent runout of Makeup Pump 2.
- c. Open MU 6406 to ensure minimum recirc flow is available for Makeup Pump 2.
- d. No action is required since MU 6409 is closed, separating the makeup injection lines.

QUESTION: 028 (1.00)

The following plant conditions exist:

Plant heatup is in progress.

- RCS temperature is 210°F.
- RCS pressure is 250 psig.
- Loop 2 RCPs are running.
- DH Train 2 is aligned in the decay heat mode.
- DH Train 1 is aligned in the LPI mode.
- A leak develops in the Decay Heat System requiring DH Pump 2 to be stopped and DH 12 DH NORMAL SUCTION ISOLATION, to be closed.

Which one of the following Tech. Specs. should be entered?

- a. 3.1.2.2 for an inoperable boron injection flowpath.
- b. 3.4.1.2 since less than two coolant loops are operable.
- c. 3.4.2 for an inoperable DHR relief valve, DH 4849.
- d. 3.5.3 since only one ECCS subsystem is operable.

QUESTION: 029 (1.00)

The following plant conditions exist:

- The plant is at 50% power.
- RPS Channel 2 was de-energized for maintenance.
- A loss of Y1 led to a loss of second RPS channel and a reactor trip.

Which one of the following Nuclear Instruments (NI) can be used to monitor reactor power 15 minutes after the reactor trip?

- a. NI 1, SOURCE RANGE LOG COUNT RATE
- b. NR NI 3-1, INTERMEDIATE RANGE Recorder
- c. Annunciator 5-5-E, SUR ROD WITHDRAW INHIBIT
- d. NI 5875A, SOURCE RANGE Gamma-Metrics Channel 2

QUESTION: 030 (1.00)

The following plant conditions exist:

- The plant was at 100% power.
- A loss of off-site power occurred 10 minutes ago.
- RCS pressure is 1670 psig.
- Average incore temperature is 600°F.
- RCS hotleg temperature is 594°F.
- RCS average temperature is 572°F.
- RCS coldleg temperature is 550°F.

Which one of the following is the correct subcooling margin for the above plant conditions?

- a. 12°F.
- b. 18°F.
- c. 4°F.
- d. 62°F.

QUESTION: 031 (1.00)

Due to an RCS leak, the Shift Manager directs the spare Reactor Operator to make Emergency Plan notifications using the 4-Way Ringdown Phone.

Which one of the following combinations identifies who will be notified?

1. Sandusky County Sheriff
 2. Ohio Highway Patrol
 3. Lucas County Sheriff
 4. Carroll Township Police
 5. Ottawa County Sheriff
 6. Erie County Sheriff
-
- a. 1, 3, and 5
 - b. 2, 4, and 6
 - c. 2, 3, and 5
 - d. 1, 4, and 6

QUESTION: 032 (1.00)

Which of the following are the three areas that affect Safe Shutdown Systems that are covered by RA-EP-02880, Internal Flooding?

1. Service Water Pump Room
 2. Emergency Diesel Generator Rooms
 3. Component Cooling Water Pumps Room
 4. Auxiliary Feedwater Pump Rooms
 5. Emergency Core Cooling Systems Room
 6. Borated Water Storage Tank Pipe Tunnel
-
- a. 1, 3, and 5
 - b. 2, 4, and 6
 - c. 1, 2, and 6
 - d. 3, 4, and 5

QUESTION: 033 (1.00)

Which of the following are monitored to ensure the minimum DNBR is maintained in accordance with Tech. Spec. 3.2.5?

1. Axial Power Imbalance
 2. Quadrant Power Tilt
 3. Regulating Rod Groups Insertion Limits
 4. RCS Hot Leg Temperature
 5. RCS Pressure
 6. RCS Flow
-
- a. 1, 2, and 3
 - b. 2, 4, and 5
 - c. 1, 3, and 6
 - d. 4, 5, and 6

QUESTION: 034 (1.00)

The following plant conditions exist:

- The plant is at 100% at the end of core life.
- T_{ave} is being reduced from 582°F to 576°F in accordance with DB-OP-06902, Power Operations.

In response to the T_{ave} reduction, Group 7 rods will automatically:

- a. withdraw due to the addition of positive reactivity.
- b. insert due to the addition of negative reactivity.
- c. withdraw due to the addition of negative reactivity.
- d. insert due to the addition of positive reactivity.

QUESTION: 035 (1.00)

CC 4100, Seal Cooling CCW Return from RCP 1-1, will automatically close if RCP 1-1:

- a. seal cooler CCW pressure is HIGH.
- b. seal return temperature is HIGH.
- c. seal return flow is LOW.
- d. seal cooler CCW flow is LOW.

QUESTION: 036 (1.00)

The following plant conditions exist:

- The plant is at 100% power.
- All systems in a normal lineup.
- A leak in Letdown Cooler 1 has caused MU 2B, Letdown Isolation Valve, to automatically close.

Which one of the following automatic actions would occur as a result of MU 2B closing?

- a. MU 32, Pressurizer Level Control, would continuously cycle open and closed.
- b. MU 19, RCP Seal Injection Flow Control, would continuously cycle open and closed.
- c. RC 2, Pressurizer Spray Valve, would continuously cycle open and closed.
- d. RC 2A, PORV, would continuously cycle open and closed.

QUESTION: 037 (1.00)

The reactor has tripped, and all control rods have inserted. Nine minutes after the trip, the following plant conditions exist:

- Intermediate Range, NI-3, indicates a power level decrease of one decade every three minutes.
- Intermediate Range, NI-4, indicates a power level decrease of one decade every nine minutes.
- NI-3 currently reads 8×10^{-10} amps decreasing.
- NI-4 currently reads 6×10^{-8} amps decreasing.

Which one of the following explains the reason for the response of the intermediate range nuclear instruments?

- a. Compensating voltage on NI-3 is set too high.
- b. Compensating voltage on NI-3 is set too low.
- c. Compensating voltage on NI-4 is set too low.
- d. Compensating voltage on NI-4 is set too high.

QUESTION: 038 (1.00)

A control rod drive ventilation fan should be started whenever:

- a. only one containment air cooler is available for cooling containment.
- b. component cooling water is lost to the control rod drive motors.
- c. the containment recirc fans are NOT running.
- d. the Control Rod Drive System is capable of rod withdrawal.

QUESTION: 039 (1.00)

The following plant conditions exist:

- The reactor tripped.
- Two control rods failed to insert.
- Boration from the BWST is in progress in order to establish adequate shutdown margin.
- All other post-trip responses are normal.

Twenty minutes after boration has been established, RCP seal return flow annunciators begin to alarm. Which one of the following actions should be taken?

- a. Use DB-OP-06005, RC Pump Operation, to align Demineralized water to supply flush flow due to high boron concentration affecting the RCP seal face clearances.
- b. Use DB-OP-02000, RPS, SFAS, SFRCS Trip or SGTR, to lower Makeup Tank level due to high makeup tank level and pressure affecting seal return flows.
- c. Use DB-OP-06015, BWST Operating Procedure, to raise BWST temperature due to low seal injection water temperature from the BWST affecting the RCP seal face clearances.
- d. Use DB-OP-06006, Makeup and Purification, to lower the letdown flow rates due to high letdown flow rates affecting seal return flows.

