

U. S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket Nos. 50-277; 50-278
License Nos. DPR-44; DPR-56

Report Nos. 96-10 (OL)

Licensee: PECO Energy Company
P. O. Box 195
Wayne, PA 19087-0195

Facility: Peach Bottom Atomic Power Station, Units 2 and 3

Dates: September 13 - 20, 1996

Chief Examiner: D. Florek, Sr. Operations Engineer, Region 1

Examiners: C. Sisco, Operations Engineer, Region 1
B. Ferguson, NRC Consultant Examiner

Approved by: Glenn W. Meyer, Chief
Operator Licensing and Human Performance Branch
Division of Reactor Safety

EXECUTIVE SUMMARY

Peach Bottom Atomic Power Station, Units 2 and 3
Inspection Report 50-277/96-10 (OL) and 50-278/96-10 (OL)

Operations

The applicants were well prepared for the operating test. As a result, 11 of 12 applicants passed the examination. Eleven applicants were subsequently issued licenses. One SRO applicant failed the operating portion of the examination. The examiners noted areas of consistently good performance in the simulator, including crew teamwork, crew communications, and SRO prioritization techniques, but also noted some minor areas of weak performance on the written examination and walkthrough (Section O5.1).

I. Operations

O5 Operator Training and Qualifications

O5.1 Operator Initial Examinations

a. Scope

The examiners administered initial examinations to six RO and six SRO applicants in accordance with NUREG-1021, "Examiner Standards," Revision 7.

b. Observations and Findings

The results of the initial examinations are summarized below:

	SRO	RO	Pass/Fail
Written	6/0	6/0	12/0
Operating	4/1 *	6/0	10/1
Overall	5/1	6/0	11/1

* One SRO applicant was granted a waiver of the operating test.

The PECO Energy staff reviewed the written examination and assisted in the validation of the operating examination during the week of September 3, 1996. The PECO Energy staff provided high quality comments on the examination that significantly improved the examination. The PECO Energy staff who were involved with the examination review signed security agreements to ensure that the initial examinations were not compromised.

At the exit meeting, the PECO Energy training management representative indicated that the answer key to common SRO-49 and RO-60 question had an incorrect answer. The chief examiner agreed and corrected the answer key.

Based on the grading of the written examination, the following questions were missed by more than half of the applicants, indicating a weakness in understanding on the subject.

SRO-8/RO-9	Knowledge of the restrictions on use of continuous rod withdrawal.
RO-11	Ability to predict the final reactor pressure during a heatup controlled at the administrative limit.
SRO-39/RO-47	Ability to predict the control room ventilation system response to a set of conditions.
SRO-41/RO-52	Ability to predict the E12 bus response to an undervoltage condition.

SRO-98/R)-98	Knowledge of the use of check off lists.
SRO-65	Ability to determine conditions that would require entry into procedure T-104, "Radiation Release."
SRO-87	Knowledge of the allowable storage locations for rejected new fuel.

During the walkthrough portion of the operating test, several applicants performed poorly in each of the following areas:

Restarting a recirculation pump at power.

Determining the technical specification operability requirements for the RHR system during refueling.

Determining the correct actions to respond to a high skimmer surge tank level.

Implementing the SE-11 procedure consistent with the SE procedure structure.

Bypassing the APRMs when the APRM cabinets were opened.

Reporting degraded equipment observations to the control room when identified during the plant walkthrough.

During the dynamic simulator test, the following items were significant and consistent positive observations.

Teamwork within the crews was very good.

Communication within the crews was very good. Crew briefings were concise, timely, and appropriate.

SRO prioritization techniques were effective such that all crew members understood the SRO-directed important tasks.

During performance of the operating test, the examiners noted the following items for further PECO consideration. Each item resulted in some applicant difficulty during the examination:

Procedure ERP-130 was confusing as to whether the shift manager was personally required to notify the PEMA and MEMA of a site evacuation or whether the PECO communicator could carry out this notification under the direction of the shift manager.

The recirculation flow unit comparators were not labeled on the inside of the cabinet. (The labeling was on the outside of the cabinet.) This caused one applicant to incorrectly diagnose an instrument malfunction.

Review of UFSAR Commitments

A recent discovery of a licensee operating their facility in a manner contrary to the updated final safety analysis report (UFSAR) description highlighted the need for a special focused review that compares plant practices, procedures and/or parameters to the UFSAR descriptions. While performing the examination activities discussed in this report, the examiners reviewed portions of the UFSAR that related to the selected examination activities, questions or topic areas. The particular sections reviewed were Section 7.5, Section 7.7 and Section 13.2. The specific areas reviewed were consistent with the UFSAR.

c. Conclusions

The applicants were well prepared for the examination, and as a result, 11 of 12 were subsequently issued licenses. One SRO applicant failed the operating portion of the examination.

V. Management Meetings

X1 Exit Meeting Summary

At the conclusion of the examination, the examiners discussed their observations of the examination process with members of PECO Energy management. PECO Energy management acknowledged the examiner observations. The PECO Energy personnel present at the exit included the following:

R. Artus, Instructor
P. Cromwell, Nuclear QA
L. MacEntee, Operations Training Coordinator
J. McElwain, Acting Plant Manager
D. McClellan, Peach Bottom, Manager Operations Training
T. Mitchell, Vice-President Peach Bottom
R. Smith, Regulatory

Attachments:

1. SRO Examination and Answer Key
2. RO Examination and Answer Key
3. Simulator Fidelity Report

ATTACHMENT 1

SRO EXAMINATION AND ANSWER KEY

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

APPLICANT'S NAME: _____

FACILITY: _____ Peach Bottom 2 & 3

REACTOR TYPE: _____ BWR-GE4

DATE ADMINISTERED: _____ September 13, 1996

INSTRUCTIONS TO ALLPICANT:

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 80.00%. Examination papers will be picked up four (4) hours after the examination starts.

TEST VALUE	APPLICANT'S SCORE	FINAL GRADE
100.00		

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

Applicant's Signature

ANSWER SHEET

Multiple Choice (Circle or X your choice)

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

MULTIPLE CHOICE					
001	a	b	c	d	___
002	a	b	c	d	___
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ANSWER SHEET

Multiple Choice (Circle or X your choice)

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

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ANSWER SHEET

Multiple Choice (Circle or X your choice)

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

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

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

NRC RULES AND GUIDELINES FOR LICENSE EXAMINATIONS

During the administration of this examination the following rules apply:

1. Cheating on the examination means an automatic denial of your application and could result in more severe penalties.
2. After the examination has been completed, you must sign the statement on the cover sheet indicating that the work is your own and you have not received or given assistance in completing the examination. This must be done after you complete the examination.
3. Restroom trips are to be limited and only one applicant at a time may leave. You must avoid all contacts with anyone outside the examination room to avoid even the appearance or possibility of cheating.
4. Use black ink or dark pencil ONLY to facilitate legible reproductions.
5. Print your name in the blank provided in the upper right-hand corner of the examination cover sheet and each answer sheet.
6. Mark your answers on the answer sheet provided. USE ONLY THE PAPER PROVIDED AND DO NOT WRITE ON THE BACK SIDE OF THE PAGE.
7. The point value for each question is indicated in parentheses after the question.
8. If the intent of a question is unclear, ask questions of the examiner only.
9. When turning in your examination, assemble the completed examination with examination questions, examination aids and answer sheets. In addition, turn in all scrap paper.
10. 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.
11. To pass the examination, you must achieve a grade of 80% or greater.
12. There is a time limit of four (4) hours for completion of the examination.
13. 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.

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QUESTION: 001 (1.00)

WHICH ONE (1) of the following explains proper usage of the SRM shorting links?

The SRM shorting links...

- a. are installed during refueling outages to bypass the SRM downscale rod block.
- b. are installed during refueling outages to allow the SRM high-high scram to be functional.
- c. are removed during shutdown margin testing to bypass the non-coincidence logic of the SRM trip system.
- d. are removed whenever it is necessary to place the neutron monitoring system in the non-coincidence mode of operation.

QUESTION: 002 (1.00)

WHICH ONE (1) of the following will result in an IRM HI-HI half scram signal being generated?

- a. Mode switch is in STARTUP; IRM A is indicating 100/125 of full scale on range 2.
- b. Mode switch is in RUN; IRM B is indicating 108/125 of full scale on range 8; APRM B is failed downscale.
- c. Mode switch is in RUN; IRM G is indicating 120/125 of full scale on range 10; APRM E is failed downscale.
- d. Mode switch is in STARTUP; IRM H is indicating 108/125 of full scale on range 6.

QUESTION: 003 (1.00)

A control rod scram accumulator nitrogen pressure indicates 0 psig. WHICH ONE (1) of the following statements explains how the scram response of the control rod will be affected?

- a. The control rod will be hydraulically locked in place since the accumulator is valved out.
- b. The control rod scram time will increase as reactor pressure increases.
- c. The control rod will not fully scram if the reactor pressure is less than 400 psig.
- d. The control rod will fully scram regardless of reactor pressure.

QUESTION: 004 (1.00)

A Unit 2 reactor startup is in progress. Reactor power is approximately 1%. The following conditions exist on the RWCU system which has just been placed in service:

- | | |
|----------------------------|---------------|
| - RWCU Pump 2A | 200 gpm flow |
| - RWCU Pump 2B | Secured |
| - Non-Regen HX outlet temp | 120 degrees F |
| - RWCU F/D 2A flow | 200 gpm |

WHICH ONE (1) of the following actions is required to be taken?

- a. Increase the flow from the 2A RWCU pump.
- b. Place the second RWCU pump in service.
- c. Increase RBCCW flow to lower the non-regen HX outlet temperature.
- d. Reduce the flow through RWCU F/D 2A.

QUESTION: 005 (1.00)

Control rod withdrawal is about to occur on Unit 2 to bring the reactor critical. Reactor vessel metal temperature is 200 degrees F. WHICH ONE (1) of the following is the maximum allowable reactor vessel pressure under these conditions?

- a. 40 psig
- b. 100 psig
- c. 240 psig
- d. 520 psig

QUESTION: 006 (1.00)

Unit 2 power is 38% and preparations are underway to startup the 2B reactor recirculation pump. The 2A reactor recirc pump is running at 40% rated speed. Plant conditions are as follows:

- | | |
|-----------------------------------|---------------|
| - Reactor vessel dome pressure | 980 psig |
| - Loop 'A' temperature | 530 degrees F |
| - Loop 'B' temperature | 500 degrees F |
| - Bottom head coolant temperature | 390 degrees F |

WHICH ONE (1) of the following describes the limitations, if any, imposed on starting the 'B' reactor recirc pump under the given conditions?

- a. The pump may be started immediately.
- b. The pump should not be started because the bottom head coolant temperature is too low.
- c. The pump should not be started because the loop differential temperature is too high.
- d. The pump should not be started because the 2A reactor recirc pump is running too fast.

QUESTION: 007 (1.00)

A reactor startup is in progress. The Mode Switch is in STARTUP and Group 1 rods are being withdrawn. Control rod 50-31 was being withdrawn when it lost position indication. After stopping rod motion it was determined that the rod was at position 12 and a substitute position was entered into the Rod Worth Minimizer (RWM).

WHICH ONE (1) of the following explains how RWM control is affected by these conditions?

- a. The RWM will function normally and will initiate a rod block if control rod 50-31 is mispositioned.
- b. The RWM will not enforce any rod blocks associated with the movement of control rod 50-31.
- c. The RWM will prevent control rod 50-31 from being moved in any direction.
- d. The RWM will enforce a rod out block only on control rod 50-31.

QUESTION: 008 (1.00)

A reactor startup is in progress on Unit 2. The Rod Worth Minimizer has failed and is procedurally bypassed. The reactor startup is continuing. WHICH ONE (1) of the following describes the restrictions placed on the use of continuous notch override when withdrawing controls rods under these conditions?

Continuous notch override ...

- a. cannot be used under these conditions.
- b. can only be used if the rod target position is position 48.
- c. can be used to move any control rod as long as a second licensed operator is present to verify rod movement.
- d. can only be used if a "black and white" rod pattern has been achieved.

QUESTION: 009 (1.00)

The shell warming mode of the main turbine has just been selected. WHICH ONE (1) of the following describes the valve alignment during this operation?

- a. The turbine control valves are open fully; the intercept valves are closed; the intermediate stop valves are closed.
- b. The turbine control valves are partially open; the intercept valves are open fully; the intermediate stop valves are closed.
- c. One turbine control valve is open fully; the intercept valves are closed; the intermediate stop valves are fully open.
- d. The turbine control valves are closed; the intercept valves are partially open; the intermediate stop valves are partially open.

QUESTION: 010 (1.00)

During shell warming, turbine first stage pressure increases to 140 psig. WHICH ONE (1) of the following is the expected response to this condition?

- a. A Group I isolation will occur.
- b. A reactor scram will be initiated.
- c. The main turbine will overspeed.
- d. Main condenser vacuum will start to decrease.

QUESTION: 011 (1.00)

Reactor power is indicating approximately 9% on the APRMs with preparation being made to roll the main turbine. WHICH ONE (1) of the following is used to verify that the APRMs are indicating properly?

- a. 3D MONICORE P-1 printout.
- b. Turbine bypass valve position.
- c. Main steam line flow indication.
- d. IRM indication.

QUESTION: 012 (1.00)

Preparations are being made to place the Unit mode switch to "RUN". Plant conditions are as follows:

- | | |
|----------------------------|-------------------------------|
| - IRM C | Failed upscale (NOT Bypassed) |
| - Highest reading APRM (D) | 13% |
| - Lowest reading APRM (C) | 5% |
| - PAM pressure | 860 psig |
| - Main condenser vacuum | 22 inches HG |

WHICH ONE (1) of the following would occur if the mode switch was placed in "RUN" under these conditions?

- a. Half scram.
- b. Full reactor scram only.
- c. Group I isolation only.
- d. Full reactor scram AND Group I isolation.

QUESTION: 013 (1.00)

WHICH ONE (1) of the following explains why the IRMs should be placed on a range which will maintain them onscale when the reactor is operating at full power?

- a. To extend the operational life of the IRM detectors.
- b. To support the operability of the Rod Block Monitor system.
- c. To support the operability of the APRM downscale RPS function.
- d. To prevent inadvertent IRM HI-HI trip signals from being generated.

QUESTION: 014 (1.00)

Unit 2 is operating at the 95.2% load line when a recirc pump ran back to minimum speed. WHICH ONE (1) of the following indications represents the presence of core thermal hydraulic instability?

- a. A difference of 5% indicated power between the highest and lowest reading APRM.
- b. LPRM upscale alarms coming in.
- c. APRM power oscillation of 3% to 4% peak-to-peak.
- d. LPRM indications are oscillating regularly every 1 to 2 seconds.

QUESTION: 015 (1.00)

Unit 2 is operating at 100% power. Reactor Building Ventilation has been placed on the SBT system due to a high radiation condition. WHICH ONE (1) of the following is the possible consequences of continued operation in this lineup?

- a. A Group I isolation may occur from high MSL tunnel temperature.
- b. Group IV isolation may occur from high HPCI room temperature.
- c. Group II isolation may occur from high RWCU area temperatures
- d. Group V isolation may occur from high RCIC room temperatures.

QUESTION: 016 (1.00)

A Unit 2 shutdown is in progress. Power has just been lowered to below the RWM Low Power Set Point (LPSP). A review of control rod positions reveals that control rods are NOT aligned in accordance with the RWM program.

WHICH ONE (1) of the following describes how the reactor shutdown should be continued?

- a. Transfer house loads then manually scram the reactor.
- b. Station a second licensed operator to verify control rod movement and continue control rod insertion.
- c. Reprogram the RWM to match the existing control rod pattern then continue the reactor shutdown.
- d. Increase reactor power above the LPSP and realign the control rods in accordance with the RWM program then continue the reactor shutdown.

QUESTION: 017 (1.00)

WHICH ONE (1) of the following describes when it is allowable to purge the primary containment using the Reactor Building Ventilation Exhaust System?

- a. When one train of the Standby Gas Treatment System is inoperable.
- b. When reactor power is less than or equal to 15% rated thermal power.
- c. When the reactor is in a cold shutdown condition.
- d. When the primary containment is required to be operable.

QUESTION: 018 (1.00)

Unit 2 has just shutdown the 2A recirc pump. Reactor power is 40% and core flow is 45%. WHICH ONE (1) of the following actions should be performed?

- a. Adjust the MCPR Safety Limit to 1.06.
- b. Reduce the APRM Flow Biased High Scram setpoint.
- c. Increase the APLHGR limit for single loop operations.
- d. Reduce core flow to less than or equal to 39%.

QUESTION: 019 (1.00)

Given the following conditions on Unit 3:

- An ATWS has occurred.
- Power is lost to 3R4-R-B.
- The SRO has directed the URO to initiate SBLC.
- The URO positions the keylock switch to the "Pump B Run" position.

WHICH ONE (1) of the following describes the status of the SBLC system under these conditions?

- a. 3A pump is OFF; 3B pump is ON; BOTH explosive valves fired; RWCU is isolated.
- b. 3A pump is ON; 3B pump is OFF; ONE explosive valve fired; RWCU is isolated.
- c. 3A pump is ON; 3B pump is ON; BOTH explosive valves fired; RWCU is isolated.
- d. 3A pump is OFF; 3B pump is OFF; NEITHER explosive valve fired; RWCU is not isolated.

