U.S. NUCLEAR REGULATORY COMMISSION
REGION I
OPERATOR LICENSING EXAMINATION REPORT

EXAMINATION REPORT NO. 50-423/92-12 (OL)

FACILITY LICENSE NO. NPF-49

LICENSEE: Northeast Nuclear Energy Company
P. O. Box 270
Hartford, Connecticut 06141-0270

FACILITY: Millstone Nuclear Power Station, Unit 3

EXAMINATION DATES: April 23 - 30, 1992

CHIEF EXAMINER: James A. Pulk for
David Silk, Senior Operations Engineer — 5.26.92 Date

APPROVED BY: Paul Bissett — 5/26/92 Date
Paul Bissett, Acting Chief
PWR Section, Operations Branch
Division of Reactor Safety

SUMMARY:

Initial examinations were administered to four RO and two SRO upgrade candidates. All candidates passed the examination and were issued licenses. Several generic weaknesses were noted from the grading of the examinations, as noted in Sections 3.0 and 4.0. Based upon observation of the simulator examinations, it was noted that crew communications and team work was strong. Also, during this examination, four open items were closed from EOP Team Inspection Report No. 90-80, as documented in Section 5.0. No safety significant deficiencies were identified during this examination and inspection follow-up.

DETAILS

TYPE OF EXAMINATIONS: Initial

EXAMINATION RESULTS:

	RO Pass/Fail	SRO Pass/Fail	TOTAL Pass/Fail
Written	4/0	2/0	6/0
Simulator	4/0	2/0	6/0
Walk-through	4/0	2/0	6/0
Overall	4/0	2/0	6/0

1.0 **NRC PERSONNEL ON SITE**:

David M. Silk, Senior Operations Engineer (Chief Examiner)
Paul H. Bissett, Senior Operations Engineer

Other Examiners:
Tim Guilfoil (Sonalyst Inc.)

2.0 **PREEXAMINATION ACTIVITIES**:

The reference material requested for this examination was received in a timely manner by both the NRC and its contractors. The material submitted was adequate for examination development.

Prior to the examination, licensee personnel reviewed the written and operating examinations. The licensee reviewers signed security agreements prior to commencing the review. The examinations were reviewed for technical accuracy, clarity, and validity. Following the reviews, licensee comments were incorporated as appropriate.

3.0 **WRITTEN EXAMINATIONS**:

Provided below are a list of generic weaknesses identified from the grading of the written examinations. (NOTE: A weakness is defined when 50% or greater of the candidates miss a given question. This information is being provided to assist in upgrading initial and requalification training programs. No licensee response is required.

Question No. (RO/SRO)	Knowledge/Ability
02/02	Knowledge pertaining to calculating stay time in a radiation area given the field strength and exposure history. K/A 194001 K1.04 3.3/3.5)
NA/25	Knowledge of the effect that a failed high power range nuclear instrument has on automatic rod control. (K/A 001000 K1.05 4.5/4.4)
49/NA	Knowledge of the effect on differential boron worth as RCS boron concentration decreases. (K/A 001000 K5.28 3.5/3.8)
79/77	Knowledge of the preferred reagent for extinguishing a control board fire. (K/A 000067 K1.02 3.1/3.9)
91/NA	Knowledge of how to verify a locked valve's position. (K/A 194001 K1.01 3.6/3.7)

4.0 **OPERATING EXAMINATION**:

Provided below are a list of generic comments identified during the administration of the operating examination. This information is being provided to assist in upgrading initial and requalification training programs. No licensee response to these items is required.

During the walk-through examination, several candidates did not know that security badges are to be placed in a clear plastic bag and taped to the outside of protective clothing (PC) when no security guard is present upon entry into an area requiring PCs.

During Job Performance Measurement (JPM) questioning, several candidates did not know that a control rod exceeding its drop time is considered inoperable.

During the simulator scenarios, it was noted that communications among crew members was informative and clear.

During the simulator and walk-through examinations, the candidates demonstrated a thorough knowledge of plant procedures.

5.0 EMERGENCY OPERATING PROCEDURES TEAM INSPECTION ITEMS:

Closed (50-423/90-80-01): Correct deviation document errors and more fully document deviation justifications.

A review of several deviation justification documents indicates that the licensee is adequately detailing those deviations from the Emergency Response Guidelines. Also, it was noted that deviation documents now parallel the Emergency Operating Procedures (EOP), step for step. Previously, step documentation did not correlate justifications with the affected part of the EOP step. Also, a review of the Operating Procedure "EOP Change and Revision Process" indicated that it now specifies what must be done during the preparation or upgrading of step deviation documentation. Based upon the above review, this item is closed.

Closed (50-423/90-80-02): Evaluate the extent of differences between the control room labeling and what is designated within the EOPs and, if necessary, determine what corrective actions are needed.

Following a review of the labeling concerns, the licensee determined that some specific direction was needed in order to alleviate any possible confusion on the part of operators due to a labeling misconception.

Training instructors were directed by memorandum to be sensitive to EOP usability and simplicity issues. When operators demonstrated confusion as a result of labeling problems, training was instructed to initiate a feedback form and subsequently forward it to operations for evaluation. If deemed necessary, component identification numbers would then be added to accompany the component noun name. Also, OP 3266, "EOP Writers Guide", was revised to provide specific guidelines in the area of component identification. Based upon the above review, this item is closed.