QUESTION: 040 (1.00)

The following plant conditions exist:

- The plant is at 75% power.
- All systems are in a normal lineup.

Which one of the following is the correct action if Condensate Pump 1 would trip?

- a. Start the standby condensate pump to maintain flow less than 3.5 MPPH per pump, in accordance with DB-OP-06221, Condensate System.
- b. Start a rapid plant shutdown to maintain deaerator levels at 8 feet, in accordance with DB-OP-02504, Rapid Shutdown.
- c. Monitor the automatic ICS runback to 55% power, in accordance with DB-OP-02014, MSR/ICS Panel 14 Annunciators.
- d. Throttle CD 2796, Condensate Pump Discharge Pressure Control Valve, to maintain discharge pressure greater than 190 psig, in accordance with DB-OP-02013, Condensate Feedwater Alarm Panel 13 Annunciators.

QUESTION: 041 (1.00)

The following plant conditions exist:

- Makeup/high pressure injection cooling is in progress due to a loss of all feedwater.
- Subcooling margin is 5°F.

The motor driven feed pump is started in the main feedwater mode.

Steam generator levels should be maintained at:

- a. 40 inches.
- b. 49 inches.
- c. 124 inches.
- d. 240 inches.

QUESTION: 042 (1.00)

The following plant conditions exist:

- The plant is at 100% power.
- All systems are in a normal lineup.

A loss of ICS DC power occurs. Prior to any operator action, the speed of BOTH main feed pumps will go to:

- a. 3900 RPM.
- b. 4400 RPM.
- c. 4600 RPM.
- d. 5300 RPM.

QUESTION: 043 (1.00)

The following plant conditions exist:

- A loss of offsite power has occurred.
- Both AFPTs tripped.

The motor driven feed pump can be started if 4160 VAC Bus _____ and 480 VAC Motor Control Center _____ are re-energized.

- a. D2; F71
- b. D2; F13
- c. C2; F71
- d. C2; F13

QUESTION: 044 (1.00)

The following plant conditions exist:

- A miscellaneous waste monitor tank release is in progress.
- RE 1878B, Miscellaneous Radwaste Monitor RE, is inoperable.
- Annunciator 7-1-D, MISC WST SYS OUT RAD HI, alarms due to a WARN alarm on RE 1878A.

In accordance with DB-OP-03011, Radioactive Liquid Batch Release, the release:

- a. should be terminated by stopping the dilution pump from the Control Room.
- b. should be terminated by closing WM 1876, Misc Liquid Wst Disch Iso Vlv, from the Radwaste Control Panel.
- c. can continue if four-hour grab samples are taken by Chemistry.
- d. can continue with both RE 1878A and RE 1878B inoperable with Radiation Protection Manager approval.

QUESTION: 045 (1.00)

A General Emergency has been declared due to a waste gas decay tank rupture.

Which one of the following would be used to obtain data for an Off-Site Dose Assessment Nomogram?

- a. RE 4597AA, Containment Atmospheric Radiation Monitor, and the 4-way ring down circuit.
- b. RE 4598AA, Station Vent Radiation Monitor, and the 4-way ring down circuit.
- c. RE 4597AA, Containment Atmosphere Radiation Monitor, and the Meteorological Tower.
- d. RE 4598AA, Station Vent Radiation Monitor, and the Meteorological Tower.

QUESTION: 046 (1.00)

Which one of the following will automatically occur upon receipt of Annunciator 9-3-A, UNIT VENT RAD HI?

- a. The Control Room Normal Ventilation System will shut down.
- b. The Control Room Emergency Ventilation System will start up.
- c. The Fuel Handling Ventilation System will shut down.
- d. The Station Emergency Ventilation System will start up.

QUESTION: 047 (1.00)

During a plant heatup, SFAS low pressure trips are reset at an RCS pressure of 1650 psig to:

- a. prevent an SFAS channel from reaching the automatic block reset prior to resetting the low pressure trip.
- b. ensure an inadvertent HPI actuation does not cause RCS pressure to exceed the reactor vessel pressure-temperature limit.
- c. prevent the SFAS pressurizer heater interlock bistable from de-energizing pressurizer heaters.
- d. ensure an inadvertent HPI actuation does not cause pressurizer level to exceed the maximum Tech. Spec. limit.

QUESTION: 048 (1.00)

Which of the following components receive seal water from the Condensate System?

1. Main feed pump shaft seal
 2. Main feed pump turbine shaft seal
 3. Main feed pump booster pump shaft seal
 4. Main feed pump turbine drain pump shaft seal
- a. 1, 2, and 3
 - b. 2, 3, and 4
 - c. 1, 3, and 4
 - d. 1, 2, and 4

QUESTION: 049 (1.00)

The following plant conditions exist:

- Makeup/high pressure injection cooling is in progress due to a loss of all feedwater.
- The Safety Parameter Display System has failed.
- Auxiliary feedwater has been restored to SG2.

To induce primary to secondary heat transfer, lower _____.

- a. SG2 saturation temperature 50°F lower than average incore temperature
- b. SG2 saturation temperature 50°F lower than Loop 2 hotleg temperature
- c. makeup/HPI flow to raise average incore temperature 50°F higher than SG2 saturation temperature
- d. makeup/HPI flow to raise Loop 2 hotleg temperature 50°F higher than SG2 saturation temperature

QUESTION: 050 (1.00)

The following plant conditions exist:

- The reactor vessel has been defueled.
- A loss of offsite power occurs.
- EDG 1 starts and energizes C1 Bus.
- D1 Bus locks out.

Which one of the following methods can be used for cooling the Spent Fuel Pool (SFP)?

- a. Energize C2 Bus from C1 Bus and restart SFP Pump 1.
- b. Align Decay Heat Pump 1 to the SFP and start Decay Heat Pump 1.
- c. Energize D2 Bus from the SBODG and restart SFP Pump 2.
- d. Align Decay Heat Pump 2 to the SFP and start Decay Heat Pump 2.

QUESTION: 051 (1.00)

The following plant conditions exist:

- The plant tripped due to a loss of offsite power.
- A plant cooldown is being performed to comply with Tech. Specs.
- RCS hotleg temperature is 550°F.
- RCS coldleg temperature is 518°F.
- RCS pressure is 1400 psig.
- Pressurizer level is increasing.
- Computer Point T012, Reactor Vessel Head Vent Temperature, indicates 586°F.

Which one of the following actions should be taken?

- a. Increase cooldown rate to lower reactor vessel head vent temperature.
- b. Increase RCS pressure to restore subcooling margin.
- c. Increase letdown flow to lower pressurizer level.
- d. Increase SG steaming rate to enhance natural circ flow.

QUESTION: 052 (1.00)

A small break LOCA has occurred resulting in a plant trip. The following plant conditions exist:

- Incore thermocouples read 580°F and steady.
- RCS pressure is 1400 psig and steady.
- All equipment has operated as designed.
- Average CAC suction temperature is 173°F.

Which one of the following explains Annunciator 3-3-F, CF TK 1 LVL HI, being lit?