QUESTION: 020 (1.00)

The HPCI system was in a normal standby alignment when a valid automatic initiation signal was received. Shortly after HPCI initiation the PRO notices that the HPCI system has realigned to the alternate suction source. WHICH ONE (1) of the following conditions could have caused the HPCI system to realign?

- a. Low torus level.
- b. Low booster pump suction pressure.
- c. Low CST level.
- d. A group IV isolation signal.

QUESTION: 021 (1.00)

Technical Specifications requires that a minimum spent fuel pool level be maintained while handling fuel assemblies in the pool area. WHICH ONE (1) of the following describes the BASIS for this requirement?

- a. To provide adequate cooling to the spent fuel assemblies during normal operations.
- b. To ensure the refuel area does not become a high radiation area during fuel movement.
- c. To ensure most of the fission products released from a ruptured irradiated fuel assembly are removed.
- d. To ensure that the spent fuel bundles remain covered with water for at least eight hours following a loss of all AC power.

QUESTION: 022 (1.00)

WHICH ONE (1) of the following conditions requires the permission of the NRC to recommence reactor power operations?

- a. MCPR is calculated to be 1.1 during reactor power operations.
- b. A reactivity excursion causes reactor power to reach 30% when core flow is less than 10% rated.
- c. An ECCS system failed to automatically start when required.
- d. Reactor water level during cold shutdown drops to -160 inches.

QUESTION: 023 (1.00)

WHICH ONE (1) of the following supplies power to the Backup Scram Valves?

- a. 24 VDC bus power
- b. 125 VDC bus power
- c. RPS Bus A and B
- d. 120 VAC Instrument Bus

QUESTION: 024 (1.00)

The E2 Diesel Generator tripped following a start on high drywell pressure. E2 Diesel Generator operating conditions just prior to the trip were as follows:

- Lube oil pressure: 21 psig
- Engine cooling water outlet temperature: 210 degrees F
- Jacket coolant supply pressure 19 psig
- Generator load current: 550 amps
- Generator voltage: 4250 volts

WHICH ONE (1) of the following signals caused the diesel generator to trip?

- a. Low lube oil pressure.
- b. Low cooling water pressure.
- c. Generator differential overcurrent.
- d. Engine cooling water high temperature.

QUESTION: 025 (1.00)

Unit 2 is operating at approximately 35% reactor power when the following annunciator alarm is received:

- MOIST SEP HI LEVEL TRIP

Assuming the alarm is valid, the main turbine will trip...

- a. immediately and the reactor will scram.
- b. immediately but the reactor will remain on line.
- c. after a 30 second time delay and the reactor will scram.
- d. after a 30 second time delay; the reactor will remain on line.

QUESTION: 026 (1.00)

While operating at 100% power a valid high steam line flow was sensed in the "A" main steam line only. WHICH ONE (1) of the following is the expected MSIV response?

- a. All MSIVs will close.
- b. Only the MSIVs in main steam line 'A' will close.
- c. Only the inboard MSIV in main steam line 'A' will close.
- d. Only the inboard MSIVs in all four main steam lines will close.

QUESTION: 027 (1.00)

A loss of reactor water level control has resulted in a reactor scram on low water level. Reactor water level dropped to - 5 inches before control was reestablished. WHICH ONE (1) of the following isolation valves should have closed?

- a. Main steam line drain valves.
- b. Recirc sample valves.
- c. Drywell equipment drain valves.
- d. RHR sample valves.

QUESTION: 028 (1.00)

The URO has noticed a sudden rise in the A loop drive flow. WHICH ONE (1) of the following indications would be consistent with a jet pump failure?

- a. A rise in core thermal power.
- b. A drop in core plate differential pressure.
- c. A slight rise in recirc pump speed.
- d. An increase in indicated dp on the affected jet pump.

QUESTION: 029 (1.00)

Unit 3 is operating at approximately 80% power when the 'A' Narrow Range reactor water level instrument (which was auto selected for control) fails downscale. Other reactor water level instruments indicate as follows:

- 'B' Narrow Range + 22 inches
- 'C' Narrow Range + 24 inches
- 'A' Wide Range + 15 inches
- 'B' Wide Range + 16 inches

WHICH ONE (1) of the following describes how the Feedwater Control System will control reactor water level under these conditions?

The Feedwater Control System will ...

- a. use a default value of + 23 inches to control reactor water level.
- b. shift to the 'B' Narrow Range instrument to control reactor water level.
- c. shift to the 'C' Narrow Range instrument to control reactor water level.
- d. use the average of the wide range instrument to control reactor water level.

QUESTION: 030 (1.00)

WHICH ONE (1) of the following describes a condition that will result in the greatest difference between all of the wide range reactor water level instruments and actual reactor water level?

- a. When core flow is less than 10%.
- b. During single loop operations.
- c. When operating at 100% recirc flow.
- d. When the reactor is in Mode 4.

QUESTION: 031 (1.00)

Unit 2 is at 100% power with both recirc loops in service. During the performance of SI-0-02F-550-2, "Jet Pump Operability", it was discovered that jet pumps 1, 2, and 6 were inoperable. WHICH ONE (1) of the following actions is required?

- a. Immediately remove recirc loop A from service.
- b. Immediately remove recirc loop B from service.
- c. Place the unit in Hot Shutdown in 12 hours.
- d. Reduce reactor power to less than 25% rated.

QUESTION: 032 (1.00)

Unit 2 is operating at 80% power when the following annunciator alarm comes in:

- A RECIRC SPEED CONTROL SIGNAL FAIL

Investigation reveals that the recirc pump controller output has failed to zero. WHICH ONE (1) of the following describes how the affected recirc pump should respond to this failure?

- a. The associated scoop tube should lock up and the recirc pump speed should remain the same.
- b. The affected recirc pump should run back to 45% speed.
- c. The affected recirc drive motor breaker should trip open.
- d. The affected recirc pump should run back to minimum speed.

QUESTION: 033 (1.00)

Drywell cooling has been maximized per T-223, "Drywell Cooler Fan Bypass" due to high drywell pressure. Shortly after starting the fans in fast speed a LOCA causes reactor water level to drop below -160 inches. WHICH ONE (1) of the following describes how operation of the drywell cooling fans is affected by this condition?

- a. The fans will automatically shift to slow speed.
- b. The fans will remain running in fast speed.
- c. The fans will stop and cannot be restarted.
- d. The fans will stop and but can be restarted immediately by using the trip bypass switch.

QUESTION: 034 (1.00)

While operating at 50% power the following annunciator alarms:

- SAFETY RELIEF VALVE OPEN

WHICH ONE (1) of the following indications confirms that an SRV is open?

- a. Turbine control valves open slightly.
- b. Steam flow - Feed flow mismatch.
- c. Turbine bypass valves opening.
- d. An increase in main turbine exhaust pressure.

QUESTION: 035 (1.00)

WHICH ONE (1) of the following describes the consequences of a loss of 125 VDC panel 20D2111 on the ADS System?

- a. Channel 'A' of ADS is deenergized; ADS can initiate through Channel 'B'.
- b. Both channels of ADS are deenergized; ADS will not operate under any condition.
- c. Automatic initiation of ADS is defeated; manual ADS initiation is still possible.
- d. Channel 'A' of ADS will automatically shift to its alternate power supply; ADS will function as required.

QUESTION: 036 (1.00)

At 100% power, RCIC is operating in the CST to CST mode with its flow controller in "AUTO". RCIC Turbine speed is 2200 RPM. WHICH ONE (1) of the following will result in raising RCIC Turbine speed?

- a. Opening MO-2-13-27, "RCIC Minimum Flow Valve".
- b. Throttling open MO-2-13-030, "RCIC Full Flow Test Valve".
- c. Placing the RCIC Flow Controller in "MANUAL" then throttling open MO-2-13-030, "RCIC Full Flow Test Valve".
- d. Throttling open MO-2-13-021, "RCIC Feedline Injection".

QUESTION: 037 (1.00)

The Standby Gas Treatment System (SBGT) has automatically started on Unit 3. System operating parameters are as follows:

- SBGT system total flow 5,000 scfm
- Secondary containment dp - 0.1 inches WG

WHICH ONE (1) of the following explains how the SBGT System is operating?

- a. The system is operating normally.
- b. SBGT system total flow is too low.
- c. SBGT system total flow is too high.
- d. Secondary containment dp is not adequate.

QUESTION: 038 (1.00)

Vacuum is lowering on Unit 3. WHICH ONE (1) of the following is an indication of air in-leakage into the main condenser?

- a. A decrease in "Off-Gas Flow" indication.
- b. A decrease in air ejector after condenser outlet pressure.
- c. An increase in Guard Bed differential pressure.
- d. Automatic closure of the recombiner recycle valve.

QUESTION: 039 (1.00)

The following indications and annunciator alarms have been received on Unit 2:

CONTROL ROOM RAD MONITOR DIV I INITIATED
CONTROL ROOM RAD MONITOR DIV II INITIATED
MCR Fresh Air Supply Flow Recorder (FR-0765) indicates 3150 scfm.
MCR Radiation Monitors (RI-0760A/B) Red High Lights are NOT lit.
MCR Radiation Monitors (RI-0760C/D) Red High Lights are lit.

WHICH ONE (1) of the following is the expected status of the Main Control Room Ventilation System? (Assume 2 minutes have passed).

- a. The Control Room Ventilation dampers and fans have shifted to the Purge Mode.
- b. The Control Room Ventilation System has shutdown and isolated.
- c. The selected Control Room Emergency Vent Fan (OAV-30 or OBV-30) should be running.
- d. The Control Room Ventilation dampers and fans are aligned for normal operation.

QUESTION: 040 (1.00)

A LOCA has occurred on Unit 2. The E1 and E3 emergency diesel generators have failed to start. WHICH ONE (1) of the following describes the status of ECCS area cooling?

- a. All ECCS room coolers are being cooled by the Service Water System.
- b. All ECCS room coolers are being cooled by the Emergency Service Water System.
- c. All ECCS room coolers are being supplied by the Emergency Cooling Water System.
- d. The 'A' RHR and 'A' Core Spray room coolers do not have cooling; all other ECCS room coolers are being supplied by the Service Water System.

QUESTION: 041 (1.00)

Unit 2 has scrambled on high drywell pressure. Shortly after the scram the following annunciator alarmed:

- E12 BUS UNDERVOLTAGE

Voltage has decreased to 88% of normal and is steady. WHICH ONE (1) of the following describes the response to this condition?

- a. The E-12 bus will transfer to its alternate source if this condition exists for greater than 10 seconds.
- b. The E-12 bus will transfer to its alternate source immediately.
- c. The E-12 bus will remain energized from its normal source since a LOCA signal is present.
- d. The E-12 bus will be completely deenergized if this condition exists for greater than 10 seconds.

QUESTION: 042 (1.00)

Unit 2 is at 100% power. The No. 2 Startup and Emergency Auxiliary Transformer (00X03) was taken off service 2 days ago due to a transformer differential fault which caused the 2SU switchgear (00A03) to lockout. The transformer is expected to be back in service in 24 hours. During its operability surveillance the E-4 diesel generator automatically tripped. WHICH ONE (1) of the following actions are required?

- a. E-4 D/G must be returned to operable status within 7 days.
- b. Restore the off-site circuit or the E-4 D/G to operable status within 12 hours.
- c. The unit must be placed in Mode 3 within 12 hours and Mode 4 within 36 hours.
- d. Enter LCO 3.0.3 and be in Mode 4 within 37 hours.

QUESTION: 043 (1.00)

Unit 2 is at 75% power. The turbine control valve operability surveillance has just been completed on Unit 2. The IIRO reports that while testing CV-4, the valve position responded properly, however, the "Turbine Control Valve Fast Closure Trip" and the "B Channel Reactor Auto Scram" annunciators did NOT actuate. Also, a Channel B half scram was NOT received.

WHICH ONE (1) of the following actions is required to be taken?

- a. Place the affected trip system in the tripped condition immediately.
- b. Place the affected trip system in the tripped condition within 12 hours.
- c. Immediately start reducing power to less than 30%.
- d. Place the unit in Mode 2 within 7 hours.

QUESTION: 044 (1.00)

Core reload is in progress at CCTAS step 1150 with six (6) new fuel bundles remaining to be loaded into the core into the "B" quadrant. After loading two of the six new fuel bundles, the CCTAS step 1152 reading and the earlier CCTAS step 1150 SRM readings were as follows:

	SRM A	SRM B	SRM C	SRM D
CCTAS 1150	75	100	75	75
CCTAS 1152	90	200	90	90

WHICH ONE (1) of the following states the expected results of loading the remaining bundles? (Assume all 6 bundles have equal reactivity worth.)

- a. One more bundle will cause a local criticality.
- b. Two more bundles will cause a local criticality.
- c. SRM "B" will indicate 400 cps when the core is fully loaded.
- d. SRM "B" will indicate 600 cps when the core is fully loaded.

QUESTION: 045 (1.00)

You are supervising refueling platform operations at Peach Bottom Unit-2. The "A" RHR pump is in the shutdown cooling mode of operations. The in-vessel visual inspection (IVVI) inspector has requested permission to commence jet pump beam bolt visual inspection. WHICH ONE of the following are the jet pumps that should be avoided at this time?

- a. 1 - 10
- b. 11 - 20
- c. 6 - 15
- d. 1 - 5 and 16 - 20

QUESTION: 046 (1.00)

WHICH one of the following correctly describe interlocks which will prevent an unexpected RPV level decrease while in shutdown cooling?

- a. MO-10-17, "S/D Cooling Outboard" and MO-10-18, "S/D Cooling Inboard" close on low RPV level of 1 inch and high drywell pressure of +2 psig.
MO-10-15A(B)(C)(D), "A(B)(C)(D) S/D Cooling" close on low RPV level of 1 inch and high drywell pressure of +2 psig.
- b. MO-10-17, "S/D Cooling Outboard" and MO-10-18, "S/D Cooling Inboard" close on low RPV level of 1 inch and high drywell pressure of +2 psig.
MO-10-15A(B)(C)(D), "A(B)(C)(D) S/D Cooling" have no auto close signals.
- c. MO-10-17, "S/D Cooling Outboard" and MO-10-18, "S/D Cooling Inboard" close on low RPV level of 1 inch but not on high drywell pressure of +2 psig.
MO-10-15A(B)(C)(D), "A(B)(C)(D) S/D Cooling" close on low RPV level of 1 inch but not on high drywell pressure of +2 psig.
- d. MO-10-17, "S/D Cooling Outboard" and MO-10-18, "S/D Cooling Inboard" close on low RPV level of 1 inch but not on high drywell pressure of +2 psig.
MO-10-15A(B)(C)(D), "A(B)(C)(D) S/D Cooling" have no auto close signals.

QUESTION: 047 (1.00)

WHICH ONE (1) of the following meets the Technical Specification operability requirements for the Standby Liquid Control System for Unit 2?

- | | |
|----------------------|----------|
| a. Boron enrichment | 49% |
| Concentration (% wt) | 8.73% |
| Pump flow rate | 52.3 gpm |
| b. Boron enrichment | 51% |
| Concentration (% wt) | 9.87% |
| Pump flow rate | 51.2 gpm |
| c. Boron enrichment | 52% |
| Concentration (% wt) | 9.63% |
| Pump flow rate | 42.5 gpm |
| d. Boron enrichment | 55% |
| Concentration (% wt) | 8.16% |
| Pump flow rate | 48.7 gpm |

QUESTION: 048 (1.00)

Given the following core information at Peach Bottom Unit #2:

- | | |
|------------|--|
| Quadrant A | SRM A reads 8 cps; 50% of the fuel bundles are removed. |
| Quadrant B | A special movable detector connected to the normal SRM B circuit reads 4 cps; 60% of the fuel bundles are removed. |
| Quadrant C | SRM C reads 10 cps; 50% of the fuel bundles are removed. |
| Quadrant D | SRM D reads 2 cps; all fuel has been removed from the quadrant except 2 bundles adjacent the SRM. |

Assuming the Signal to Noise Ratio for all detectors is 2.1, WHICH ONE (1) of the following is correct regarding removal of fuel from the reactor?

- a. Cannot continue in any quadrant.
- b. Can continue in all the quadrants.
- c. Can continue in quadrants A, B and C only.
- d. Can continue in quadrants A, C and D only.

QUESTION: 049 (1.00)

A complete loss of 125 VDC to the EHC cabinet has occurred. WHICH ONE (1) of the following describes how plant operation is affected?

- a. The main turbine will trip.
- b. The main turbine will remain on line; the turbine can only be tripped at the front standard.
- c. The main turbine will remain on line; the EHC cabinet will automatically transfer to its alternate power source.
- d. The main turbine will remain on line; the turbine can only be tripped at the front standard or by using the manual trip pushbutton.

QUESTION: 050 (1.00)

Unit 2 is at 90% power with the Drywell Chilled Water System (DWCW) aligned as follows:

- 'A' and 'B' Drywell Chilled Water Pumps running; 'C' in standby.
- 'A' and 'B' Drywell Chillers running; 'C' in standby.

The No. 2 Auxiliary Bus becomes deenergized. WHICH ONE (1) of the following explains how the DWCW System will be affected? (Assume no operator actions are taken).

- a. RBCCW will automatically align to the DWCW System and supply all RBCCW and DWCW System loads.
- b. RBCCW will automatically align to the DWCW System; non-essential RBCCW loads will isolate.
- c. Both the 'A' and 'B' Drywell Chilled Water Pumps will trip; the 'C' Drywell Chilled Water Pump will auto start.
- d. The 'A' Drywell Chilled Water Pump will remain running; the 'B' Drywell Chilled Water Pump will trip; the 'C' Drywell Chilled Water Pump will auto start.