- a. Increased containment PRESSURE has resulted in increased differential pressure across the CFT 1 level transmitter.
- b. Increased containment TEMPERATURE has resulted in decreased CFT 1 level indicator reference leg density.
- c. Increased containment PRESSURE has resulted in decreased differential pressure across the CFT 1 level transmitter.
- d. Increased containment TEMPERATURE has resulted in increased CFT 1 level indicator reference leg density.

QUESTION: 053 (1.00)

The following plant conditions exist:

- The plant is at 100% power.
- MU 32, MAKE FLOW CONTROLLER, is opening.
- Temperature compensated pressurizer level has taken a STEP DROP to 150 inches.
- BOTH uncompensated pressurizer level instruments indicate 145 inches.
- The selected pressurizer temperature indicates 350°F.

Which one of the following actions should be taken IMMEDIATELY?

- a. Select the alternate pressurizer temperature instrument.
- b. Select an alternate temperature compensated pressurizer level instrument.
- c. Close MU 2B, Letdown Isolation Valve.
- d. Place MU 32 in HAND and obtain desired makeup flow.

QUESTION: 054 (1.00)

The following plant conditions exist:

- A plant shutdown and cooldown is in progress.
- RCS pressure is 1620 psig.
- RCS temperature is 460°F.
- Group 1 Control Rods are withdrawn.

The lower detector for power range NI 6 fails high.

The NI failure will _____.

- a. cause RPS Channel 1 to trip on high flux
- b. cause RPS Channel 1 to trip on flux/delta flux/flow
- c. have no effect since RPS Channel 1 is in shutdown bypass
- d. have no effect since a single detector failure does NOT exceed the high flux trip setpoint of 104.75%

QUESTION: 055 (1.00)

The following plant conditions exist:

- The plant is at 100% power.
- The fuse supplying NNI AC power to the pressurizer level HAND/AUTO station, LIC RC14, blows.

Which one of the following describes MU 32 response and the required actions as described in DB-OP-02532, Loss of NNI/ICS Power?

- a. MU 32 will fail open if in automatic. Attempt manual control of MU 32.
- b. MU 32 may NOT respond to control from the HAND/AUTO station. Use the alternate injection line.
- c. MU 32 may respond sluggishly. Attempt manual control of MU 32.
- d. MU 32 will fail to mid-position if in automatic. Use the alternate injection line.

QUESTION: 056 (1.00)

The following plant conditions exist:

- Plant is in Mode 6.
- Fuel handling operations are in progress.
- Containment Equipment Hatch is installed.
- The inner door of the personnel hatch is closed.
- A start of the Containment Purge System on containment is attempted.
- The CTMT purge exhaust fan starts. The CTMT purge supply fan fails to start.
- The CTMT purge exhaust fan fails to automatically trip.

The refueling canal level will _____ and the spent fuel pool level will _____.

- a. increase; decrease
- b. decrease; increase
- c. increase; not change
- d. not change; increase

QUESTION: 057 (1.00)

The following plant conditions exist:

- The plant is at 22% power.
- A plant startup is in progress.

The main turbine trips on low lube oil pressure.

Which of the following is the expected response for feedwater control and steam pressure control?

- | | | |
|----|----------------------------------|---|
| a. | Feedwater flow decreases. | Turbine bypass valves control pressure at 870 psig. |
| b. | Feedwater flow remains constant. | Turbine bypass valves control pressure at 995 psig. |
| c. | Feedwater flow decreases. | Turbine bypass valves control pressure at 995 psig. |
| d. | Feedwater flow remains constant. | Turbine bypass valves control pressure at 870 psig. |

QUESTION: 058 (1.00)

The following plant conditions exist:

- LP condenser pressure has increased from 2.2" to 3.7" HgA.
- HP condenser pressure has increased from 4.3" to 5.3" HgA.
- Reactor power is at 102%.
- Off-gas flow (FI-1002) is off scale high.

Based on the above information, the cause of the increasing condenser pressure is

_____.

- a. positive pressure in the flash tank
- b. high circulating water temperature
- c. PCV 1061, Vacuum Control Valve, open
- d. high total steam flow

QUESTION: 059 (1.00)

The following plant conditions exist:

- The plant is at 100% power.
- An undervoltage on 4160 VAC Bus D1 occurs.
- EDG 2 starts and energizes D1 bus.

Five minutes later, the electronic governor for EDG 2 loses power.

Which one of the following actions is required to return the operating parameters for EDG 2 to normal?

- a. Stop non-essential loads to return EDG 2 load to less than 2600 KW.
- b. Raise the generator voltage to return EDG 2 power factor to .8.
- c. Lower engine speed to return EDG 2 to 60 Hertz.
- d. Place the governor in the isochronous mode with the isochronous-droop switch.

QUESTION: 060 (1.00)

The following plant conditions exist:

- The plant is in Mode 6.
- The core is being off-loaded to the Spent Fuel Pool (SFP).
- Essential 480 VAC Bus F1 is out of service.
- Fuel handling personnel report a fuel assembly has been damaged in the SFP.
- A HIGH alarm is received on RE 8446 and RE 8447, Fuel Handling Exhaust System REs.

Which one of the following actions should be taken?

- a. Realign EVS Train 1 to the mechanical penetration rooms.
- b. Evacuate all of the Radiologically Restricted Area (RRA).
- c. Verify the Fuel Handling Ventilation System is running.
- d. Start Control Room EVS Train 1.

QUESTION: 061 (1.00)

The following plant conditions exist:

- The plant is at 100% power.
- Service Water Pump (SWP) 3 is out of service.
- A loss of off-site power occurs.
- SWP 2 fails to start.
- CCW Loop 2 temperature has risen to 130°F.
- DB-OP-02000 actions have been performed.

Which one of the following actions should be performed to start the Backup Service Water Pump (BUSWP) in place of SWP 2?

- a. Energize D2 bus from the SBODG, and start the BUSWP.
- b. Energize D2 bus from C1 bus, and start the BUSWP.
- c. Energize C2 bus from C1 bus, and start the BUSWP.
- d. Energize C2 bus from EDG 2, and start the BUSWP.

QUESTION: 062 (1.00)

Which one of the following sets of conditions would require the Emergency Instrument Air Compressor to be started and SA 6445, IA/SA Crosstie, to be opened?

1. A severe air leak on the Station Air System in accordance with the Loss of Instrument Air abnormal procedure.
 2. A loss of all Service Water Pumps in accordance with the Loss of Service Water Pumps / Systems abnormal procedure.
 3. A loss of all TPCW Pumps in accordance with the loss of TPCW Pump abnormal procedure.
 4. A loss of C2 Bus in accordance with Loss of AC Bus Power Sources abnormal procedure.
- a. 1, 2
 - b. 2, 3
 - c. 1, 4
 - d. 3, 4

QUESTION: 063 (1.00)

A local fire detector in Room 318, EDG 1 Room, fails and sends an actuation signal to the Fire Suppression System.

Which one of the following describes the response of the Room 318 Fire Suppression System?

- a. The sprinkler pipe fills with water. The sprinkler heads do not actuate.
- b. The sprinkler pipe fills with water. The sprinkler heads actuate immediately.
- c. A ten-minute time delay starts to fill the sprinkler pipe. The sprinkler heads actuate immediately.
- d. A ten-minute time delay starts to fill the sprinkler pipe. The sprinkler heads do not actuate.

QUESTION: 064 (1.00)

The following plant conditions exist:

- The plant is at 100% power.
- Instrument air pressure is 99 psig and decreasing.

Which of the following describes the correct sequence of events if instrument air pressure continues to decrease?

1. IA 2043, TURBINE BLDG BACK PRESSURE CONTROL VALVE, goes full closed.
 2. IA 2044, AUX BLDG INSTRUMENT AIR CONTROL VALVE, goes full closed.
 3. SA 2008, STATION AIR HEADER BACK PRESSURE REGULATOR, goes full closed.
 4. SA 6445, IA/SA CROSSTIE SOLENOID, goes full closed.
- a. 2,1,4,3
 - b. 2,4,3,1
 - c. 4,2,3,1
 - d. 4,3,1,2

QUESTION: 065 (1.00)

The plant is at 100% power All systems are in a normal lineup

- Annunciator alarm 4-2-D, PZR QUENCH TANK PRESS HIGH, alarms.
- RCS Pressure is 2140 psig and slowly lowering
- T_{ave} is at 582°F and steady
- Pressurizer level is 220 inches and steady
- Makeup Tank level is at 73 inches and slowly lowering

Which one of the following actions is required to mitigate this event?

- a. Go to DB-OP-02513, Pressurizer System Abnormal Operation, for a leaking PORV.
- b. Go to DB-OP-02513, Pressurizer System Abnormal Operation, for a leaking Pressurizer Spray Valve.
- c. Go to DB-OP-06004, Quench Tank, for excessive nitrogen flow to the Quench Tank.
- d. Go to DB-OP-06004, Quench Tank, for excessive Demin water flow to the Quench Tank.

QUESTION: 066 (1.00)

The following plant conditions exist:

- The plant was at 100% power.
- A complete loss of off-site power occurred approximately ten minutes ago.
- EDGs have started and loaded as required.
- The Station Blackout Diesel Generator has been started and is supplying Bus D2.

Which of the following conditions will prevent the turbine bypass valves from controlling SG pressures?

1. The MSIVs (MS 100 and MS 101) have closed.
 2. All four circ. water pumps have tripped.
 3. Instrument air pressure has been lost.
 4. ICS power has been de-energized.
-
- a. 1, 2
 - b. 1, 4
 - c. 2, 3
 - d. 3, 4

QUESTION: 067 (1.00)

The following plant conditions exist:

- The plant was at 100% power.
- Both stator cooling water pumps tripped.
- Two minutes later, the plant is at 50% power.

Which of the following annunciators will be in alarm?

1. 14-6-D, ICS IN TRACK
 2. 16-1-F, STAT-CLNT LOSS TURB TRIP
 3. 16-1-G, STAT-CLNT LOSS T-G RNBK
 4. 16-2-F, STAT-CLNT INLET FLOW LO
- a. 1, 2, 3
 - b. 1, 2, 4
 - c. 1, 3, 4
 - d. 2, 3, 4

QUESTION: 068 (1.00)

The following plant conditions exist:

- The plant has tripped due to a major steam leak.
- SG 1 is dry.
- Safety Parameter Display System (SPDS) is not functioning.

In order to determine SG tube to shell differential temperature:

- a. SG 1 outlet temperature (TI 614) can be substituted for the average SG shell temperature.
- b. SG 1 downcomer (TI SP8B) temperature can be substituted for the average SG shell temperature.
- c. Average SG shell temperature can be provided from the Plant Process Computer (PPC).
- d. Average SG shell temperature can be provided from the Data Acquisition Analysis System (DAAS).

QUESTION: 069 (1.00)

The station EVS automatically starts on a high radiation signal _____.

- a. in the fuel handling area
- b. in the radwaste area
- c. from the Containment Purge System radiation monitor when purging the mechanical penetration rooms
- d. from the Containment Purge System radiation monitor when purging containment.

QUESTION: 070 (1.00)

After the reactor has been refueled, DB-SC-03271, Control Rod Drive (CRD) Program Verification, is performed to ensure _____.

- a. CRD breakers receive trip signals from RPS
- b. CRD power cables are correctly connected
- c. CRD sequence fault circuitry operates properly
- d. CRD motors have cooling water connected

QUESTION: 071 (1.00)

The following plant conditions exist:

- The plant was at 5% power following a startup from a two-week maintenance outage.
- A malfunction of a startup feedwater control valve has led to an SFRCS actuation on low SG level.
- All systems responded normally.
- Ten minutes after the reactor trip, RCS temperature and SG pressures are slowly decreasing.

Which one of the following would be the correct mitigation strategy for this event?

- a. Manually control MFW control valves and MFW pumps since RFR was NOT armed.
- b. Manually initiate AFW flow and isolation of both SGs due to secondary steam demand exceeding primary heat production.
- c. Lower pressurizer level setpoint to minimize the makeup flow into the RCS.
- d. Manually control turbine bypass valves due to the 125 psig bias added to the steam header pressure setpoint.

QUESTION: 072 (1.00)

The following plant conditions exist:

- The plant is at 100% power.
- The Shift Manager is notified that the on-duty Field Supervisor, who is also the Fire Brigade Captain, failed the required two-year physical due to the spirometer test.

Which of the following actions can be taken to replace the Field Supervisor/Fire Brigade Captain?

- a. The Field Supervisor can take the Unit Supervisor position. The Unit Supervisor can take the Field Supervisor position and Fire Brigade Captain position, if qualified.
- b. The Field Supervisor can remain in the Field Supervisor position. The Shift Manager can become the Fire Brigade Captain, if qualified.
- c. The Field Supervisor can remain in the Field Supervisor position. A spare Equipment Operator III can become the Fire Brigade Captain, if qualified.
- d. The Field Supervisor can remain in the Field Supervisor position and the Fire Brigade Captain Position for up to two hours while waiting for a replacement to be called in.

QUESTION: 073 (1.00)

Which of the following actions can be performed by a Reactor Operator during the implementation of the Emergency Plan?

1. Off-site dose assessment
 2. Classification of the event
 3. Protective action recommendation
 4. Downgrade of the event
 5. State and counties notifications
 6. NRC notifications
-
- a. 1, 3, 5
 - b. 2, 4, 6
 - c. 2, 3, 4
 - d. 1, 5, 6

QUESTION: 074 (1.00)

The following plant conditions exist:

- The plant was initially at 100% power.
- The main turbine tripped due to high vibrations.
- The reactor failed to trip.
- Efforts to de-energize Buses E2 and F2 from the Control Room have been UNSUCCESSFUL.

Which one of the following describes the response of the Main Feedwater Control Valves (MFCVs) in ICS automatic control?

- a. MFCVs move in the closed direction due to ICS being in TRACK.
- b. MFCVs move in the open direction due to the RCS heatup.
- c. MFCVs move in the closed direction due to RAPID FEEDWATER REDUCTION.
- d. MFCVs move in the open direction due to excessive steam flow through the MS Safety Valves.

QUESTION: 075 (1.00)

The following plant conditions exist:

- The plant is in Mode 3.
- The following annunciators are received:
 - ICS/NNI 118 VAC PWR TRBL (14-2-D)
 - ICS INPUT MISMATCH (14-4-E)
 - ICS INPUT TRANSFER (14-4-F)
 - NNI X AC power light is out

Which one of the following is the proper procedure to be FIRST utilized?