QUESTION: 051 (1.00)

WHICH ONE (1) of the following explains how the CRD System will respond to a loss of instrument air?

- a. The scram discharge volume vent and drain valves will fail open.
- b. The CRD drive water pressure control valve will fail closed.
- c. The CRD flow control valve will fail closed.
- d. The CRD suction valve from the CST will fail open.

QUESTION: 052 (1.00)

Unit 2 conditions are as follows:

- Reactor is scrammed, all rods are in.
- RPV water level is - 45 inches and lowering.
- RPV pressure is 800 psig and lowering.
- Drywell pressure is 4 psig and rising.
- Torus spray is in service using the 'A' RHR pump per T-203.
"Initiation of Torus Sprays Using RHR".

WHICH ONE (1) of the following describes how the torus spray lineup will be affected if these conditions continue?

The torus spray valves will ...

- a. automatically close when reactor pressure drops below 450 psig.
- b. automatically close when reactor water level decreases to - 160 inches.
- c. automatically close when reactor water level decreases to below 2/3 core height.
- d. remain open until closed by the operator.

QUESTION: 053 (1.00)

Plant conditions are as follows when the running CRD pump trips:

- Plant startup and heatup in progress
- RPV pressure is 750 psig
- CRD Charging header pressure is 920 psig

The standby CRD Hydraulic Pump will NOT be lined-up for starting for another five (5) minutes. WHICH ONE (1) of the following is the required operator action(s).

- a. Immediately insert a manual reactor scram.
- b. Commence a normal reactor shutdown.
- c. Manually scram the reactor if an accumulator trouble alarm comes in on a withdrawn control rod.
- d. Manually scram the reactor if charging water header pressure is not restored within 20 minutes.

QUESTION: 054 (1.00)

The following annunciator has alarmed on Unit 2:

- INVERTER TROUBLE

WHICH ONE (1) of the following indications would confirm that panel 20Y050 has deenergized?

- a. Recirc pumps run back to 45% speed.
- b. 'A' and 'C' Narrow Range level instrument fail upscale.
- c. Reactor Feed Pumps run back to 85% speed.
- d. Control rod position indication is lost.

QUESTION: 055 (1.00)

A loss of all shutdown cooling has occurred in Mode 4. AO 10.12-2. "Alternate Shutdown Cooling" has been entered. WHICH ONE (1) of the following systems is used to remove the heat being generated in the reactor?

- a. Fuel Pool Cooling heat exchangers.
- b. RBCCW
- c. Emergency Service Water
- d. High Pressure Service Water

QUESTION: 056 (1.00)

Unit 2 is in Mode 4 with both recirc pumps secured and shutdown cooling in service. WHICH ONE (1) of the following actions would be required if the only available RHR pump should trip?

- a. Place a recirc pump in operation.
- b. Establish reactor water level in a band +5 to +35 inches.
- c. Restore the RHR pump to service within 12 hours.
- d. Establish primary containment integrity within 4 hours after entry into Mode 3.

QUESTION: 057 (1.00)

A loss of a reactor feed water pump on Unit 2 has occurred. Reactor water level is +20 inches and lowering slowly. The URO is reducing recirc flow per GP-9-2, "Fast Reactor Power Reduction" when the following annunciator alarms:

- APRM HIGH

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

- a. Stop reducing recirc flow and manually insert control rods per GP-9-2 Appendix 1.
- b. Stop reducing recirc flow and manually scram the reactor.
- c. Continue reducing recirc flow until minimum speed is reached.
- d. Trip the recirc pumps then manually scram the reactor.

QUESTION: 058 (1.00)

Unit 3 is operating at approximately 90% power when the PRO recognizes that main condenser vacuum is decreasing slowly. WHICH ONE (1) of the following conditions could be the cause for the lowering vacuum?

- a. SJAЕ supply pressure is 95 psig.
- b. Seal steam header pressure is 1.0 psig.
- c. Auxiliary Steam System pressure is 200 psig.
- d. Circ water pump bay level is 110 feet.

QUESTION: 059 (1.00)

During a GP-3 shutdown following a transfer of house loads, a loss of level control on Unit 2 has resulted in reactor water level reaching + 60 inches and is rising very slowly. WHICH ONE (1) of the following automatic actions should have occurred?

- a. Both recirc pumps trip.
- b. All condensate pumps trip.
- c. A HPCI turbine trip.
- d. RCIC steam line isolation valves (MO-15,16) close.

QUESTION: 060 (1.00)

Unit 2 is operating at 60% power with a HPCI surveillance in progress. SPOTMOS temperature indicates 95 degrees F. The following annunciator alarm is received:

- SAFETY RELIEF VALVE OPEN

WHICH ONE (1) of the following describes when the crew is required to initiate a manual reactor scram?

- a. When Torus temperature reaches 105 degrees F.
- b. When Torus temperature exceeds 110 degrees F.
- c. Immediately after verifying that an SRV is open..
- d. After exhausting all attempts to close the SRV.

QUESTION: 061 (1.00)

An EHC failure has resulted in reactor pressure increasing to 1090 psig but the reactor did NOT scram. In response to the failure to scram the URO manually initiated the Alternate Rod Insertion (ARI) System and all control rods inserted.

WHICH ONE (1) of the following describes how the reactor recirc pumps will respond to a manual initiation of ARI?

- a. The recirc pumps will trip.
- b. The recirc pumps will run back to minimum speed.
- c. The recirculation pumps will remain running at their present speed with the scoop tubes locked up.
- d. The recirculation pumps will remain running at their present speed with the scoop tubes operational.

QUESTION: 062 (1.00)

A stuck open SRV has resulted in a manual reactor scram. Actions taken to close the SRV were successful. Current plant conditions are as follows:

- | | |
|---------------------------|------------------|
| - Reactor power | 0% (All rods in) |
| - Torus water temperature | 155 degrees F |
| - Reactor pressure | 225 psig |
| - MSIVs | Closed |

WHICH ONE of the following actions is required?

- a. Reopen the MSIVs.
- b. Inspect the suppression chamber before resuming power operations.
- c. Declare RHR Suppression Pool Cooling inoperable.
- d. Depressurize the reactor vessel to less than 200 psig.

QUESTION: 063 (1.00)

T-101, "RPV Control" has been entered on high reactor pressure. The MSIVs are closed and SRVs are cycling. The SRO has directed the PRO to control reactor pressure between 950 and 1050 psig using SRVs. WHICH ONE (1) of the following is the reason for stabilizing reactor pressure below 1050 psig?

- a. To allow the scram logic to be reset.
- b. To minimize the inventory lost from the reactor.
- c. To maintain operability of reactor water level instruments.
- d. To maintain cooldown rate below 100 degrees F per hour.

QUESTION: 064 (1.00)

An automatic reactor scram has occurred. All control rods were full out prior to the scram. Two of the control rods did NOT fully insert. One control rod is at position 04 and the other control rod is at position 08. All scram solenoids have deenergized and all scram valves have opened.

WHICH ONE (1) of the following methods of control rod insertion would be the most likely to be effective for inserting these rods?

- a. Use the individual scram test switches.
- b. Vent the scram air header.
- c. Raise CRD drive water pressure and manually drive in the control rods.
- d. Initiate the ARI System.

QUESTION: 065 (1.00)

WHICH ONE (1) of the following conditions would require entry into T-104, "Radioactivity Release"?

- a. Reactor coolant activity has been determined to be 5.2 microcuries per gram dose equivalent I-131.
- b. Offgas radiation levels are 2800 mRem/hr.
- c. The dose at the site boundary, due to the iodine-131 release rate out the Main Stack, is equal to 1000 mrem per year.
- d. The calculated offsite dose rate is 0.150 mRem/hr child thyroid committed dose equivalent (CDE).

QUESTION: 066 (1.00)

T-104, "Radioactivity Release", has been entered. The Turbine Building Ventilation System has been restarted? WHICH ONE (1) of the following is reason for restarting the ventilation system?

- a. To maintain negative pressure in the Turbine Building.
- b. To prevent an unmonitored radiation release to the environment.
- c. To provide a filtered release path to the environment.
- d. To assure maximum safe temperature limits are not reached.

QUESTION: 067 (1.00)

A leak from the HPSW System has resulted in flooding in the Unit 3 A/C RHR Rooms. The leak has been isolated and room water levels are as follows:

'A' RHR Room	3 ft. 0 in.
'B' RHR Room	1 ft. 6 in.

WHICH ONE (1) of the following describes the actions required per T-103, "Secondary Containment Control"?

- a. Plant operation may continue, no shutdown is required.
- b. A normal plant shutdown is required followed by a normal plant cooldown.
- c. A reactor scram is required followed by a normal plant cooldown.
- d. A reactor scram is required followed by an emergency blowdown.

QUESTION: 068 (1.00)

A failure to scram has occurred and reactor power is approximately 35%. WHICH ONE (1) of the following would be the consequence of tripping the reactor recirc pumps above minimum speed?

- a. A turbine trip on high reactor water level.
- b. A loss of turbine bypass valves.
- c. Reactor pressure exceeding the SRV lifting setpoints.
- d. A Group II isolation may occur.

QUESTION: 069 (1.00)

A loss of air to one of the drain valves on the scram discharge volume has caused it to fail closed. WHICH ONE of the following describes the restrictions placed on plant operation?

- a. The reactor may operate indefinitely as long as all other drain valves are operable.
- b. The reactor must be in Mode 3 within 13 hours.
- c. The affected drain line must be isolated within 8 hours by closing the operable drain valve.
- d. The reactor can continue to operate as long as the valve is repaired within 7 days.

QUESTION: 070 (1.00)

Unit 2 power is 70% when a control rod at position 24 starts to drift out. WHICH ONE (1) of the following actions should be taken?

- a. Momentarily turn off RMCS power.
- b. Give the control rod a momentary insert signal.
- c. Drive the control rod in to its original position.
- d. Fully insert the control rod using EMERG IN.

QUESTION: 071 (1.00)

Unit 2 has scrammed and plant conditions are as follows:

- | | |
|--------------------------------|---------------------|
| - Reactor power | 0% (all rods in) |
| - Reactor pressure | 900 psig and stable |
| - TI-2501 PT 126 | 510 degrees F |
| - TI-2501 PT 127 | 510 degrees F |
| - Narrow range RPV water level | + 15 inches |
| - LI-2-02-3-085A | - 125 inches |
| - LI-2-02-3-085B | - 115 inches |
| - LI-2-2-3-086 | + 60 inches |

WHICH ONE (1) of the following reactor water level indicators is available to trend RPV water level?

- a. Narrow Range only.
- b. LI-2-02-3-085B only.
- c. Narrow Range and LI-2-02-3-085B only.
- d. LI-2-02-3-085B and LI-2-2-3-086 only.

QUESTION: 072 (1.00)

An ATWS has occurred on Unit 3. The URO is implementing T-220-3, "Driving Control Rods During Failure To Scram". WHICH ONE (1) of the following explains why the Charging Water Hdr Blk Valve (HV-3-56) is closed?

To increase the ...

- a. rate at which the CRD Over-piston area vents.
- b. rate at which the scram discharge volume drains.
- c. rate at which the CRD accumulators repressurize.
- d. CRD flow to the drive water header for driving in control rods.

QUESTION: 073 (1.00)

A transient on Unit 2 has resulted in a rupture of the torus causing torus level to decrease. Plant conditions are as follows:

- Reactor power 0% (all rods inserted)
- Reactor pressure 800 psig and decreasing
- Torus level 10.5 feet, dropping slowly
- Torus pressure 3.5 psig
- Torus temperature 90 degrees F

WHICH ONE (1) of the following statements describes the effect that this torus water level will have on plant operations?

- a. RHR and Core Spray pumps cannot be run due to cavitation concerns on low suction pressure.
- b. HPCI can only be operated if it is aligned to the CST.
- c. The SRVs may be damaged during operation due to water backing up into the discharge piping.
- d. The reactor should undergo an emergency blowdown since the drywell downcomers may become uncovered.

QUESTION: 074 (1.00)

Evacuation of the main control room is required due to toxic gas. WHICH ONE (1) of the following describes operator actions that should be taken (if possible) prior to evacuating the control room?

- a. Trip all recirc pumps.
- b. Initiate RCIC.
- c. Open all turbine bypass valves.
- d. Place torus cooling in service.

QUESTION: 075 (1.00)

A large break LOCA has occurred on Unit 2. Plant conditions are as follows:

- | | |
|-----------------------|-------------------------|
| - Reactor water level | - 130 inches and steady |
| - Reactor pressure | 55 psig and rising |
| - Drywell pressure | 55 psig and rising |
| - Torus pressure | 57 psig and rising |
| - Torus water level | + 23 feet |

Under these conditions, WHICH ONE (1) of the following describes the initial primary containment vent path to prevent exceeding the CTMT VENT PRESS?

- a. From the Torus via the SBGTS.
- b. From the Drywell via the SBGTS.
- c. From the Torus via the Hardened Vent.
- d. From the Drywell via ILRT line to atmosphere.

QUESTION: 076 (1.00)

WHICH ONE (1) of the following conditions would allow anticipating an emergency blowdown and permit rapidly depressurizing the reactor vessel through the main turbine bypass valves?

- a. Reactor water level is -165 inches and falling slowly.
- b. An ATWS has resulted in the Heat Capacity Temperature Limit being approached.
- c. Drywell temperature is 275 degrees F and rising slowly.
- d. Fire fighting activities in the Reactor Building has resulted in two areas approaching their action water levels.

QUESTION: 077 (1.00)

The reactor was operating at approximately 5% reactor power following a refueling outage when a scram occurred due to a spurious Group 1 main steam line isolation. WHICH ONE (1) of the following pressure control methods will minimize the inventory loss from the reactor vessel?

- a. Bleeding steam through the main steam line drains.
- b. RWCU in the recirc mode
- c. RCIC in the pressure control mode.
- d. RWCU in the reject mode.

QUESTION: 078 (1.00)

Unit 2 plant conditions are as follows:

- A scram condition exists but the reactor did NOT shutdown.
- Reactor power is 15%.
- Only one SBLC pump is injecting; the other pump has failed.
- The MSIVs are closed and 3 SRVs are open for pressure control.
- RPV Water Level is +15 inches and is being deliberately lowered.
- Suppression pool temperature is 112 degrees F.

WHICH ONE (1) of the following is the primary reason for deliberately lowering RPV water level under these conditions?

- a. To promote boron mixing.
- b. To prevent exceeding a thermal limit.
- c. To minimize the challenge to the fuel cladding.
- d. To minimize the threat to primary containment integrity.

QUESTION: 079 (1.00)

WHICH ONE of the following conditions would require an emergency blowdown?

- a. A HPCI System leak has resulted in the HPCI Room reaching 185 degrees F and 9,500 mr/hr.
- b. Fire fighting activities has resulted in water level reaching 18 inches in the 'B' and 'C' RHR Rooms
- c. An unisolable steam leak has resulted in Steam Tunnel temperature exceeding 200 degrees F.
- d. A RWCU leak has resulted in area radiation levels in the RWCU/Isol Valve Pit Area and General Area 195' Elevation reaching 10,000mr/hr.

QUESTION: 080 (1.00)

A station blackout has occurred. WHICH ONE (1) of the following actions is NOT permitted to ensure that the HPCI/RCIC systems are available for extended operations?

- a. Establish cross ventilation to the HPCI/RCIC rooms.
- b. Defeating the RCIC low pressure isolation.
- c. Defeating the HPCI/RCIC high temperature isolations.
- d. Defeating the HPCI low pressure isolation.

QUESTION: 081 (1.00)

During execution of T-118, "Primary Containment Flooding" the RPV is vented via the MSIVs. WHICH ONE (1) of the following explains the purpose of venting the RPV under these conditions?

- a. To ensure that the torus load limit is not exceeded.
- b. To ensure that the containment failure pressure limit will not be exceeded due to the compression of the containment air space.
- c. To ensure that the water in the containment will fill the reactor pressure vessel and submerge the core.
- d. To prevent a buildup of combustible hydrogen inside the containment.

QUESTION: 082 (1.00)

A large break LOCA on Unit 2 has occurred. WHICH ONE of the following conditions represents "Adequate Core Cooling"?

- a. Reactor power: Shutdown
RPV water level: - 175 inches being maintained with Fire System water.
Reactor pressure: 50 psig and steady
- b. Reactor power: Shutdown
RPV water level: - 205 inches with no injection sources.
Reactor pressure: 325 psig and steady
- c. Reactor power: Not Shutdown
RPV water level: Unknown
ADS valves: 5 are open
Reactor pressure: 210 psig and steady
Torus pressure: 5 psig
- d. Reactor power: Shutdown
RPV water level: Unknown
ADS valves: 5 are open
Reactor pressure: 95 psig and steady
Torus pressure: 5 psig

QUESTION: 083 (1.00)

T-118, "Primary Containment Flooding" has been entered due to an inability to keep the core covered. Containment conditions are as follows:

- Drywell pressure (PR-2508) 12 psig
- Drywell pressure (PR-4805) Upscale
- Torus pressure (PI-4953) 39 psig

WHICH ONE (1) of the following describes the status of the water level in the containment?

Containment water level ...

- a. cannot be determined.
- b. is below TAF.
- c. is between TAF and the Drywell 18 inch vent.
- d. is above the Drywell 18 inch vent.

QUESTION: 084 (1.00)

The scram discharge volume vent valves 32B and 35B were found open after a scram transient. Drywell radiation levels, per the RI-8103's, spiked to a level of 51,000 R/hr then decreased to 431 R/hr and stabilized.