- a. DB-OP-02000, RPS, SFAS, SFRCS Trip, or SG Tube Rupture
- b. DB-OP-02532, Loss of NNI/ICS Power
- c. DB-OP-02537, Loss of D1P and DAP
- d. DB-OP-02541, Loss of YAU

QUESTION: 076 (1.00)

The plant is at 100% power with all systems normal. The selected pressurizer temperature instruments fails low.

The instrument failure causes MU32 to _____ and pressurizer heaters _____.

- a. open; to de-energize
- b. open; are NOT effected
- c. close; to de-energize
- d. close; are NOT effected

QUESTION: 077 (1.00)

The following plant conditions exist:

- The reactor is at 4% power during initial power escalation from a refueling outage.
- Intermediate Range NI 3 fails HIGH.

Which one of the following OPERATOR actions will be required as a result of this occurrence?

- a. Rod withdrawal and power increase may continue since NI 4 is operable.
- b. Reactor power will need to be maintained less than 5% to comply with Tech. Specs.
- c. Both Source Range NIs will need to be de-energized since reactor power is less than 10%.
- d. RPS Channel 4 will need to be manually bypassed to remove the channel's input to other RPS channels.

QUESTION: 078 (1.00)

The plant is at 50% power and 300 EFPD.

Which one of the following would require entry into Tech. Specs.?

- a. Group 7 rods are 100% withdrawn.
- b. Group 8 rods are 90% withdrawn.
- c. Rod 5-4 is 96% withdrawn.
- d. Rod 2-2 is 92% withdrawn.

QUESTION: 079 (1.00)

The following plant conditions exist:

- The plant is at 100%.
- The running makeup pump trips.

Which one of the following should be performed immediately?

- a. Place MU19, RCP Seal Injection Flow Control, in HAND and close.
- b. Verify CCW supply to the RCPs.
- c. Place MU32, Pressurizer Level Control, in HAND and close.
- d. Verify the makeup tank is available.

QUESTION: 080 (1.00)

The following plant conditions exist:

- Emergency Diesel Generator (EDG) 1 is running for the monthly surveillance test and is paralleled with the grid at 2500 KW.
- A small break LOCA causes an SFAS actuation on RCS low pressure.
- No operator actions have been taken.

Which one of the following describes the mode of the EDG and the SFAS sequencer AFTER receipt of the SFAS signal?

- a. EDG 1 is in the droop mode and the sequencer is NOT started.
- b. EDG 1 is in the isochronous mode and the sequencer is started.
- c. EDG 1 is in the isochronous mode and the sequencer is NOT started.
- d. EDG 1 is in the droop mode and the sequencer is started.

QUESTION: 081 (1.00)

Which one of the following conditions would result in an OUT INHIBIT being generated in the rod control logic?

- a. Sequence inhibit during approach to criticality.
- b. An asymmetric fault when lifting off low level limits.
- c. A high intermediate range startup rate when at the point of adding heat.
- d. A safety rod group NOT at the out limit during control rod exercise test.

QUESTION: 082 (1.00)

The following plant conditions exist:

- The plant had been operating at 100% power.
- A small break loss of coolant accident has caused the RCS pressure to lower to 1500 psig. Containment pressure is 19.3 psia.

Which one of the following statement describes automatic actions which should have occurred for this condition?

- a. Two CACs running in fast, two CTMT spray pumps running with discharge valves throttled to 60%.
- b. Two CACs running in fast, two CTMT spray pumps running with discharge valves open
- c. Two CACs running in slow, CTMT spray pumps off with discharge valves throttled to 60%.
- d. Two CACs running in slow, CTMT spray pumps off with discharge valves open.

QUESTION: 083 (1.00)

The following plant conditions exist:

- The plant is operating at 100% power.
- The ICS is in full automatic.
- The RTD providing temperature compensation for feedwater flow is failing high.
- No SASS transfer occurs.

Which one of the following describes the response of the steam generator levels?

- a. SG levels will INCREASE because indicated feedwater flow is greater than feedwater demand.
- b. SG levels will INCREASE because indicated feedwater flow is less than feedwater demand.
- c. SG levels will DECREASE because indicated feedwater flow is greater than feedwater demand.
- d. SG levels will DECREASE because indicated feedwater flow is less than feedwater demand.

QUESTION: 084 (1.00)

The following plant conditions exist:

- RC System pressure is 2190 psig.
- The operator has taken the RC2, Pressurizer Spray Valve, control switch to OPEN and then RETURNED to auto with the spray valve at 25% open.

Which one of the following describes the expected response of the pressurizer spray valve under these conditions?

- a. The spray valve will immediately go to fully open.
- b. The spray valve will immediately open to the 40% open position.
- c. The spray valve will remain at 25% open until pressure increases to 2205 psig, at which time it will open fully.
- d. The spray valve will remain at 25% open until pressure increases to 2205 psig, at which time it will open to 40% open.

QUESTION: 085 (1.00)

The Control Rod Drive Exercise Test is scheduled for the upcoming shift.

DB-OP-06402, CRD Operating Procedure, can be verified current by _____.

- a. using the Curator controlled view library
- b. referring to the most recent Night Order
- c. referring to PR-01, Operations Procedure Maintenance
- d. using the Document On-Line Control System (DOCS)

QUESTION: 086 (1.00)

A large break loss of coolant accident has occurred.

While transferring LPI suction to the emergency sump, CS 1530, Containment Spray Pump 1 (CSP) Discharge Valve, fails in the OPEN position.

Which one of the following describes the effect this failure will have on the Containment Spray System?

- a. Potential to exceed the design flow rate of the CSP.
- b. Potential to lose net positive suction head for the CSP.
- c. Potential to overpressurize the containment spray header.
- d. Potential to cause cavitation at the containment spray header nozzles.

QUESTION: 087 (1.00)

The following plant conditions exist:

- The reactor has tripped from 100% power due to low RCS pressure.
- RCS pressure is 1500 psig.
- Hot leg temperatures are 590°F.
- Average incore temperature is 595°F.
- SG1 pressure is 790 psig and steady.
- SG2 pressure is 820 psig and steady.

Which one of the following SG levels should be maintained?

- a. 49 inches
- b. 55 inches
- c. 124 inches
- d. 130 inches

QUESTION: 088 (1.00)

The following plant conditions exist:

- The plant was at 100% power.
- All systems were in a normal lineup.
- 13.8 kv Bus A lockout has occurred five minutes ago.
- The misc. diesel generator failed to start.

What is the source of power for the YS1, 208/120 VAC Distribution Panel?

- a. The SCI-UPS battery charger through the SCI-UPS inverter.
- b. The SCI-UPS battery through the SCI-UPS inverter.
- c. 480 Volt Bus E4 through the SCI-UPS regulated transformer.
- d. 480 Volt Bus F4 through the SCI-UPS regulated transformer.

QUESTION: 089 (1.00)

The following plant conditions exist:

- The plant is at 100% power.
- A lockout of 4160 VAC Bus C1 occurs.

Which one of the following actions should be completed to maximize available battery life?