WHICH ONE (1) of the following actions should be taken if the vent stack is indicating 16,000 cpm?

- a. Declare a Site Area Emergency; Evacuate the affected area for 2 to 5 miles.
- b. Declare a General Emergency; Evacuate the affected area for 5 to 10 miles.
- c. Declare a Site Area Emergency; Do not evacuate the affected area.
- d. Declare a General Emergency; Do not evacuate the affected area.

QUESTION: 085 (1.00)

WHICH ONE (1) of the following describes how the lock and chain should be left when a manually locked valve is unlocked?

- a. The chain is wrapped around the pipe next to the valve with the lock being in the locked condition.
- b. The chain is looped through the valve handwheel so as not to obstruct valve movement with the lock in the locked condition.
- c. The chain is wrapped around the valve yoke with the lock in the unlocked condition.
- d. The chain is looped through the valve yoke with the lock in the unlocked condition.

QUESTION: 086 (1.00)

Unit 2 has scrammed due to a Main Turbine trip. Drywell pressure increased to 1.2 psig and is now decreasing. RPV water level dropped to +13 inches and is increasing. During the scram transient all annunciation was lost on the Unit 2 control room panels due to a system power failure. WHICH ONE (1) of the following is the MINIMUM Emergency Classification for this event?

- a. Unusual Event
- b. Alert
- c. Site Emergency
- d. General Emergency

QUESTION: 087 (1.00)

New fuel inspection for Unit 3 has resulted in finding an unsatisfactory fuel bundle. Concerning the affected fuel bundle, WHICH ONE (1) of the following actions would be allowable?

- a. Storing the bundle in the Unit 3 fuel pool after receiving authorization from the Fuel Handling Director.
- b. Moving the bundle to the designated irradiated storage area when authorized by the Fuel Handling Director.
- c. Storing the bundle in the PBAPS Storeroom after receiving authorization from the Reactor Engineer.
- d. Moving the bundle to the Unit 2 Refuel floor area after receiving authorization from the Reactor Engineer.

QUESTION: 088 (1.00)

An accident has occurred in a contaminated area. You are with the victim who has a severe pain in his back and cannot walk on his own. WHICH ONE (1) of the following describes the action(s) you should take?

- a. Call for an ambulance and assess the radiological conditions before you transfer the victim from the contaminated area.
- b. Prepare the victim for transfer and take on the responsibility of the Incident Commander.
- c. Notify the Main Control Room to request members of the Medical Response Team to report to the area.
- d. Immediately remove the victim from the area and allow the Emergency Medical Technicians to prepare him for transfer.

QUESTION: 089 (1.00)

WHICH ONE (1) of the following conditions will permit a procedure change to be processed via a Temporary Change (TC)?

The procedure change ...

- a. will eliminate QV hold points.
- b. corrects a procedure error and time constraints prevent processing a procedure revision.
- c. will change the scope of the procedure and time constraints prevent delay of the performance of the procedure.
- d. eliminates the acceptance criteria of a surveillance test but the affected system is still operable per Technical Specifications.

QUESTION: 090 (1.00)

The Unit 2 RO is collecting data for a required surveillance. One of the "black box" steps cannot be completed because the instrument associated with the data collection is inoperable. All other data taken was normal. WHICH ONE (1) of the following describes the action(s) that should be taken?

- a. Record the as found data; declare the system operable; initiate maintenance on the inoperable instrument.
- b. Request engineering to make a operability determination on the system.
- c. Notify shift management and sign off the surveillance as unsatisfactory.
- d. Record the instrument data as Out-of-Service; declare the system operable; initiate maintenance on the inoperable instrument.

QUESTION: 091 (1.00)

WHICH ONE (1) of the following is the lowest level of authority that may authorize radiation exposures in excess of 10CFR20 limits during an event requiring the activation of the TSC?

- a. Emergency Response Manager
- b. Plant Manager
- c. Dose Assessment Advisor
- d. Emergency Director

QUESTION: 092 (1.00)

WHICH ONE (1) of the following conditions must be met to allow the URO to be temporarily relieved of his duties while both units are operating at full power?

- a. There must be a minimum of two licensed operators (ROs) in the Main Control Room.
- b. The relieving RO must be briefed by the Shift Manager.
- c. The temporary relief period is expected to be less than one hour.
- d. If the relieving RO was not at the Shift Turnover Meeting, the temporary relief must be documented in the Narrative Log.

QUESTION: 093 (1.00)

An individual has just come on shift and has a current exposure of 1500 mrem TEDE. WHICH ONE (1) of the following is the maximum additional TEDE dose he/she is allowed to receive without obtaining a dose extension?

- a. 1500 mrem TEDE
- b. 2500 mrem TEDE
- c. 3000 mrem TEDE
- d. 3500 mrem TEDE

QUESTION: 094 (1.00)

In the Main Control Room, during full power operations, an annunciator continues to alarm due to corrective maintenance associated with a corresponding system. The maintenance is scheduled to be completed at the end of the next shift. WHICH ONE (1) of the following actions could be taken?

- a. Remove the annunciator can and reinsert the can in an inverted position as authorized by the Engineering Duty Manager.
- b. Place the annunciator mode switch to manual as authorized by Shift Management and initiate an EST.
- c. For Process Computer associated alarms obtain the System Engineers permission to delete the alarm during the maintenance period.
- d. With the Shift Supervisor permission place a red triangle on the alarm window and make the appropriate EDL entry.

QUESTION: 095 (1.00)

WHICH ONE (1) of the following describes the indication that will satisfy Independent Verification (IV) that an excess flow check valve is in the normal position?

- a. Red light is on.
- b. White light is on.
- c. Green light is on.
- d. No lights are on.

QUESTION: 096 (1.00)

During a plant startup, a licensed control room operator assisting with the startup in the Main Control Room has worked the following hours excluding turnover time:

Friday	1600 to 0400
Saturday	1200 to 2400
Sunday	1000 to 1600
Monday	0700 to 1500
Tuesday	0900 to 2300
Wednesday	0800 to 1700

WHICH ONE (1) of the following statements below identifies the violations of the overtime guidelines?

- a. The operator worked more than 16 hours in 48.
- b. The operator worked more than 16 hours in 24.
- c. The operator worked more than 12 hours in 24.
- d. The operator worked more than 24 hours in 48.

QUESTION: 097 (1.00)

Technical Specifications sets limits on chlorides in the reactor coolant system. WHICH ONE (1) of the following describes the basis for this limit?

- a. Chlorides increase the formation of insoluble metallic corrosion products.
- b. Chlorides increase galvanic corrosion at dissimilar metal junctions.
- c. Chlorides catalyze the oxidation of carbon steel.
- d. Chlorides contribute to stress cracking of the stainless steel.

QUESTION: 098 (1.00)

WHICH ONE (1) of the following describes the function of Check-Off Lists (COLs)?

- a. COLs must be performed to ensure system readiness prior to operation.
- b. COLs are performed to align a system so that a specific task can be performed.
- c. COLs are used to verify the adequacy of a system Clearance.
- d. COLs are used to verify a system is operable per Technical Specifications.

QUESTION: 099 (1.00)

WHICH ONE (1) of the following describes the main control room instrumentation that is backed by DC power?

- a. Red tags with white lettering.
- b. Yellow tags with black lettering.
- c. Black tags with yellow lettering.
- d. White tags with red lettering.

QUESTION: 100 (1.00)

WHICH ONE (1) of the following correctly describes the storage of transient combustible materials? Transient combustible materials:

- a. cannot be stored in the control room.
- b. cannot be stored in the protected area.
- c. can be stored in the plant areas in closed metal containers.
- d. can be stored in stairwell enclosures in closed metal containers.

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

ANSWER KEY

MULTIPLE CHOICE

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

ANSWER KEY

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

ANSWER KEY

092 c

093 a

094 ~~a~~ b

095 a

096 d

097 d

098 b

099 b

100 c

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

ATTACHMENT 2

RO EXAMINATION AND ANSWER KEY

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

APPLICANT'S NAME: _____

FACILITY: _____ Peach Bottom 2 & 3 _____

REACTOR TYPE: _____ BWR-GE4 _____

DATE ADMINISTERED: _____ September 13, 1996 _____

INSTRUCTIONS TO APPLICANT:

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 80.00%. Examination papers will be picked up four (4) hours after the examination starts.

TEST VALUE	APPLICANT'S SCORE	FINAL GRADE
100.00		

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

Applicant's Signature

ANSWER SHEET

Multiple Choice (Circle or X your choice)

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

MULTIPLE CHOICE					
001	a	b	c	d	___
002	a	b	c	d	___
003	a	b	c	d	___
004	a	b	c	d	___
005	a	b	c	d	___
006	a	b	c	d	___
007	a	b	c	d	___
008	a	b	c	d	___
009	a	b	c	d	___
010	a	b	c	d	___
011	a	b	c	d	___
012	a	b	c	d	___
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014	a	b	c	d	___
015	a	b	c	d	___
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025	a	b	c	d	___
026	a	b	c	d	___
027	a	b	c	d	___
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038	a	b	c	d	___
039	a	b	c	d	___
040	a	b	c	d	___
041	a	b	c	d	___
042	a	b	c	d	___
043	a	b	c	d	___
044	a	b	c	d	___
045	a	b	c	d	___

ANSWER SHEET

Multiple Choice (Circle or X your choice)

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

046 a b c d ____

047 a b c d ____

048 a b c d ____

049 a b c d ____

050 a b c d ____

051 a b c d ____

052 a b c d ____

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074 a b c d ____

075 a b c d ____

076 a b c d ____

077 a b c d ____

078 a b c d ____

079 a b c d ____

080 a b c d ____

081 a b c d ____

082 a b c d ____

083 a b c d ____

084 a b c d ____

085 a b c d ____

086 a b c d ____

087 a b c d ____

088 a b c d ____

089 a b c d ____

090 a b c d ____

091 a b c d ____

ANSWER SHEET

Multiple Choice (Circle or X your choice)

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

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

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

NRC RULES AND GUIDELINES FOR LICENSE EXAMINATIONS

Next page is 7

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. The point value for each question is indicated in parentheses after the question.
8. If the intent of a question is unclear, ask questions of the examiner only.
9. When turning in your examination, assemble the completed examination with examination questions, examination aids and answer sheets. In addition, turn in all scrap paper.
10. 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.
11. To pass the examination, you must achieve a grade of 80.00% or greater.
12. There is a time limit of four (4) hours for completion of the examination.
13. 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 reactor startup is in progress on Unit 2. All IRMs are on range 2 and all SRMs are being withdrawn when the following SRM indications are received.

- SRM A 110 cps
- SRM B 125 cps
- SRM C 120 cps
- SRM D 95 cps

WHICH ONE (1) of the following actions should occur under these conditions?

- a. An SRM "HI/INOP" rod out block will be generated.
- b. All SRM detector drive motors will deenergize.
- c. Only SRM D detector drive motor will deenergize.
- d. An SRM detector wrong position rod out block will be generated.

QUESTION: 002 (1.00)

WHICH ONE (1) of the following will result in an IRM HI-HI half scram signal being generated?

- a. Mode switch is in STARTUP; IRM A is indicating 100/125 of full scale on range 2.
- b. Mode switch is in RUN; IRM B is indicating 108/125 of full scale on range 8; APRM B is failed downscale.
- c. Mode switch is in RUN; IRM G is indicating 120/125 of full scale on range 10; APRM E is failed downscale.
- d. Mode switch is in STARTUP; IRM H is indicating 108/125 of full scale on range 6.

QUESTION: 003 (1.00)

WHICH ONE (1) of the following will mitigate the consequence of a rod drop accident?

- a. Velocity Limiter
- b. Rod Block Monitor
- c. Collet Piston
- d. Uncoupling Rod

QUESTION: 004 (1.00)

A control rod scram accumulator nitrogen pressure indicates 0 psig. WHICH ONE (1) of the following statements explains how the scram response of the control rod will be affected?

- a. The control rod will be hydraulically locked in place since the accumulator is valved out.
- b. The control rod scram time will increase as reactor pressure increases.
- c. The control rod will not fully scram if the reactor pressure is less than 400 psig.
- d. The control rod will fully scram regardless of reactor pressure.

QUESTION: 005 (1.00)

A Unit 2 reactor startup is in progress. Reactor power is approximately 1%. The following conditions exist on the RWCU system which has just been placed in service:

- | | |
|----------------------------|---------------|
| - RWCU Pump 2A | 200 gpm flow |
| - RWCU Pump 2B | Secured |
| - Non-Regen HX outlet temp | 120 degrees F |
| - RWCU F/D 2A flow | 200 gpm |

WHICH ONE (1) of the following actions is required to be taken?

- Increase the flow from the 2A RWCU pump.
- Place the second RWCU pump in service.
- Increase RBCCW flow to lower the non-regen HX outlet temperature.
- Reduce the flow through RWCU F/D 2A.

QUESTION: 006 (1.00)

Unit 2 power is 38% and preparations are underway to startup the 2B reactor recirculation pump. The 2A reactor recirc pump is running at 40% rated speed. Plant conditions are as follows:

- Reactor vessel dome pressure 980 psig
- Loop 'A' temperature 530 degrees F
- Loop 'B' temperature 500 degrees F
- Bottom head coolant temperature 390 degrees F

WHICH ONE (1) of the following describes the limitations, if any, imposed on starting the 'B' reactor recirc pump under the given conditions?

- a. The pump may be started immediately.
- b. The pump should not be started because the bottom head coolant temperature is too low.
- c. The pump should not be started because the loop differential temperature is too high.
- d. The pump should not be started because the 2A reactor recirc pump is running too fast.

QUESTION: 007 (1.00)

A power ascension was in progress on Unit 2 when the 2B reactor recirc pump tripped. Plant conditions are as follows:

- Reactor power 50%
- Core flow 42%

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

- a. Restart the tripped recirc pump and increase core flow.
- b. Immediately insert a manual reactor scram.
- c. Reduce the speed of the running reactor recirc pump to lower reactor power.
- d. Insert control rods to lower reactor power.

QUESTION: 008 (1.00)

A reactor startup is in progress. The Mode Switch is in STARTUP and Group 1 rods are being withdrawn. Control rod 50-31 was being withdrawn when it lost position indication. After stopping rod motion it was determined that the rod was at position 12 and a substitute position was entered into the Rod Worth Minimizer (RWM).

WHICH ONE (1) of the following explains how RWM control is affected by these conditions?

- a. The RWM will function normally and will initiate a rod block if control rod 50-31 is mispositioned.
- b. The RWM will not enforce any rod blocks associated with the movement of control rod 50-31.
- c. The RWM will prevent control rod 50-31 from being moved in any direction.
- d. The RWM will enforce a rod out block only on control rod 50-31.

QUESTION: 009 (1.00)

A reactor startup is in progress on Unit 2. The Rod Worth Minimizer has failed and is procedurally bypassed. The reactor startup is continuing. WHICH ONE (1) of the following describes the restrictions placed on the use of continuous notch override when withdrawing controls rods under these conditions?

Continuous notch override ...

- a. cannot be used under these conditions.
- b. can only be used if the rod target position is position 48.
- c. can be used to move any control rod as long as a second licensed operator is present to verify rod movement.
- d. can only be used if a "black and white" rod pattern has been achieved.

QUESTION: 010 (1.00)

Control rods are being withdrawn to bring the reactor critical. WHICH ONE (1) of the following would require the URO to stop withdrawing control rods?

- a. SRM period is 45 seconds.
- b. SRM period is 125 seconds.
- c. SRM count rates are 1000 cps.
- d. SRM count rate has doubled from the initial count rate.

QUESTION: 011 (1.00)

Control rods are being withdrawn to perform a reactor heatup on Unit 2 per procedure GP-2, Normal Plant Startup? Reactor pressure is 85 psig. If the heatup continues for two hours at the procedural heatup rate limit, WHICH ONE (1) of the following would be the maximum expected value of reactor pressure.

- a. 615 psig
- b. 660 psig
- c. 710 psig
- d. 855 psig

QUESTION: 012 (1.00)

Unit 2 is critical with a plant startup in progress after a refueling outage. WHICH ONE (1) of the following describes when the Reactor Operator can expect IRM response to become significantly more pronounced during individual rod withdrawal?

- a. After achieving a "black and white" rod pattern.
- b. Whenever a peripheral control rod is withdrawn.
- c. When reactor power is between IRM range 3 and IRM 4.
- d. When the reactor starts to pressurize.

QUESTION: 013 (1.00)

The shell warming mode of the main turbine has just been selected. WHICH ONE (1) of the following describes the valve alignment during this operation?

- a. The turbine control valves are open fully; the intercept valves are closed; the intermediate stop valves are closed.
- b. The turbine control valves are partially open; the intercept valves are open fully; the intermediate stop valves are closed.
- c. One turbine control valve is open fully; the intercept valves are closed; the intermediate stop valves are fully open.
- d. The turbine control valves are closed; the intercept valves are partially open; the intermediate stop valves are partially open.

QUESTION: 014 (1.00)

During shell warming, turbine first stage pressure increases to 140 psig. WHICH ONE (1) of the following is the expected response to this condition?

- a. A Group I isolation will occur.
- b. A reactor scram will be initiated.
- c. The main turbine will overspeed.
- d. Main condenser vacuum will start to decrease.

QUESTION: 015 (1.00)

Reactor power is indicating approximately 9% on the APRMs with preparation being made to roll the main turbine. WHICH ONE (1) of the following is used to verify that the APRMs are indicating properly?