- a. Deenergize RPS Channels 1 and 3.
- b. Lockout the DC oil pumps for RCP 1-1 and RCP 2-2.
- c. Transfer Panel YAU from Inverter YVA to Panel YAR.
- d. Place Battery Charger 1PN in service as Battery Charger 1P.

QUESTION: 090 (1.00)

The following plant conditions exist:

- Plant cooldown is in progress using DH Pump 2.
- RCS temperature is 210°F.
- DH14A, DH CLR2 OUTLET, fails closed.

Which one of the following would be the PREFERRED method to re-establish cooling to the RCS?

- a. Start an RCP to provide cooling through the SGs.
- b. Place DH Pump 1 in service on the RCS.
- c. Start HPI Pump 2 and inject water from the BWST.
- d. Locally control DH14A to maintain RCS temperature.

QUESTION: 091 (1.00)

The following plant conditions exist:

- The plant is in Mode 1, operating at 82% power.
- CCW Pump 1-3 is OOS for bearing replacement.
- CCW Pump 1-1 breaker has been racked out for an inspection.
- Tech. Spec. 3.7.3.1 (CCW) has been entered.
- The following symptoms have been noted in the CTRM:
 - Annunciator (11-5-B) CCW PMP 2 FLOW LO
 - Computer Alarm (Q116) CC PMP MTR TRBL (TRIP)
 - Computer Alarm (Z120) CC PMP 2 (OFF)

Assuming that all efforts to correct this situation fail, choose the final condition that the plant will be placed in, after DB- OP-02523, CCW Malfunctions, has been implemented.

- a. Mode 1, 72% RTP
- b. Mode 3, with forced RC flow
- c. Mode 3, with natural circulation flow
- d. Mode 1, low level limits

QUESTION: 092 (1.00)

The following plant conditions exist:

- The plant is at 100% power.
- CCW Pump 1 is in service.

A loss of instrument air to SW1424, CCW Heat Exchanger 1 Temperature Control Valve, has occurred. CCW temperature will _____.

- a. rise due to SW1424 failing closed
- b. NOT change due to SW1424 failing as is
- c. lower due to SW1424 failing open
- d. control at setpoint if the auto pushbutton is depressed

QUESTION: 093 (1.00)

Which one of the following sets of conditions is required to be met if a relief for a Reactor Operator is necessary any time other than normal shift turnover? The relief:

- 1. can have either an active SRO or RO license.
 - 2. can be the Control Room SRO if another SRO assumes the Control Room SRO position.
 - 3. must have attended the shift turnover at the beginning of shift.
 - 4. must receive permission from the Shift Manager.
- a. 1, 2
 - b. 2, 3
 - c. 1, 4
 - d. 3, 4

QUESTION: 094 (1.00)

The following plant conditions exist:

- EDG 1 is tagged out for maintenance.
- Annunciator 1-6-D, C1/D1 CONTROL PWR TRBL, is locked in.

Which one of the following is the correct response if Annunciator 1-6-D reflashed?

- a. The annunciator DOES NOT have to be announced if it was previously locked in.
- b. The annunciator DOES have to be announced if the reflash was unexpected.
- c. The annunciator DOES NOT have to be announced since maintenance is being performed on EDG 1.
- d. The annunciator DOES have to be announced since it is an entry condition for Loss of AC Power Abnormal Procedure.

QUESTION: 095 (1.00)

Performance of DB-OP-03006, Miscellaneous Instrument Shift Checks, ensures Technical Specification requirement for _____ are met.

- a. RE 4598AA and BA, Station Vent Monitors
- b. RE 1998, Failed Fuel Detector
- c. Meteorological Instrumentation
- d. Shutdown Margin

QUESTION: 096 (1.00)

A fuel assembly with a control rod in the spent fuel pool location AO3 is to be moved to the core at location HO5 using the east basket.

The FH Director's Fuel Movement Sequence Sheet should show which one of the following?

	Line No.	Moved By	Fuel ID	Control Comp ID	Initial Location	Final Location
a.	1	FSHB	NJ07LX	C2TU	A03	E
	2	MFHB	NJ07LX	C2TU	E	H05
b.	1	FSHB	NJ06KT	A06Q	A03	W
	2	AFHB	NJ06KT	A06Q	W	H05
c.	1	FSHB	NJ07LX	C2TU	A03	W
	2	MFHB	NJ06KT	A06Q	W	H05
d.	1	FSHB	NJ06KT	A06Q	A03	E
	2	AFHB	NJ07LX	C2TU	E	H05

QUESTION: 097 (1.00)

Which one of the following combinations represents the regulatory exposure limits of 10 CFR 20?

- a. 5.0 R/year TEDE
15.0 R/year to the SKIN
15.0 R/year to the LENS of the eye
- b. 5.0 R/year TEDE
15.0 R/year to the LENS of the eye
50.0 R/year to EXTREMITIES
- c. 5.0 R/year to the SKIN
50.0 R/year to EXTREMITIES
50.0 R/year to the LENS of the eye
- d. 15.0 R/year TEDE
15.0 R/year to the EXTREMITIES
50.0 R/year to the SKIN

QUESTION: 098 (1.00)

A large break LOCA has occurred.

The route for closing the breakers for DH7A, DH7B, DH9A, and DH9B is required in order to _____.

- a. minimize the time spent in extremely high radiation levels
- b. verify the ECCS equipment is operating properly
- c. ensure radio contact can be maintained with the Control Room
- d. complete the route near the AVVs' remote operators in the event manual control is needed

QUESTION: 099 (1.00)

The following plant conditions exist:

- A release of the MWMT started at 0930.
- The release will be completed at 1115.
- Computer Point F201, Collection Box Out Flow to Lake, becomes inoperable at 1015.

The MWMT release can continue provided _____.

- a. at least two independent verifications of the discharge valving lineup are performed
- b. the dilution flow is manually calculated every 30 minutes
- c. at least two independent verifications of the release rate calculations are done
- d. grab samples are collected and analyzed every two hours

QUESTION: 100 (1.00)

Which one of the following is the reason interlocks are provided for the Containment Purge System?

- a. Start the supply fan when the exhaust fan trips.
- b. Prevent damage to the containment purge valves.
- c. Prevent reverse flow through the containment purge exhaust filters.
- d. Prevent simultaneous purging of the containment and penetration rooms.