- a. 3D MONICORE P-1 printout.
- b. Turbine bypass valve position.
- c. Main steam line flow indication.
- d. IRM indication.

QUESTION: 016 (1.00)

Preparations are being made to place the Unit mode switch to "RUN".
Plant conditions are as follows:

- | | |
|----------------------------|-------------------------------|
| - IRM C | Failed upscale (NOT Bypassed) |
| - Highest reading APRM (D) | 13% |
| - Lowest reading APRM (C) | 5% |
| - PAM pressure | 860 psig |
| - Main condenser vacuum | 22 inches HG |

WHICH ONE (1) of the following would occur if the mode switch was placed in "RUN" under these conditions?

- a. Half scram.
- b. Full reactor scram only.
- c. Group I isolation only.
- d. Full reactor scram AND Group I isolation.

QUESTION: 017 (1.00)

WHICH ONE (1) of the following explains why the IRMs should be placed on a range which will maintain them onscale when the reactor is operating at full power?

- a. To extend the operational life of the IRM detectors.
- b. To support the operability of the Rod Block Monitor system.
- c. To support the operability of the APRM downscale RPS function.
- d. To prevent inadvertent IRM HI-HI trip signals from being generated.

QUESTION: 018 (1.00)

Power ascension is in progress. WHICH ONE (1) of the following describes a condition where the Low Power Set Point (LPSP) has been cleared?

- a. One APRM channel in each RPS trip system is indicating greater than 10% power.
- b. At least one APRM is indicating 15% power.
- c. Feedwater flow is 17%; Steam flow is 21%.
- d. Feedwater flow is 14%; Steam flow is 18%.

QUESTION: 019 (1.00)

Unit 2 is operating at 100% power. Reactor Building Ventilation has been placed on the SBT system due to a high radiation condition. WHICH ONE (1) of the following is the possible consequences of continued operation in this lineup?

- a. A Group I isolation may occur from high MSL tunnel temperature.
- b. Group IV isolation may occur from high HPCI room temperature.
- c. Group II isolation may occur from high RWCU area temperatures
- d. Group V isolation may occur from high RCIC room temperatures.

QUESTION: 020 (1.00)

A reactor shutdown is in progress on Unit 3. Reactor recirc flow is being lowered. WHICH ONE (1) of the following is the maximum rate of power reduction per GP-3, "Normal Plant Shutdown"? (Assume no abnormal conditions exist).

Maximum rate of power reduction is ...

- a. 5 MWe/minute.
- b. 13 MWe/minute.
- c. 25 MWe/minute.
- d. 30 MWe/minute.

QUESTION: 021 (1.00)

WHICH ONE (1) of the following describes when it is allowable to purge the primary containment using the Reactor Building Ventilation Exhaust System?

- a. When one train of the Standby Gas Treatment System is inoperable.
- b. When reactor power is less than or equal to 15% rated thermal power.
- c. When the reactor is in a cold shutdown condition.
- d. When the primary containment is required to be operable.

QUESTION: 022 (1.00)

WHICH ONE (1) of the following describes a condition when the Rod Block Monitor is required to be in operation?

- a. The reactor mode switch is placed in STARTUP.
- b. The Rod Worth Minimizer is inoperable.
- c. Anytime control rods are being moved.
- d. Reactor power is greater than 30%.

QUESTION: 023 (1.00)

Given the following conditions on Unit 3:

- An ATWS has occurred.
- Power is lost to 3R4-R-B.
- The SRO has directed the URO to initiate SBLC.
- The URO positions the keylock switch to the "Pump B Run" position.

WHICH ONE (1) of the following describes the status of the SBLC system under these conditions?

- a. 3A pump is OFF; 3B pump is ON; BOTH explosive valves fired; RWCU is isolated.
- b. 3A pump is ON; 3B pump is OFF; ONE explosive valve fired; RWCU is isolated.
- c. 3A pump is ON; 3B pump is ON; BOTH explosive valves fired; RWCU is isolated.
- d. 3A pump is OFF; 3B pump is OFF; NEITHER explosive valve fired; RWCU is not isolated.

QUESTION: 024 (1.00)

The HPCI system was in a normal standby alignment when a valid automatic initiation signal was received. Shortly after HPCI initiation the PRO notices that the HPCI system has realigned to the alternate suction source. WHICH ONE (1) of the following conditions could have caused the HPCI system to realign?

- a. Low torus level.
- b. Low booster pump suction pressure.
- c. Low CST level.
- d. A group IV isolation signal.

QUESTION: 025 (1.00)

WHICH ONE (1) of the following describes a condition where the reactor coolant system pressure safety limit has been exceeded?

- a. Recirc loop pump suction pressure is 1260 psig.
- b. Recirc loop pump discharge pressure is 1330 psig.
- c. Reactor steam dome pressure is 1350 psig.
- d. Vessel bottom head pressure is 1360 psig.

QUESTION: 026 (1.00)

WHICH ONE (1) of the following supplies power to the Backup Scram Valves?

- a. 24 VDC bus power
- b. 125 VDC bus power
- c. RPS Bus A and B
- d. 120 VAC Instrument Bus

QUESTION: 027 (1.00)

WHICH ONE (1) of the following will result in an APRM Inop trip signal being generated?

- a. A 10% or greater difference between two APRM Flow Units.
- b. Bypassing two LPRM inputs from a single level.
- c. Placing the APRM Mode Switch to the "POWER FLOW" position.
- d. The LPRM count circuit senses only 16 LPRMs.

QUESTION: 028 (1.00)

The E2 Diesel Generator tripped following a start on high drywell pressure. E2 Diesel Generator operating conditions just prior to the trip were as follows:

- Lube oil pressure: 21 psig
- Engine cooling water outlet temperature: 210 degrees F
- Jacket coolant supply pressure 19 psig
- Generator load current: 550 amps
- Generator voltage: 4250 volts

WHICH ONE (1) of the following signals caused the diesel generator to trip?

- a. Low lube oil pressure.
- b. Low cooling water pressure.
- c. Generator differential overcurrent.
- d. Engine cooling water high temperature.

QUESTION: 029 (1.00)

While at 100% power a trip of a running condensate pump on Unit 3 has occurred. Condensate pump discharge header pressure dropped to 475 psig. WHICH ONE (1) of the following actions should occur in response to these conditions?

- a. The CRD pump suction valve will close.
- b. Recirc pumps will run back to 20%.
- c. The condensate reject control valve will close.
- d. An 85% maximum speed signal will be sent to the running feed pumps.

QUESTION: 030 (1.00)

Unit 2 is operating at approximately 35% reactor power when the following annunciator alarm is received:

- MOIST SEP HI LEVEL TRIP

Assuming the alarm is valid, the main turbine will trip...

- a. immediately and the reactor will scram.
- b. immediately but the reactor will remain on line.
- c. after a 30 second time delay and the reactor will scram.
- d. after a 30 second time delay; the reactor will remain on line.

QUESTION: 031 (1.00)

Unit 3 is operating at power when the following annunciator alarm is received:

- A RECIRC PUMP SEAL STAGE 2 HI-LO FLOW

Other indications on the 3A recirc pump are as follows:

- No. 1 seal pressure 990 psig and steady
- No. 2 seal pressure 785 psig and rising

WHICH ONE (1) of the following is the cause of the alarm?

- a. Failure of the first stage seal.
- b. Failure of the second stage seal.
- c. Plugging of the seal internal orifice.
- d. A loss of seal purge flow.

QUESTION: 032 (1.00)

While operating at 100% power a valid high steam line flow was sensed in the "A" main steam line only. WHICH ONE (1) of the following is the expected MSIV response?

- a. All MSIVs will close.
- b. Only the MSIVs in main steam line 'A' will close.
- c. Only the inboard MSIV in main steam line 'A' will close.
- d. Only the inboard MSIVs in all four main steam lines will close.

QUESTION: 033 (1.00)

A loss of reactor water level control has resulted in a reactor scram on low water level. Reactor water level dropped to - 5 inches before control was reestablished. WHICH ONE (1) of the following isolation valves should have closed?

- a. Main steam line drain valves.
- b. Recirc sample valves.
- c. Drywell equipment drain valves.
- d. RHR sample valves.

QUESTION: 034 (1.00)

The URO has noticed a sudden rise in the A loop drive flow. WHICH ONE (1) of the following indications would be consistent with a jet pump failure?

- a. A rise in core thermal power.
- b. A drop in core plate differential pressure.
- c. A slight rise in recirc pump speed.
- d. An increase in indicated dp on the affected jet pump.

QUESTION: 035 (1.00)

Unit 3 is operating at approximately 80% power when the 'A' Narrow Range reactor water level instrument (which was auto selected for control) fails downscale. Other reactor water level instruments indicate as follows:

- | | |
|--------------------|-------------|
| - 'B' Narrow Range | + 22 inches |
| - 'C' Narrow Range | + 24 inches |
| - 'A' Wide Range | + 15 inches |
| - 'B' Wide Range | + 16 inches |

WHICH ONE (1) of the following describes how the Feedwater Control System will control reactor water level under these conditions?

The Feedwater Control System will ...

- a. use a default value of + 23 inches to control reactor water level.
- b. shift to the 'B' Narrow Range instrument to control reactor water level.
- c. shift to the 'C' Narrow Range instrument to control reactor water level.
- d. use the average of the wide range instrument to control reactor water level.

QUESTION: 036 (1.00)

WHICH ONE (1) of the following describes a condition that will result in the greatest difference between all of the wide range reactor water level instruments and actual reactor water level?

- a. When core flow is less than 10%.
- b. During single loop operations.
- c. When operating at 100% recirc flow.
- d. When the reactor is in Mode 4.

QUESTION: 037 (1.00)

Unit 2 is operating at 80% power when the following annunciator alarm comes in:

- A RECIRC SPEED CONTROL SIGNAL FAIL

Investigation reveals that the recirc pump controller output has failed to zero. WHICH ONE (1) of the following describes how the affected recirc pump should respond to this failure?

- a. The associated scoop tube should lock up and the recirc pump speed should remain the same.
- b. The affected recirc pump should run back to 45% speed.
- c. The affected recirc drive motor breaker should trip open.
- d. The affected recirc pump should run back to minimum speed.

QUESTION: 038 (1.00)

The following conditions exist on the Control Rod Drive Hydraulic System:

- | | |
|---------------------------|------------------------|
| - Drive water pressure | 260 psid |
| - Drive water flow | 0 gpm |
| - Charging water pressure | 1500 psig |
| - Cooling water dp | Upscale high > 60 psid |
| - Cooling water flow | 64 gpm |
| - CRD system flow | 65 gpm |

WHICH ONE (1) of the following describes the possible consequences of operation under these conditions during a CRDH system startup?

- Overheating of the CRD mechanisms.
- CRD pump trip on low flow.
- Inability to move control rods.
- Control rod drifts occurring.

QUESTION: 039 (1.00)

Drywell cooling has been maximized per T-223, "Drywell Cooler Fan Bypass" due to high drywell pressure. Shortly after starting the fans in fast speed a LOCA causes reactor water level to drop below -160 inches. WHICH ONE (1) of the following describes how operation of the drywell cooling fans is affected by this condition?

- The fans will automatically shift to slow speed.
- The fans will remain running in fast speed.
- The fans will stop and cannot be restarted.
- The fans will stop and but can be restarted immediately by using the trip bypass switch.

QUESTION: 040 (1.00)

Unit 2 is operating at 100% power. During the performance of ST-0-020-560-2, "Reactor Coolant Leakage Test", the reactor operator determines that the primary containment unidentified leakage pump out rate changed from 1.5 gpm to 4 gpm over the past 24 hours. Total leakage to the containment is 8 gpm. WHICH ONE (1) of the following describes the status of compliance with the Reactor Coolant System (RCS) Operational Leakage LCO?

The RCS Operational Leakage LCO is ...

- a. Met and plant operation may continue.
- b. Not met due to excessive total unidentified leakage.
- c. Not met due to an excessive increase in unidentified leakage.
- d. Not met due to excessive total leakage from the containment.

QUESTION: 041 (1.00)

While operating at 50% power the following annunciator alarms:

- SAFETY RELIEF VALVE OPEN

WHICH ONE (1) of the following indications confirms that an SRV is open?

- a. Turbine control valves open slightly.
- b. Steam flow - Feed flow mismatch.
- c. Turbine bypass valves opening.
- d. An increase in main turbine exhaust pressure.

QUESTION: 042 (1.00)

Due to a transient condition, T-227, "Defeating RWCU Isolation Interlocks" has been completed and RWCU is being used to control reactor pressure. Approximately fifteen minutes later the following annunciator alarms:

- CLEANUP RECIRC PUMP SUCTION LINE BREAK

WHICH ONE (1) of the following describes how the RWCU will respond?

- a. The RWCU will continue to operate in the recirc mode.
- b. Only the INBD inlet isolation valve (MO-2-12-015) will close.
- c. Only the OUTBD inlet isolation valve (MO-2-12-018) will close.
- d. A full RWCU isolation will occur.

QUESTION: 043 (1.00)

WHICH ONE (1) of the following describes the consequences of a loss of 125 VDC panel 20D2111 on the ADS System?

- a. Channel 'A' of ADS is deenergized; ADS can initiate through Channel 'B'.
- b. Both channels of ADS are deenergized; ADS will not operate under any condition.
- c. Automatic initiation of ADS is defeated; manual ADS initiation is still possible.
- d. Channel 'A' of ADS will automatically shift to its alternate power supply; ADS will function as required.

QUESTION: 044 (1.00)

At 100% power, RCIC is operating in the CST to CST mode with its flow controller in "AUTO". RCIC Turbine speed is 2200 RPM. WHICH ONE (1) of the following will result in raising RCIC Turbine speed?

- a. Opening MO-2-13-27, "RCIC Minimum Flow Valve".
- b. Throttling open MO-2-13-030, "RCIC Full Flow Test Valve".
- c. Placing the RCIC Flow Controller in "MANUAL" then throttling open MO-2-13-030, "RCIC Full Flow Test Valve".
- d. Throttling open MO-2-13-021, "RCIC Feedline Injection".

QUESTION: 045 (1.00)

The Standby Gas Treatment System (SBGT) has automatically started on Unit 3. System operating parameters are as follows:

- SBGT system total flow 5,000 scfm
- Secondary containment dp - 0.1 inches WG

WHICH ONE (1) of the following explains how the SBGT System is operating?

- a. The system is operating normally.
- b. SBGT system total flow is too low.
- c. SBGT system total flow is too high.
- d. Secondary containment dp is not adequate.

QUESTION: 046 (1.00)

Vacuum is lowering on Unit 3. WHICH ONE (1) of the following is an indication of air in-leakage into the main condenser?

- a. A decrease in "Off-Gas Flow" indication.
- b. A decrease in air ejector after condenser outlet pressure.
- c. An increase in Guard Bed differential pressure.
- d. Automatic closure of the recombiner recycle valve.

QUESTION: 047 (1.00)

The following indications and annunciator alarms have been received on Unit 2:

CONTROL ROOM RAD MONITOR DIV I INITIATED
CONTROL ROOM RAD MONITOR DIV II INITIATED
MCR Fresh Air Supply Flow Recorder (FR-0765) indicates 3150 scfm.
MCR Radiation Monitors (RI-0760A/B) Red High Lights are NOT lit.
MCR Radiation Monitors (RI-0760C/D) Red High Lights are lit.

WHICH ONE (1) of the following is the expected status of the Main Control Room Ventilation System? (Assume 2 minutes have passed).

- a. The Control Room Ventilation dampers and fans have shifted to the Purge Mode.
- b. The Control Room Ventilation System has shutdown and isolated.
- c. The selected Control Room Emergency Vent Fan (OAV-30 or OBV-30) should be running.
- d. The Control Room Ventilation dampers and fans are aligned for normal operation.

QUESTION: 048 (1.00)

A LOCA has occurred on Unit 2. The E1 and E3 emergency diesel generators have failed to start. WHICH ONE (1) of the following describes the status of ECCS area cooling?

- a. All ECCS room coolers are being cooled by the Service Water System.
- b. All ECCS room coolers are being cooled by the Emergency Service Water System.
- c. All ECCS room coolers are being supplied by the Emergency Cooling Water System.
- d. The 'A' RHR and 'A' Core Spray room coolers do not have cooling; all other ECCS room coolers are being supplied by the Service Water System.

QUESTION: 049 (1.00)

Unit 2 is in Mode 4. WHICH ONE (1) of the following conditions would require the Secondary Containment to be operable?

- a. The Reactor Building Ventilation System is removed from service.
- b. The SRM's are being removed from the core using the control room controls.
- c. A CRD mechanism is being removed from the vessel.
- d. Both SBT System trains are taken out of service for maintenance.

QUESTION: 050 (1.00)

Unit 3 is operating at steady state 50% power when an EHC malfunction causes a turbine bypass valve to open. WHICH ONE (1) of the following describes how the plant will respond to this event after plant parameters stabilize?

- a. Reactor power will increase; Feedwater heating will increase.
- b. Reactor power will decrease; Feedwater heating will decrease.
- c. Reactor power will decrease; Feedwater heating will increase.
- d. Reactor power will increase; Feedwater heating will decrease.

QUESTION: 051 (1.00)

Unit 2 was operating at 100% power when a LOCA occurred. With the LOCA signal present, the SRO has directed you to open valve MO-38(A) (Torus Spray Valve) to spray the torus. WHICH ONE (1) of the following conditions must be met to allow this valve to be opened?

- a. CTMT SPRAY VLV CONT switch taken to "MANUAL"; Drywell pressure greater than 1 psig; RPV water level above 2/3 core height.
- b. CTMT SPRAY VLV CONT switch left in "OFF"; Drywell pressure greater than 2 psig; RPV water level above 2/3 core height.
- c. CTMT SPRAY VLV CONT switch taken to "MANUAL"; Drywell pressure greater than 1 psig; RPV water level below 2/3 core height.
- d. CTMT SPRAY VLV CONT switch taken to "MANUAL"; Drywell pressure greater than 2 psig; RPV water level above 2/3 core height; MO-39(A) (Supply to Torus) fully closed.

QUESTION: 052 (1.00)

Unit 2 has scrambled on high drywell pressure. Shortly after the scram the following annunciator alarmed:

- E12 BUS UNDERVOLTAGE

Voltage has decreased to 88% of normal and is steady. WHICH ONE (1) of the following describes the response to this condition?

- a. The E-12 bus will transfer to its alternate source if this condition exists for greater than 10 seconds.
- b. The E-12 bus will transfer to its alternate source immediately.
- c. The E-12 bus will remain energized from its normal source since a LOCA signal is present.
- d. The E-12 bus will be completely deenergized if this condition exists for greater than 10 seconds.

QUESTION: 053 (1.00)

Unit 2 is operating at 25% power when the 'A' MSL Radiation Monitor fails upscale. Shortly after the failure a loss of 'B' RPS occurs. WHICH ONE (1) of the following describes the expected plant response?

- a. All MSIVs will close; the reactor will scram.
- b. All MSIVs will remain open; the reactor will scram.
- c. All MSIVs will remain open; a half scram will occur.
- d. Only one MSIV will close; a half scram will occur.

QUESTION: 054 (1.00)

Unit 3 was operating at 100% when a loss of off-site power occurred. Shortly after the loss of power a break in the fire main reduces pressure to 120 psig. WHICH ONE (1) of the following fire pumps will be operating in this condition? (Assume no operator actions taken.)

- a. Only the diesel driven pump.
- b. High pressure lube water pump AND diesel driven pump.
- c. High pressure lube water pump AND motor driven pump.
- d. Motor driven pump and diesel driven pump.

QUESTION: 055 (1.00)

A Traversing In-Core Probe (TIP) trace is in progress when an instrument malfunction causes a spurious Group II D Isolation. WHICH ONE (1) of the following is the expected automatic response of the TIP system?

- a. The TIP Probe will withdraw from the core and the ball valve will close.
- b. The TIP Probe will withdraw from the core and the shear valve will fire.
- c. The TIP Probe will remain in place and the shear valve will fire.
- d. The TIP Probe will withdraw from the core and both the ball valve will close and the shear valve will fire.

QUESTION: 056 (1.00)

Core reload is in progress at CCTAS step 1150 with six (6) new fuel bundles remaining to be loaded into the core into the "B" quadrant. After loading two of the six new fuel bundles, the CCTAS step 1152 reading and the earlier CCTAS step 1150 SRM readings were as follows:

	SRM A	SRM B	SRM C	SRM D
CCTAS 1150	75	100	75	75
CCTAS 1152	90	200	90	90

WHICH ONE (1) of the following states the expected results of loading the remaining bundles? (Assume all 6 bundles have equal reactivity worth.)

- a. One more bundle will cause a local criticality.
- b. Two more bundles will cause a local criticality.
- c. SRM "B" will indicate 400 cps when the core is fully loaded.
- d. SRM "B" will indicate 600 cps when the core is fully loaded.

QUESTION: 057 (1.00)

WHICH one of the following correctly describe interlocks which will prevent an unexpected RPV level decrease while in shutdown cooling?

- a. MO-10-17, "S/D Cooling Outboard" and MO-10-18, "S/D Cooling Inboard" close on low RPV level of 1 inch and high drywell pressure of +2 psig.
MO-10-15A(B)(C)(D), "A(B)(C)(D) S/D Cooling" close on low RPV level of 1 inch and high drywell pressure of +2 psig.
- b. MO-10-17, "S/D Cooling Outboard" and MO-10-18, "S/D Cooling Inboard" close on low RPV level of 1 inch and high drywell pressure of +2 psig.
MO-10-15A(B)(C)(D), "A(B)(C)(D) S/D Cooling" have no auto close signals.
- c. MO-10-17, "S/D Cooling Outboard" and MO-10-18, "S/D Cooling Inboard" close on low RPV level of 1 inch but not on high drywell pressure of +2 psig.
MO-10-15A(B)(C)(D), "A(B)(C)(D) S/D Cooling" close on low RPV level of 1 inch but not on high drywell pressure of +2 psig.
- d. MO-10-17, "S/D Cooling Outboard" and MO-10-18, "S/D Cooling Inboard" close on low RPV level of 1 inch but not on high drywell pressure of +2 psig.
MO-10-15A(B)(C)(D), "A(B)(C)(D) S/D Cooling" have no auto close signals.

QUESTION: 058 (1.00)

Given the following core information at Peach Bottom Unit #2:

- | | |
|------------|--|
| Quadrant A | SRM A reads 8 cps; 50% of the fuel bundles are removed. |
| Quadrant B | A special movable detector connected to the normal SRM B circuit reads 4 cps; 60% of the fuel bundles are removed. |
| Quadrant C | SRM C reads 10 cps; 50% of the fuel bundles are removed. |
| Quadrant D | SRM D reads 2 cps; all fuel has been removed from the quadrant except 2 bundles adjacent the SRM. |

Assuming the Signal to Noise Ratio for all detectors is 2.1, WHICH ONE (1) of the following is correct regarding the operability of the SRM instruments?

- a. NO SRMs are operable.
- b. ALL SRMs are operable.
- c. SRMs A, B and C are operable, SRM D is inoperable.
- d. SRMs A, C and D are operable, SRM B is inoperable.

QUESTION: 059 (1.00)

WHICH ONE (1) of the following systems is used to provide cooling to the Fuel Pool Cooling Heat Exchangers in the event of a loss of Service Water?

- a. RHR System
- b. HPSW System
- c. ESW System
- d. RBCCW System

QUESTION: 060 (1.00)

A complete loss of 125 VDC to the EHC cabinet has occurred. WHICH ONE (1) of the following describes how plant operation is affected?

- a. The main turbine will trip.
- b. The main turbine will remain on line; the turbine can only be tripped at the front standard.
- c. The main turbine will remain on line; the EHC cabinet will automatically transfer to its alternate power source.
- d. The main turbine will remain on line; the turbine can only be tripped at the front standard or by using the manual trip pushbutton.

QUESTION: 061 (1.00)

Unit 2 is at 90% power with the Drywell Chilled Water System (DWCW) aligned as follows:

- 'A' and 'B' Drywell Chilled Water Pumps running; 'C' in standby.
- 'A' and 'B' Drywell Chillers running; 'C' in standby.

The No. 2 Auxiliary Bus becomes deenergized. WHICH ONE (1) of the following explains how the DWCW System will be affected? (Assume no operator actions are taken).

- a. RBCCW will automatically align to the DWCW System and supply all RBCCW and DWCW System loads.
- b. RBCCW will automatically align to the DWCW System; non-essential RBCCW loads will isolate.
- c. Both the 'A' and 'B' Drywell Chilled Water Pumps will trip; the 'C' Drywell Chilled Water Pump will auto start.
- d. The 'A' Drywell Chilled Water Pump will remain running; the 'B' Drywell Chilled Water Pump will trip; the 'C' Drywell Chilled Water Pump will auto start.

QUESTION: 062 (1.00)

A Unit 3 startup is in progress with reactor power at 1% and all MSIVs are open. WHICH ONE (1) of the following actions would occur if a complete loss of both divisions of the 24 VDC power system?

- a. Both recirc pumps would trip.
- b. All EDGs will auto start.
- c. The MSIVs would close.
- d. The reactor would scram.

QUESTION: 063 (1.00)

WHICH ONE (1) of the following explains how the CRD System will respond to a loss of instrument air?

- a. The scram discharge volume vent and drain valves will fail open.
- b. The CRD drive water pressure control valve will fail closed.
- c. The CRD flow control valve will fail closed.
- d. The CRD suction valve from the CST will fail open.

QUESTION: 064 (1.00)

Unit 2 conditions are as follows:

- Reactor is scrammed, all rods are in.
- RPV water level is - 45 inches and lowering.
- RPV pressure is 800 psig and lowering.
- Drywell pressure is 4 psig and rising.
- Torus spray is in service using the 'A' RHR pump per T-203.
"Initiation of Torus Sprays Using RHR".

WHICH ONE (1) of the following describes how the torus spray lineup will be affected if these conditions continue?

The torus spray valves will ...

- a. automatically close when reactor pressure drops below 450 psig.
- b. automatically close when reactor water level decreases to - 160 inches.
- c. automatically close when reactor water level decreases to below 2/3 core height.
- d. remain open until closed by the operator.

QUESTION: 065 (1.00)

The following annunciator has alarmed on Unit 2:

- INVERTER TROUBLE

WHICH ONE (1) of the following indications would confirm that panel 20Y050 has deenergized?

- a. Recirc pumps run back to 45% speed.
- b. 'A' and 'C' Narrow Range level instrument fail upscale.
- c. Reactor Feed Pumps run back to 85% speed.
- d. Control rod position indication is lost.

QUESTION: 066 (1.00)

A loss of all shutdown cooling has occurred in Mode 4. AO 10.12-2, "Alternate Shutdown Cooling" has been entered. WHICH ONE (1) of the following systems is used to remove the heat being generated in the reactor?

- a. Fuel Pool Cooling heat exchangers.
- b. RBCCW
- c. Emergency Service Water
- d. High Pressure Service Water

QUESTION: 067 (1.00)

A loss of a reactor feed water pump on Unit 2 has occurred. Reactor water level is +20 inches and lowering slowly. The URO is reducing recirc flow per GP-9-2, "Fast Reactor Power Reduction" when the following annunciator alarms:

- APRM HIGH

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

- a. Stop reducing recirc flow and manually insert control rods per GP-9-2 Appendix 1.
- b. Stop reducing recirc flow and manually scram the reactor.
- c. Continue reducing recirc flow until minimum speed is reached.
- d. Trip the recirc pumps then manually scram the reactor.

QUESTION: 068 (1.00)

A loss of shutdown cooling has occurred. WHICH ONE (1) of the following is the MINIMUM reactor water level that will promote natural circulation?

- a. + 30 inches as read on the Narrow Range instruments.
- b. + 50 inches as read on LI-86 (Refuel Range).
- c. + 60 inches as read in LI-85 (Wide Range).
- d. + 50 inches as read on the Narrow Range instruments

QUESTION: 069 (1.00)

Unit 3 is operating at approximately 90% power when the PRO recognizes that main condenser vacuum is decreasing slowly. WHICH ONE (1) of the following conditions could be the cause for the lowering vacuum?

- a. SJAЕ supply pressure is 95 psig.
- b. Seal steam header pressure is 1.0 psig.
- c. Auxiliary Steam System pressure is 200 psig.
- d. Circ water pump bay level is 110 feet.

QUESTION: 070 (1.00)

During a GP-3 shutdown following a transfer of house loads, a loss of level control on Unit 2 has resulted in reactor water level reaching + 60 inches and is rising very slowly. WHICH ONE (1) of the following automatic actions should have occurred?

- a. Both recirc pumps trip.
- b. All condensate pumps trip.
- c. A HPCI turbine trip.
- d. RCIC steam line isolation valves (MO-15,16) close.

QUESTION: 071 (1.00)

Unit 2 is operating at 60% power with a HPCI surveillance in progress. SPOTMOS temperature indicates 95 degrees F. The following annunciator alarm is received:

- SAFETY RELIEF VALVE OPEN

WHICH ONE (1) of the following describes when the crew is required to initiate a manual reactor scram?

- a. When Torus temperature reaches 105 degrees F.
- b. When Torus temperature exceeds 110 degrees F.
- c. Immediately after verifying that an SRV is open..
- d. After exhausting all attempts to close the SRV.

QUESTION: 072 (1.00)

An EHC failure has resulted in reactor pressure increasing to 1090 psig but the reactor did NOT scram. In response to the failure to scram the URO manually initiated the Alternate Rod Insertion (ARI) System and all control rods inserted.

WHICH ONE (1) of the following describes how the reactor recirc pumps will respond to a manual initiation of ARI?

- a. The recirc pumps will trip.
- b. The recirc pumps will run back to minimum speed.
- c. The recirculation pumps will remain running at their present speed with the scoop tubes locked up.
- d. The recirculation pumps will remain running at their present speed with the scoop tubes operational.

QUESTION: 073 (1.00)

T-101, "RPV Control" has been entered on high reactor pressure. The MSIVs are closed and SRVs are cycling. The SRO has directed the PRO to control reactor pressure between 950 and 1050 psig using SRVs. WHICH ONE (1) of the following is the reason for stabilizing reactor pressure below 1050 psig?

- a. To allow the scram logic to be reset.
- b. To minimize the inventory lost from the reactor.
- c. To maintain operability of reactor water level instruments.
- d. To maintain cooldown rate below 100 degrees F per hour.

QUESTION: 074 (1.00)

An automatic reactor scram has occurred. All control rods were full out prior to the scram. Two of the control rods did NOT fully insert. One control rod is at position 04 and the other control rod is at position 08. All scram solenoids have deenergized and all scram valves have opened.

WHICH ONE (1) of the following methods of control rod insertion would be the most likely to be effective for inserting these rods?

- a. Use the individual scram test switches.
- b. Vent the scram air header.
- c. Raise CRD drive water pressure and manually drive in the control rods.
- d. Initiate the ARI System.

QUESTION: 075 (1.00)

WHICH ONE (1) of the following conditions would require entry into T-104, "Radioactivity Release"?

- a. When any off-site radiological release is occurring.
- b. Whenever a main steam line break outside the containment has been confirmed.
- c. When the off-site gaseous radiological release rate exceeds the Unusual Event Emergency Action Level.
- d. Whenever a primary system is discharging into the secondary containment.

QUESTION: 076 (1.00)

T-104, "Radioactivity Release", has been entered. The Turbine Building Ventilation System has been restarted? WHICH ONE (1) of the following is reason for restarting the ventilation system?

- a. To maintain negative pressure in the Turbine Building.
- b. To prevent an unmonitored radiation release to the environment.
- c. To provide a filtered release path to the environment.
- d. To assure maximum safe temperature limits are not reached.

QUESTION: 077 (1.00)

WHICH ONE (1) of the following plant conditions requires entry into T-103, "Secondary Containment Control"?

- a. Excessive input causes the Reactor Building Floor Drain Sump HI-HI level alarm to come in.
- b. Excessive input causes the Turbine Building Floor Drain Sump HI-HI level alarm to come in.
- c. Reactor Building differential pressure is 0 inches of water.
- d. Reactor Building Refuel Floor differential pressure is -.25 inches of water.

QUESTION: 078 (1.00)

A loss of drywell cooling occurs. Drywell Pressure increases to 3.2 psig and Drywell Bulk Average Temperature increases to 145 degrees F.

WHICH ONE (1) of the following identifies the Trip Procedures that should be entered.

- a. T-101, "RPV Control" only.
- b. T-102, "Primary Containment Control" only.
- c. T-101, "RPV Control", AND T-102, Primary Containment Control.
- d. T-102, "Primary Containment Control", AND T-103, "Secondary Containment Control".

QUESTION: 079 (1.00)

WHICH ONE (1) of the following is the lowest RPV water level at which the core can be adequately cooled by Steam Cooling with NO injection?

- a. -160 inches
- b. -200 inches
- c. -210 inches
- d. -240 inches

QUESTION: 080 (1.00)

A failure to scram has occurred and reactor power is approximately 35%. WHICH ONE (1) of the following would be the consequence of tripping the reactor recirc pumps above minimum speed?

- a. A turbine trip on high reactor water level.
- b. A loss of turbine bypass valves.
- c. Reactor pressure exceeding the SRV lifting setpoints.
- d. A Group II isolation may occur.

QUESTION: 081 (1.00)

Unit 2 power is 70% when a control rod at position 24 starts to drift out. WHICH ONE (1) of the following actions should be taken?

- a. Momentarily turn off RMCS power.
- b. Give the control rod a momentary insert signal.
- c. Drive the control rod in to its original position.
- d. Fully insert the control rod using EMERG IN.

QUESTION: 082 (1.00)

An ATWS has occurred and SRVs are being used to control pressure. WHICH ONE (1) of the following describes conditions where the Heat Capacity Temperature Limit is being approached?

- a. Reactor pressure decreasing; Torus temperature steady; Drywell temperature increasing.
- b. Torus pressure decreasing; Torus temperature decreasing; Torus level increasing.
- c. Reactor pressure increasing; Torus temperature increasing; Torus level steady.
- d. Reactor pressure steady; Drywell temperature steady; Torus level increasing.

QUESTION: 083 (1.00)

An ATWS has occurred on Unit 3. The URO is implementing T-220-3, "Driving Control Rods During Failure To Scram". WHICH ONE (1) of the following explains why the Charging Water Hdr Blk Valve (HV-3-56) is closed?

To increase the ...

- a. rate at which the CRD Over-piston area vents.
- b. rate at which the scram discharge volume drains.
- c. rate at which the CRD accumulators repressurize.
- d. CRD flow to the drive water header for driving in control rods.