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

ANSWER: 001 (1.00)
 a. & c.
 REFERENCE:
 Tech. Spec. 3.1.1.1
 DB-NE-06201
 DB-NE-06202
 New
 Memory
 000-005-AK ..(KA's)

ANSWER: 002 (1.00)
 c.
 REFERENCE:
 DB-OP-02515
 Modified
 Higher
 000-015/01 ..(KA's)

ANSWER: 003 (1.00)
 a. & c.
 REFERENCE:
 DB-OP-01003
 New
 Memory

ANSWER: 004 (1.00)
 d.
 REFERENCE:
 DB-OP-02000
 Modified
 Higher
 000-024-AK ..(KA's)

ANSWER: 005 (1.00)
 a.
 REFERENCE:
 DB-OP-02523
 New
 Memory
 000-026-AK ..(KA's)

ANSWER: 006 (1.00)
 d.
 REFERENCE:
 DB-OP-02000
 New
 Memory

ANSWER: 007 (1.00)
 d.
 REFERENCE:
 DB-OP-01003
 New
 Memory
 2.4.8 000-051-GE ..(KA's)

ANSWER: 008 (1.00)
 c.
 REFERENCE:
 DB-OP-02542
 New
 Memory
 000-057-AA ..(KA's)

ANSWER: 009 (1.00)
 a. & b.
 REFERENCE:
 DB-OP-01003
 New
 Memory
 2.4.5 ..(KA's)

ANSWER: 010 (1.00)
 d.
 REFERENCE:
 DB-OP-02000
 New
 Memory
 000-074-EK ..(KA's)

ANSWER: 011 (1.00)
 a.
 REFERENCE:
 DB-OP-02000
 New
 Memory

ANSWER: 012 (1.00)
 a.
 REFERENCE:
 DB-OP-02535
 New
 Memory
 000-076-AK ..(KA's)

ANSWER: 013 (1.00)
 c.
 REFERENCE:
 DB-OP-06334
 Bank
 Memory
 000-055-EA ..(KA's)

ANSWER: 014 (1.00)
 c.
 REFERENCE:
 DB-OP-02511
 New
 Memory
 000-062-AA ..(KA's)

ANSWER: 015 (1.00)
 c.
 REFERENCE:
 DB-OP-06401
 New
 Memory
 000-038-EA ..(KA's)

ANSWER: 016 (1.00)
 b.
 REFERENCE:
 DB-OP-02531
 New
 Memory
 000-059-AA ..(KA's)

ANSWER: 021 (1.00)
 a.
 REFERENCE:
 DB-OP-06412
 New
 Memory
 000-060-AA ..(KA's)

ANSWER: 026 (1.00)
 a.
 REFERENCE:
 DB-OP-06011
 Bank
 Memory
 000-011-EK ..(KA's)

ANSWER: 017 (1.00)
 c.
 REFERENCE:
 DB-OP-02016
 New
 Higher
 2.1.30 ..(KA's)

ANSWER: 022 (1.00)
 c.
 REFERENCE:
 DB-OP-02516
 Bank
 Higher
 000-001-AA ..(KA's)

ANSWER: 027 (1.00)
 d.
 REFERENCE:
 DB-OP-02000
 New
 Higher
 000-022-AK ..(KA's)

ANSWER: 018 (1.00)
 b.
 REFERENCE:
 DB-OP-02000
 New
 Memory
 000-054-AK ..(KA's)

ANSWER: 023 (1.00)
 d.
 REFERENCE:
 DB-OP-02000
 New
 Higher

ANSWER: 028 (1.00)
 c.
 REFERENCE:
 Tech Specs. 3/4.4.2
 New
 Higher
 000-025-AK ..(KA's)

ANSWER: 019 (1.00)
 b.
 REFERENCE:
 DB-OP-02000
 Modified
 Memory

ANSWER: 024 (1.00)
 d.
 REFERENCE:
 DB-OP-02000
 Bank
 Higher
 2.4.7 ..(KA's)

ANSWER: 029 (1.00)
 d.
 REFERENCE:
 DB-OP-02505
 New
 Higher
 000-032-AA ..(KA's)

ANSWER: 020 (1.00)
 d.
 REFERENCE:
 DB-OP-02537
 New
 Memory
 2.1.29 000-058-GE ..(KA's)

ANSWER: 025 (1.00)
 c.
 REFERENCE:
 DB-OP-02000
 Bank
 Higher
 000-009-EK ..(KA's)

ANSWER: 030 (1.00)
 a.
 REFERENCE:
 DB-OP-02000
 New
 Higher
 000-056-AK ..(KA's)

ANSWER: 031 (1.00)
 c.
 REFERENCE:
 RA-EP-02010
 New
 Memory
 2.4.39 ..(KA's)

ANSWER: 036 (1.00)
 c.
 REFERENCE:
 DB-OP-06006
 New
 Higher
 004-K6.07 ..(KA's)

ANSWER: 041 (1.00)
 c.
 REFERENCE:
 DB-OP-02000
 New
 Higher
 059-K4.13 ..(KA's)

ANSWER: 032 (1.00)
 a.
 REFERENCE:
 RA-EP-02880
 New
 Memory

ANSWER: 037 (1.00)
 c.
 REFERENCE:
 DB-OP-03006
 Bank
 Higher
 015-K6.02 ..(KA's)

ANSWER: 042 (1.00)
 b.
 REFERENCE:
 DB-OP-02532
 New
 Memory
 059-A1.07 ..(KA's)

ANSWER: 033 (1.00)
 d.
 REFERENCE:
 Tech Spec 3.2.5
 New
 Memory
 001-K5.56 ..(KA's)

ANSWER: 038 (1.00)
 d.
 REFERENCE:
 DB-OP-06402
 New
 Memory
 022-K4.04 ..(KA's)

ANSWER: 043 (1.00)
 a.
 REFERENCE:
 DB-OP-02000
 New
 Memory
 061-K2.02 ..(KA's)

ANSWER: 034 (1.00)
 d.
 REFERENCE:
 DB-OP-06902
 New
 Memory
 001-A4.15 ..(KA's)

ANSWER: 039 (1.00)
 b.
 REFERENCE:
 DB-OP-02000
 New
 Higher
 003-A2.05 ..(KA's)

ANSWER: 044 (1.00)
 b.
 REFERENCE:
 DB-OP-03011
 New
 Memory
 068-A2.04 ..(KA's)

ANSWER: 035 (1.00)
 a.
 REFERENCE:
 DB-OP-02515 DB-OP-02523
 New
 Memory
 003-K4.11 ..(KA's)

ANSWER: 040 (1.00)
 a.
 REFERENCE:
 DB-OP-06221
 New
 Memory
 056-A2.04 ..(KA's)

ANSWER: 045 (1.00)
 d.
 REFERENCE:
 HS-EP-02240
 New
 Memory
 071-K1.05 ..(KA's)

ANSWER: 046 (1.00)
 a.
 REFERENCE:
 DB-OP-02009
 Bank
 Memory
 072-K1.04 ..(KA's)

ANSWER: 051 (1.00)
 b.
 REFERENCE:
 DB-OP-06903
 New
 Higher
 002-A4.03 ..(KA's)

ANSWER: 056 (1.00)
 a.
 REFERENCE:
 DB-OP-06503
 Bank
 Higher
 029-A1.03 ..(KA's)

ANSWER: 047 (1.00)
 a.
 REFERENCE:
 DB-OP-06900
 New
 Higher
 Memory
 013-A4.02 ..(KA's)

ANSWER: 052 (1.00)
 b.
 REFERENCE:
 DB-OP-02000
 Bank
 Higher
 006-K5.01 ..(KA's)

ANSWER: 057 (1.00)
 d.
 REFERENCE:
 DB-OP-02500
 New
 Higher
 039-K1.05 ..(KA's)

ANSWER: 048 (1.00)
 c.
 REFERENCE:
 OS-010 OS-012A
 New
 Higher
 Memory
 056-K1.03 ..(KA's)

ANSWER: 053 (1.00)
 d.
 REFERENCE:
 DB-OP-02541
 New
 Higher
 011-A4.04 ..(KA's)