QUESTION: 084 (1.00)

A transient on Unit 2 has resulted in a rupture of the torus causing torus level to decrease. Plant conditions are as follows:

- Reactor power 0% (all rods inserted)
- Reactor pressure 800 psig and decreasing
- Torus level 10.5 feet, dropping slowly
- Torus pressure 3.5 psig
- Torus temperature 90 degrees F

WHICH ONE (1) of the following statements describes the effect that this torus water level will have on plant operations?

- a. RHR and Core Spray pumps cannot be run due to cavitation concerns on low suction pressure.
- b. HPCI can only be operated if it is aligned to the CST.
- c. The SRVs may be damaged during operation due to water backing up into the discharge piping.
- d. The reactor should undergo an emergency blowdown since the drywell downcomers may become uncovered.

QUESTION: 085 (1.00)

WHICH ONE (1) of the following describes the consequences of operating with torus level above the SRV Tailpipe Limit Curve?

- a. The SRV tailpipe could fail during actuation.
- b. The SRV would not open if required.
- c. The SRV tailpipe discharge is uncovered.
- d. The SRV lifting setpoint will be higher than normal.

QUESTION: 086 (1.00)

Evacuation of the main control room is required due to toxic gas. WHICH ONE (1) of the following describes operator actions that should be taken (if possible) prior to evacuating the control room?

- a. Trip all recirc pumps.
- b. Initiate RCIC.
- c. Open all turbine bypass valves.
- d. Place torus cooling in service.

QUESTION: 087 (1.00)

Torus sprays have been placed in service due to high drywell temperature. WHICH ONE (1) of the following explains why torus sprays have to be secured if torus pressure drops below 2 psig?

- a. To prevent exceeding the Torus-to-Drywell vacuum breaker capacity.
- b. To prevent operation of the Reactor Building-to-Torus vacuum breakers.
- c. To prevent exceeding the drywell downcomer differential pressure limits.
- d. To prevent runout of the RHR pump.

QUESTION: 088 (1.00)

WHICH ONE (1) of the following describes how the lock and chain should be left when a manually locked valve is unlocked?

- a. The chain is wrapped around the pipe next to the valve with the lock being in the locked condition.
- b. The chain is looped through the valve handwheel so as not to obstruct valve movement with the lock in the locked condition.
- c. The chain is wrapped around the valve yoke with the lock in the unlocked condition.
- d. The chain is looped through the valve yoke with the lock in the unlocked condition.

QUESTION: 089 (1.00)

WHICH ONE (1) of the following conditions will permit a procedure change to be processed via a Temporary-Change (TC)?

The procedure change ...

- a. will eliminate QV hold points.
- b. corrects a procedure error and time constraints prevent processing a procedure revision.
- c. will change the scope of the procedure and time constraints prevent delay of the performance of the procedure.
- d. eliminates the acceptance criteria of a surveillance test but the affected system is still operable per Technical Specifications.

QUESTION: 090 (1.00)

The Unit 2 RO is collecting data for a required surveillance. One of the "black box" steps cannot be completed because the instrument associated with the data collection is inoperable. All other data taken was normal. WHICH ONE (1) of the following describes the action(s) that should be taken?

- a. Record the as found data; declare the system operable; initiate maintenance on the inoperable instrument.
- b. Request engineering to make a operability determination on the system.
- c. Notify shift management and sign off the surveillance as unsatisfactory.
- d. Record the instrument data as Out-of-Service; declare the system operable; initiate maintenance on the inoperable instrument.

QUESTION: 091 (1.00)

WHICH ONE (1) of the following is the lowest level of authority that may authorize radiation exposures in excess of 10CFR20 limits during an event requiring the activation of the TSC?

- a. Emergency Response Manager
- b. Plant Manager
- c. Dose Assessment Advisor
- d. Emergency Director

QUESTION: 092 (1.00)

WHICH ONE (1) of the following conditions must be met to allow the URO to be temporarily relieved of his duties while both units are operating at full power?

- a. There must be a minimum of two licensed operators (ROs) in the Main Control Room.
- b. The relieving RO must be briefed by the Shift Manager.
- c. The temporary relief period is expected to be less than one hour.
- d. If the relieving RO was not at the Shift Turnover Meeting, the temporary relief must be documented in the Narrative Log.

QUESTION: 093 (1.00)

An individual has just come on shift and has a current exposure of 1500 mrem TEDE. WHICH ONE (1) of the following is the maximum additional TEDE dose he/she is allowed to receive without obtaining a dose extension?

- a. 1500 mrem TEDE
- b. 2500 mrem TEDE
- c. 3000 mrem TEDE
- d. 3500 mrem TEDE

QUESTION: 094 (1.00)

In the Main Control Room, during full power operations, an annunciator continues to alarm due to corrective maintenance associated with a corresponding system. The maintenance is scheduled to be completed at the end of the next shift. WHICH ONE (1) of the following actions could be taken?

- a. Remove the annunciator can and reinsert the can in an inverted position as authorized by the Engineering Duty Manager.
- b. Place the annunciator mode switch to manual as authorized by Shift Management and initiate an EST.
- c. For Process Computer associated alarms obtain the System Engineers permission to delete the alarm during the maintenance period.
- d. With the Shift Supervisor permission place a red triangle on the alarm window and make the appropriate EDL entry.

QUESTION: 095 (1.00)

WHICH ONE (1) of the following describes the indication that will satisfy Independent Verification (IV) that an excess flow check valve is in the normal position?

- a. Red light is on.
- b. White light is on.
- c. Green light is on.
- d. No lights are on.

QUESTION: 096 (1.00)

During a plant startup, a licensed control room operator assisting with the startup in the Main Control Room has worked the following hours excluding turnover time:

Friday	1600 to 0400
Saturday	1200 to 2400
Sunday	1000 to 1600
Monday	0700 to 1500
Tuesday	0900 to 2300
Wednesday	0800 to 1700

WHICH ONE (1) of the following statements below identifies the violations of the overtime guidelines?

- a. The operator worked more than 16 hours in 48.
- b. The operator worked more than 16 hours in 24.
- c. The operator worked more than 12 hours in 24.
- d. The operator worked more than 24 hours in 48.

QUESTION: 097 (1.00)

Technical Specifications sets limits on chlorides in the reactor coolant system. WHICH ONE (1) of the following describes the basis for this limit?

- a. Chlorides increase the formation of insoluble metallic corrosion products.
- b. Chlorides increase galvanic corrosion at dissimilar metal junctions.
- c. Chlorides catalyze the oxidation of carbon steel.
- d. Chlorides contribute to stress cracking of the stainless steel.

QUESTION: 098 (1.00)

WHICH ONE (1) of the following describes the function of Check-Off Lists (COLs)?

- a. COLs must be performed to ensure system readiness prior to operation.
- b. COLs are performed to align a system so that a specific task can be performed.
- c. COLs are used to verify the adequacy of a system Clearance.
- d. COLs are used to verify a system is operable per Technical Specifications.

QUESTION: 099 (1.00)

WHICH ONE (1) of the following describes the main control room instrumentation that is backed by DC power?

- a. Red tags with white lettering.
- b. Yellow tags with black lettering.
- c. Black tags with yellow lettering.
- d. White tags with red lettering.

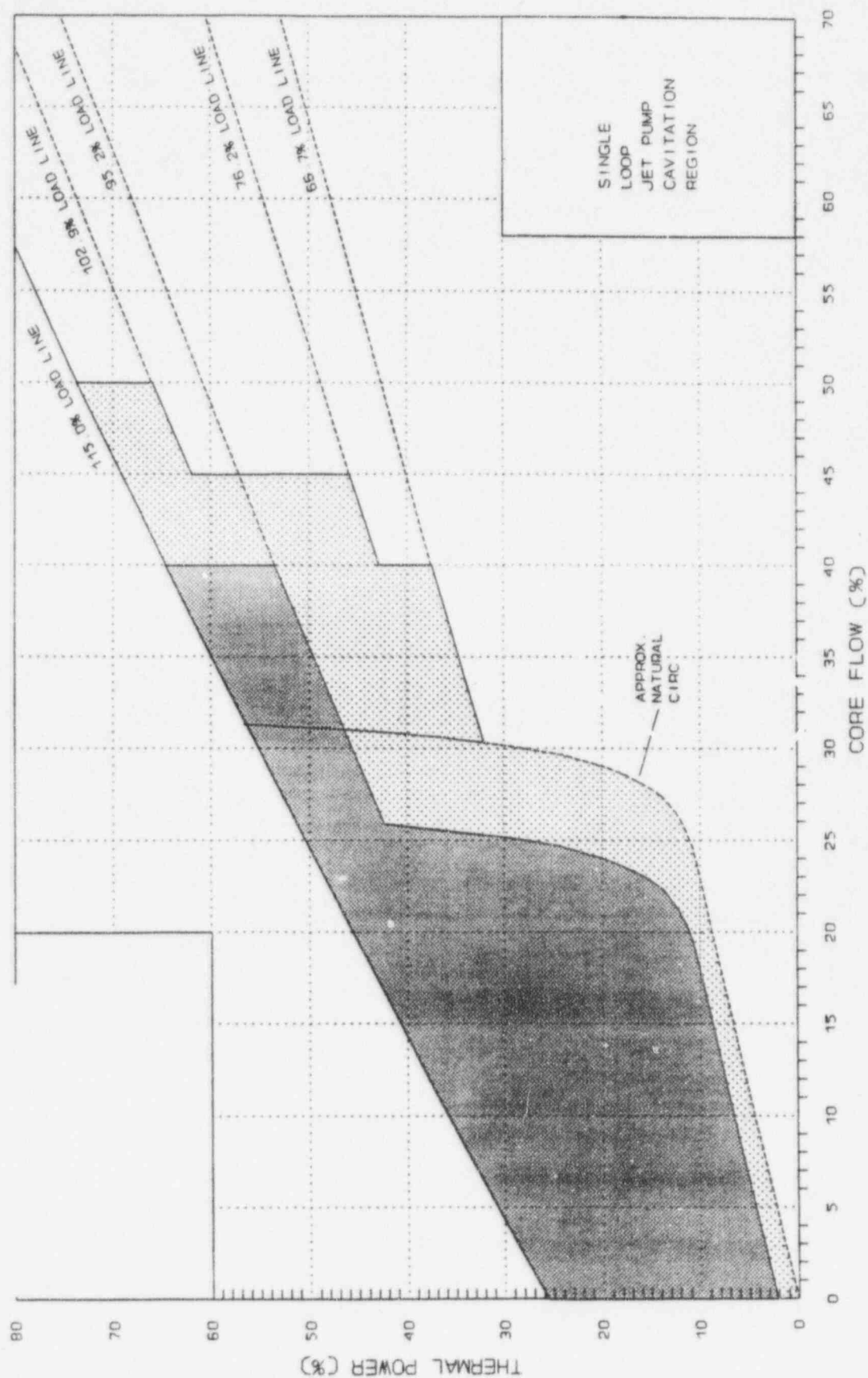
QUESTION: 100 (1.00)

WHICH ONE (1) of the following correctly describes the storage of transient combustible materials? Transient combustible materials:

- a. cannot be stored in the control room.
- b. cannot be stored in the protected area.
- c. can be stored in the plant areas in closed metal containers.
- d. can be stored in stairwell enclosures in closed metal containers.

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

PBAPS POWER FLOW OPERATION MAP



3.3 INSTRUMENTATION

3.3.1.2 Source Range Monitor (SRM) Instrumentation

LCO 3.3.1.2 The SRM instrumentation in Table 3.3.1.2-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.1.2-1.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required SRMs inoperable in MODE 2 with intermediate range monitors (IRMs) on Range 2 or below.	A.1 Restore required SRMs to OPERABLE status.	4 hours
B. Three required SRMs inoperable in MODE 2 with IRMs on Range 2 or below.	B.1 Suspend control rod withdrawal.	Immediately
C. Required Action and associated Completion Time of Condition A or B not met.	C.1 Be in MODE 3.	12 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. One or more required SRMs inoperable in MODE 3 or 4.	D.1 Fully insert all insertable control rods.	1 hour
	<u>AND</u> D.2 Place reactor mode switch in the shutdown position.	1 hour
E. One or more required SRMs inoperable in MODE 5.	E.1 Suspend CORE ALTERATIONS except for control rod insertion.	Immediately
	<u>AND</u> E.2 Initiate action to fully insert all insertable control rods in core cells containing one or more fuel assemblies.	Immediately

SURVEILLANCE REQUIREMENTS

-----NOTE-----
Refer to Table 3.3.1.2-1 to determine which SRs apply for each applicable MODE or other specified conditions.

SURVEILLANCE	FREQUENCY
SR 3.3.1.2.1 Perform CHANNEL CHECK.	12 hours

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.3.1.2.2 -----NOTES-----</p> <ol style="list-style-type: none"> 1. Only required to be met during CORE ALTERATIONS. 2. One SRM may be used to satisfy more than one of the following. <p>-----</p> <p>Verify an OPERABLE SRM detector is located in:</p> <ol style="list-style-type: none"> a. The fueled region; b. The core quadrant where CORE ALTERATIONS are being performed, when the associated SRM is included in the fueled region; and c. A core quadrant adjacent to where CORE ALTERATIONS are being performed, when the associated SRM is included in the fueled region. 	<p>12 hours</p>
<p>SR 3.3.1.2.3 Perform CHANNEL CHECK.</p>	<p>24 hours</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.3.1.2.4 -----NOTES-----</p> <ol style="list-style-type: none">1. Not required to be met with less than or equal to four fuel assemblies adjacent to the SRM and no other fuel assemblies in the associated core quadrant.2. Not required to be met during spiral unloading. <p>-----</p> <p>Verify count rate is:</p> <ol style="list-style-type: none">a. ≥ 3.0 cps; orb. Within the limits of Figure 3.3.1.2-1.	<p>12 hours during CORE ALTERATIONS</p> <p><u>AND</u></p> <p>24 hours</p>
<p>SR 3.3.1.2.5 Perform CHANNEL FUNCTIONAL TEST and determination of signal to noise ratio.</p>	<p>7 days</p>
<p>SR 3.3.1.2.6 -----NOTE-----</p> <p>Not required to be performed until 12 hours after IRMs on Range 2 or below.</p> <p>-----</p> <p>Perform CHANNEL FUNCTIONAL TEST and determination of signal to noise ratio.</p>	<p>31 days</p>
<p>SR 3.3.1.2.7 -----NOTES-----</p> <ol style="list-style-type: none">1. Neutron detectors are excluded.2. Not required to be performed until 12 hours after IRMs on Range 2 or below. <p>-----</p> <p>Perform CHANNEL CALIBRATION.</p>	<p>184 days</p>

Table 3.3.1.2-1 (page 1 of 1)
Source Range Monitor Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	SURVEILLANCE REQUIREMENTS
1. Source Range Monitor	2(a)	3	SR 3.3.1.2.1
			SR 3.3.1.2.4
			SR 3.3.1.2.6
			SR 3.3.1.2.7
	3,4	2	SR 3.3.1.2.3
			SR 3.3.1.2.4
			SR 3.3.1.2.6
			SR 3.3.1.2.7
	5	2(b)(c)	SR 3.3.1.2.1
			SR 3.3.1.2.2
			SR 3.3.1.2.4
			SR 3.3.1.2.5
			SR 3.3.1.2.7

(a) With IRMs on Range 2 or below.

(b) Only one SRM channel is required to be OPERABLE during spiral offload or reload when the fueled region includes only that SRM detector.

(c) Special movable detectors may be used in place of SRMs if connected to normal SRM circuits.

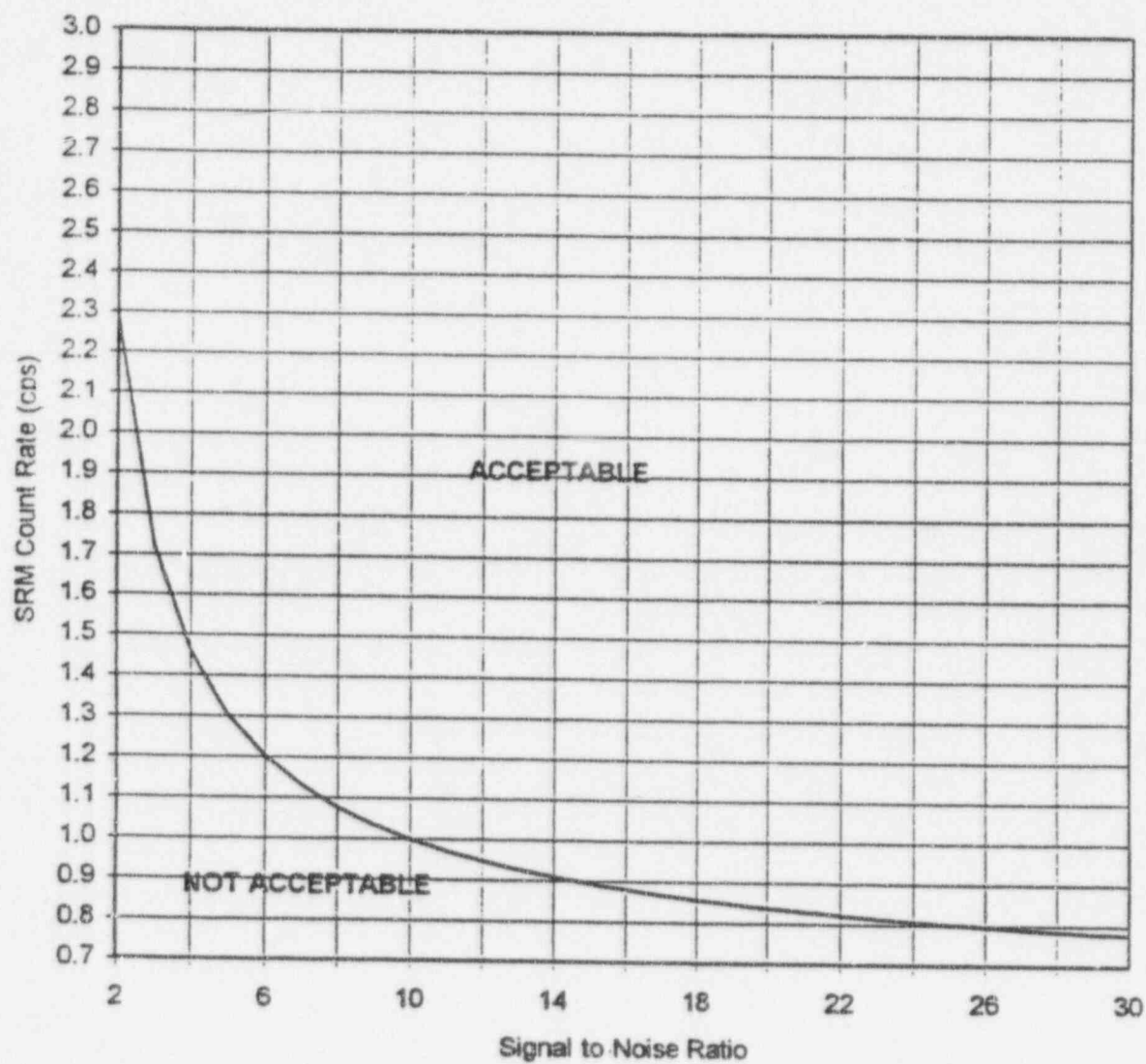


Figure 3.3.1.2-1 (page 1 of 1)
Minimum SRM Count Rate Versus Signal to Noise Ratio

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.9 RCS Pressure and Temperature (P/T) Limits

LCO 3.4.9 RCS pressure, RCS temperature, RCS heatup and cooldown rates, and the recirculation pump starting temperature requirements shall be maintained within limits.

APPLICABILITY: At all times.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. -----NOTE----- Required Action A.2 shall be completed if this Condition is entered. ----- Requirements of the LCO not met in MODE 1, 2, or 3.	A.1 Restore parameter(s) to within limits.	30 minutes
	AND A.2 Determine RCS is acceptable for continued operation.	72 hours
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 3.	12 hours
	AND B.2 Be in MODE 4.	36 hours

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.4.9.2 Verify RCS pressure and RCS temperature are within the criticality limits specified in Figure 3.4.9-3.</p>	<p>Once within 15 minutes prior to control rod withdrawal for the purpose of achieving criticality</p>
<p>SR 3.4.9.3 -----NOTE----- Only required to be met in MODES 1, 2, 3, and 4 during recirculation pump start. ----- Verify the difference between the bottom head coolant temperature and the reactor pressure vessel (RPV) coolant temperature is $\leq 145^{\circ}\text{F}$.</p>	<p>Once within 15 minutes prior to each startup of a recirculation pump</p>
<p>SR 3.4.9.4 -----NOTE----- Only required to be met in MODES 1, 2, 3, and 4 during recirculation pump start. ----- Verify the difference between the reactor coolant temperature in the recirculation loop to be started and the RPV coolant temperature is $\leq 50^{\circ}\text{F}$.</p>	<p>Once within 15 minutes prior to each startup of a recirculation pump</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.4.9.5 -----NOTE----- Only required to be performed when tensioning the reactor vessel head bolting studs. -----</p> <p>Verify reactor vessel flange and head flange temperatures are > 70°F.</p>	30 minutes
<p>SR 3.4.9.6 -----NOTE----- Not required to be performed until 30 minutes after RCS temperature ≤ 80°F in MODE 4. -----</p> <p>Verify reactor vessel flange and head flange temperatures are > 70°F.</p>	30 minutes
<p>SR 3.4.9.7 -----NOTE----- Not required to be performed until 12 hours after RCS temperature ≤ 100°F in MODE 4. -----</p> <p>Verify reactor vessel flange and head flange temperatures are > 70°F.</p>	12 hours

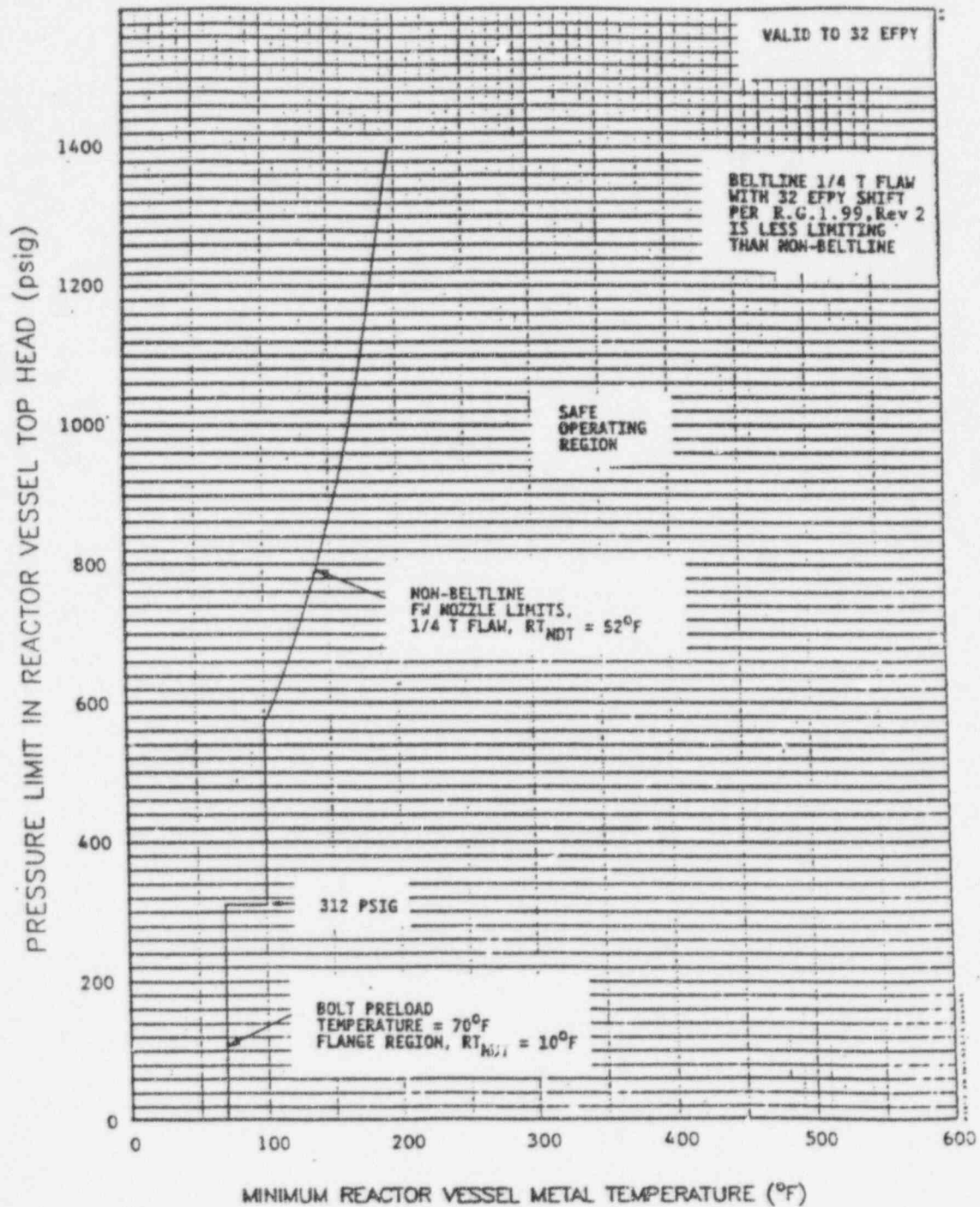


Figure 3.4.9-1 (page 1 of 1)

Temperature/Pressure Limits for
Inservice Hydrostatic and Inservice Leakage Tests

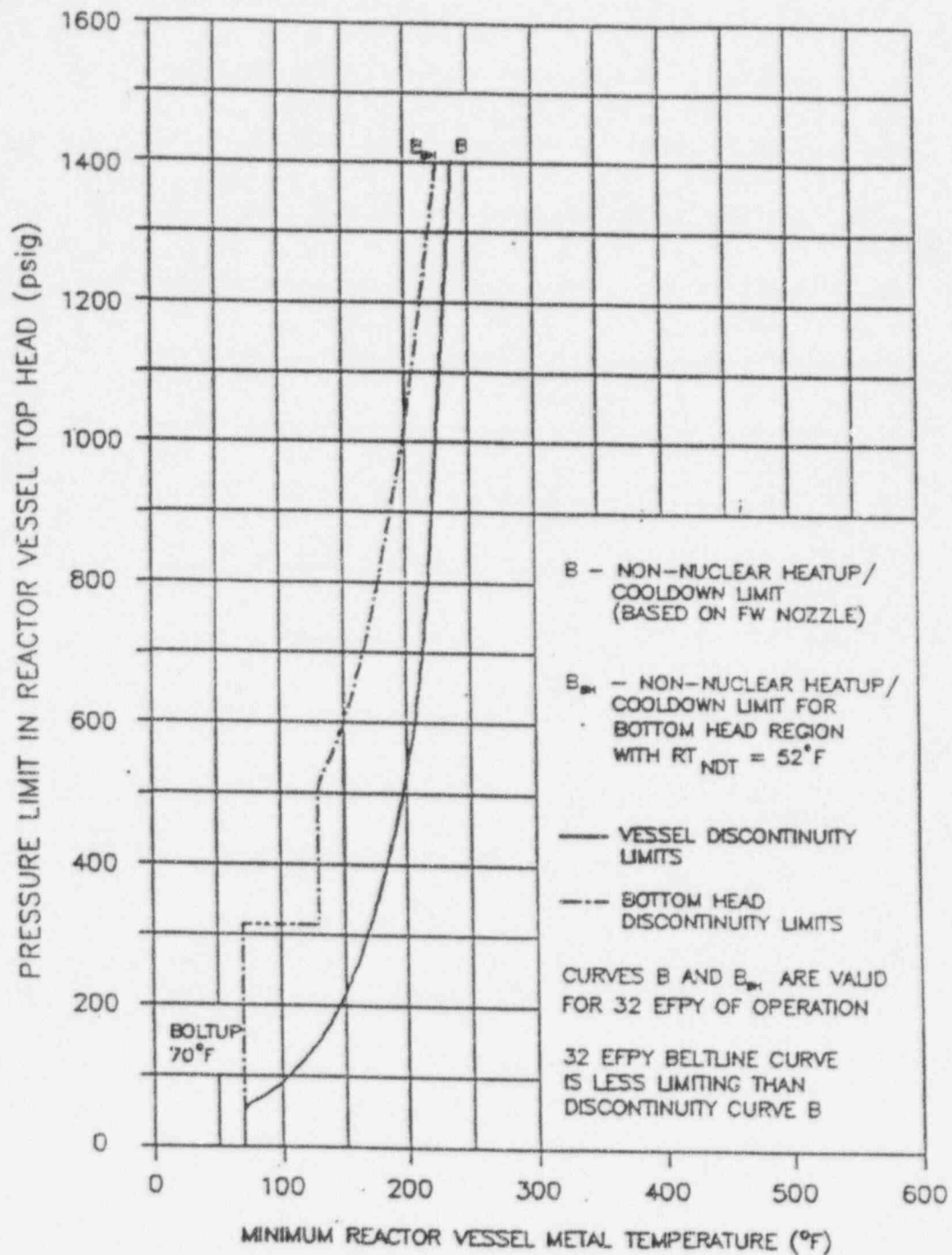


Figure 3.4.9-2 (page 1 of 1)

Temperature/Pressure Limits for
Non-Nuclear Heatup and Cooldown Following a Shutdown

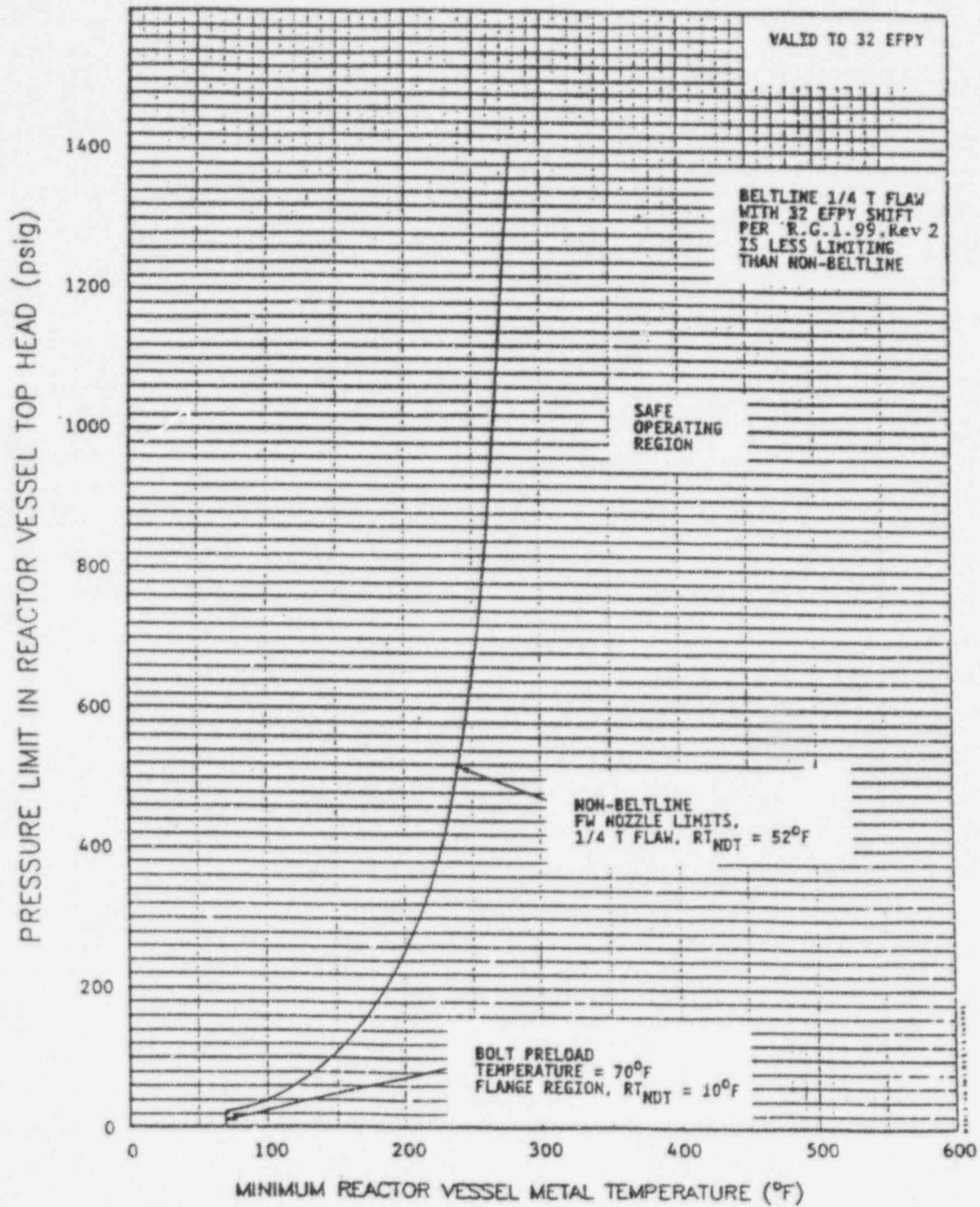
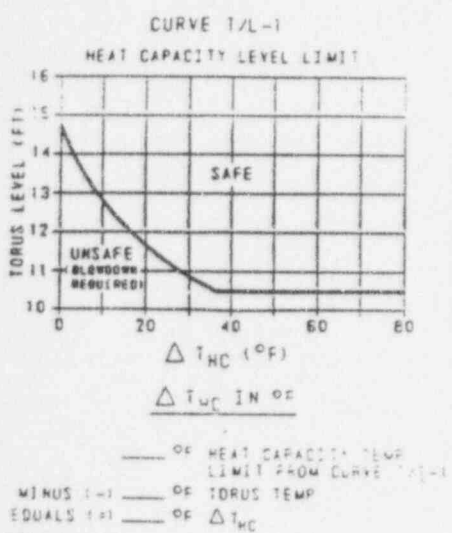


Figure 3.4.9-3 (page 1 of 1)

Temperature/Pressure Limits for Criticality



ANSWER KEY

MULTIPLE CHOICE

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

ANSWER KEY

046 c
047 d
048 a
049 c
050 d
051 a
052 b
053 a
054 a
055 a
056 b
057 b
058 b
059 d
060 ~~c~~ a
061 b
062 d
063 c
064 d
065 d
066 d
067 a
068 b

069 a
070 c
071 c
072 d
073 a
074 c
075 c
076 b
077 a
078 c
079 c
080 a
081 d
082 c
083 d
084 d
085 a
086 d
087 b
088 a
089 b
090 c
091 d

ANSWER KEY

092 c

093 a

094 ~~a~~ b

095 a

096 d

097 d

098 b

099 b

100 c

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

ATTACHMENT 3

SIMULATION FACILITY REPORT

Facility Licensee: Peach Bottom Units 2 & 3

Facility Docket Nos: 50-277 & 278

Operating Tests Administered from: September 16-20, 1996

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

None