ANSWER: 058 (1.00)
 c.
 REFERENCE:
 DB-OP-02518
 New
 Higher
 055-K3.01 ..(KA's)

ANSWER: 049 (1.00)
 a.
 REFERENCE:
 DB-OP-02000
 New
 Higher
 017-K3.01 ..(KA's)

ANSWER: 054 (1.00)
 a.
 REFERENCE:
 DB-OP-06403
 New
 Higher
 012-A1.01 ..(KA's)

ANSWER: 059 (1.00)
 c.
 REFERENCE:
 DB-OP-06316
 New
 Higher
 064-K3.03 ..(KA's)

ANSWER: 050 (1.00)
 b.
 REFERENCE:
 DB-OP-02527
 New
 Higher
 033-K1.02 ..(KA's)

ANSWER: 055 (1.00)
 c.
 REFERENCE:
 DB-OP-02532
 Bank
 Memory
 016-A2.04 ..(KA's)

ANSWER: 060 (1.00)
 b.
 REFERENCE:
 DB-OP-02530
 New
 Higher
 073-K5.02 ..(KA's)

ANSWER: 061 (1.00)
 c.
 REFERENCE:
 DB-OP-02521 DB-OP-02511
 New
 Higher
 075-K2.03 ..(KA's)

ANSWER: 066 (1.00)
 a.
 REFERENCE:
 DB-OP-06201
 Bank
 Higher
 041-A4.08 ..(KA's)

ANSWER: 071 (1.00)
 b.
 REFERENCE:
 DB-OP-02000
 New
 Higher
 2.4.09 ..(KA's)

ANSWER: 062 (1.00)
 b.
 REFERENCE:
 DB-OP-02511 DB-OP-02514
 New
 Higher
 079-A2.01 ..(KA's)

ANSWER: 067 (1.00)
 c.
 REFERENCE:
 DB-OP-02016
 New
 Higher
 045-2.4.50 ..(KA's)

ANSWER: 072 (1.00)
 c.
 REFERENCE:
 NT-OT-07007
 New
 Higher
 2.4.26 ..(KA's)

ANSWER: 063 (1.00)
 a.
 REFERENCE:
 OS-47B
 New
 Higher
 086-K6.04 ..(KA's)

ANSWER: 068 (1.00)
 c.
 REFERENCE:
 DB-OP-06903
 New
 Memory
 2.1.19 ..(KA's)

ANSWER: 073 (1.00)
 d.
 REFERENCE:
 RA-OP-01500
 New
 Memory
 2.4.39 ..(KA's)

ANSWER: 064 (1.00)
 d.
 REFERENCE:
 OS-19
 Bank
 Memory
 078-K4.02 ..(KA's)

ANSWER: 069 (1.00)
 a.
 REFERENCE:
 DB-OP-06504
 New
 Memory
 2.1.27 ..(KA's)

ANSWER: 074 (1.00)
 a.
 REFERENCE:
 ICS Logic Drawings
 New
 Higher
 000-029-EA ..(KA's)

ANSWER: 065 (1.00)
 a
 REFERENCE:
 DB-OP-02513
 New
 Higher
 007-A2.05 ..(KA's)

ANSWER: 070 (1.00)
 b.
 REFERENCE:
 DB-SC-03271
 New
 Memory
 2.2.33 ..(KA's)

ANSWER: 075 (1.00)
 b.
 REFERENCE:
 DB-OP-02532
 New
 Higher

ANSWER: 076 (1.00)
 b.
 REFERENCE:
 DB-OP-02513
 New
 Higher
 000-027-AK ..(KA's)

ANSWER: 077 (1.00)
 b.
 REFERENCE:
 DB-OP-02505
 Modified
 Memory
 000-033-AK ..(KA's)

ANSWER: 078 (1.00)
 d.
 REFERENCE:
 Tech Spec 3.1.3.5
 New
 Higher
 001 2.1.33 ..(KA's)

ANSWER: 079 (1.00)
 b.
 REFERENCE:
 DB-OP-02512
 New
 Memory
 003-A4.08 ..(KA's)

ANSWER: 080 (1.00)
 c.
 REFERENCE:
 DB-OP-06316
 Modified
 Higher
 013-K1.12 ..(KA's)

ANSWER: 081 (1.00)
 c.
 REFERENCE:
 DB-OP-06402
 Bank
 Higher
 015-A3.02 ..(KA's)

ANSWER: 082 (1.00)
 d.
 REFERENCE:
 DB-OP-02000
 Bank
 Higher
 022-A3.01 ..(KA's)

ANSWER: 083 (1.00)
 b.
 REFERENCE:
 DB-OP-06407
 Bank
 Higher
 059-K3.03 ..(KA's)

ANSWER: 084 (1.00)
 d.
 REFERENCE:
 OS-01A
 Bank
 Higher
 010-K4.03 ..(KA's)

ANSWER: 085 (1.00)
 a.
 REFERENCE:
 NG-NA-00107
 New
 Memory
 014 2.1.21 ..(KA's)

ANSWER: 086 (1.00)
 b.
 REFERENCE:
 DB-OP-02000
 New
 Higher
 026-K3.02 ..(KA's)

ANSWER: 087 (1.00)
 c.
 REFERENCE:
 DB-OP-02000
 New
 Higher
 035-A3.01 ..(KA's)

ANSWER: 088 (1.00)
 b.
 REFERENCE:
 DB-OP-06333
 Bank
 Higher
 062-A3.04 ..(KA's)

ANSWER: 089 (1.00)
 c.
 REFERENCE:
 DB-OP-02521
 New
 Higher
 063-K4.02 ..(KA's)

ANSWER: 090 (1.00)
 d.
 REFERENCE:
 DB-OP-02527
 New
 Higher
 005-K6.03 ..(KA's)

ANSWER: 091 (1.00)

c.

REFERENCE:

DB-OP-02523

Bank

Higher

008-K3.03 ..(KA's)

ANSWER: 096 (1.00)

a.

REFERENCE:

DB-NE-06101

Modified

Higher

2.2.27 ..(KA's)

ANSWER: 092 (1.00)

c.

REFERENCE:

DB-OP-02528

New

Higher

076-K1.01 ..(KA's)

ANSWER: 097 (1.00)

b.

REFERENCE:

DB-HP-01201

Bank

Memory

2.3.1 ..(KA's)

ANSWER: 093 (1.00)

a.

REFERENCE:

DB-OP-00100

New

Memory

2.1.3 ..(KA's)

ANSWER: 098 (1.00)

a.

REFERENCE:

DB-OP-02000

New

Memory

2.3.10 ..(KA's)

ANSWER: 094 (1.00)

b.

REFERENCE:

DB-OP-00000

New

Memory

2.1.17 ..(KA's)

ANSWER: 099 (1.00)

b.

REFERENCE:

DB-OP-03011

New

Memory

2.3.11 ..(KA's)

ANSWER: 095 (1.00)

d.

REFERENCE:

DB-OP-030006

New

Memory

2.2.12 ..(KA's)

ANSWER: 100 (1.00)

d.

REFERENCE:

DB-OP-06503

Bank

Memory

103-A3.01 ..(KA's)

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

ANSWER KEY
MULTIPLE CHOICE

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

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