Closed (50-423/80-90-03): Review and correct NRC identified EOP deficiencies.

A random sampling of EOP discrepancies identified previously by the NRC were reviewed to ensure that appropriate corrections had been made. It was determined, following this review, that appropriate corrective actions had been taken. Based upon the review, this item is closed.

Closed (50-423/80-90-04): Further evaluate and improve system for control and revision of EOPs.

Discussions with the licensee and a subsequent demonstration of the system now in place indicated that the licensee has significantly improved the control and revision

process for all EOP documentation. All procedure revisions and/or upgrades are controlled by the EOP Procedure Coordinator and is accomplished through the use of a computerized software program. Based upon the above review, this item is closed.

6.0 **EXIT MEETING ATTENDANCE**:

NRC Personnel:

* D. Silk, Senior Operations Engineer
* P. Bissett, Senior Operations Engineer
  A. Asars, Resident Inspector
* T. Guilfoil, Sonalyst Inc.

Northeast Nuclear Energy Company Personnel:

  T. Harvey, LOIT/LOUT Coordinator
* B. Parrish, Assistant Supervisor, Operator Training
  B. Ruth, Manager, Operator Training
* R. Stotts, Supervisor, Operator Training

* Denotes attendance at entrance meeting on April 20, 1992.

7.0 **SUMMARY OF COMMENTS MADE AT EXIT MEETING ON OCTOBER 24, 1991**:

The NRC expressed appreciation for the cooperation and support of the licensee's training personnel who were involved in the examination's validation and administration.

The NRC also discussed those items, as detailed in Sections 4.0 and 5.0, above.

The NRC commented that those JPMs, selected from the licensee's examination bank, were of sufficient quality and detail to administer and evaluate the candidates.

During the performance of a JPM that responded to a DWST level less than 80,000 gallons, the NRC questioned why the valve line-up procedure did not verify valve 3FWA*V62 as being in its correct position? Subsequent investigation by the licensee has determined that valve 3FWA*V62 should have been addressed by procedure and verified to be in the open position. The licensee has since generated a procedure change correcting the oversight and the procedure change is presently awaiting approval by the Plant Operations Review Committee.

ATTACHMENT 1

3RO WRITTEN EXAMINATION QUESTIONS AND ANSWER KEY

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

CANDIDATE'S NAME: Master

FACILITY: Millstone 3

REACTOR TYPE: PWR-WEC4

DATE ADMINISTERED: 92/04/23

INSTRUCTIONS TO CANDIDATE:

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

TEST VALUE	CANDIDATE'S SCORE	%	
~~101.00~~ 99 os		%	TOTALS
	FINAL GRADE		

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

Candidate's Signature

A N S W E R S H E E T

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 ___

MULTIPLE CHOICE

003 a b c d ___

~~004 a b c d ___ e~~ 05

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 ___ e~~ 05

010 a b c d ___

011 a b c d ___

012 a b c d ___

013 a b c d ___

014 a b c d ___

015 a b c d ___

016 a b c d ___

017 a b c d ___

018 a b c d ___

019 a b c d ___

020 MATCHING

a ___

b ___

c ___

d ___

MULTIPLE CHOICE

021 a b c d ___

022 a b c d ___

023 a b c d ___

024 a b c d ___

025 a b c d ___

026 a b c d ___

027 a b c d ___

028 MATCHING

a ___

b ___

c ___

d ___

A N S W E R S H E E T

Multiple Choice (Circle or X your choice)

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

MULTIPLE CHOICE

029 a b c d ___
030 a b c d ___
031 a b c d ___
032 a b c d ___
033 a b c d ___
034 a b c d ___
035 a b c d ___
036 a b c d ___
037 a b c d ___
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 ___
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 ___
053 a b c d ___
054 a b c d ___
055 a b c d ___
056 a b c d ___
057 a b c d ___
058 MATCHING

a ___
b ___
c ___
d ___

MULTIPLE CHOICE

059 a b c d ___
060 a b c d ___
061 a b c d ___
062 a b c d ___
063 a b c d ___
064 a b c d ___
065 a b c d ___
066 a b c d ___
067 a b c d ___
068 a b c d ___

A N S W E R S H E E T

Multiple Choice (Circle or X your choice)

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

069 a b c d ___

070 a b c d ___

071 a b c d ___

072 a b c d ___

073 a b c d ___

074 a b c d ___

075 MATCHING

a ___

b ___

c ___

d ___

MULTIPLE CHOICE

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 ___

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 ___

(********** 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. Before you turn in your examination, consecutively number each answer sheet, including any additional pages inserted when writing your answers on the examination question page.

8. Use abbreviations only if they are commonly used in facility literature. Avoid using symbols such as < or > signs to avoid a simple transposition error resulting in an incorrect answer. Write it out.

9. The point value for each question is indicated in parentheses after the question.

10. Show all calculations, methods, or assumptions used to obtain an answer to any short answer questions.

11. Partial credit may be given except on multiple choice questions. Therefore, ANSWER ALL PARTS OF THE QUESTION AND DO NOT LEAVE ANY ANSWER BLANK.

12. Proportional grading will be applied. Any additional wrong information that is provided may count against you. For example, if a question is worth one point and asks for four responses, each of which is worth 0.25 points, and you give five responses, each of your responses will be worth 0.20 points. If one of your five responses is incorrect, 0.20 will be deducted and your total credit for that question will be 0.80 instead of 1.00 even though you got the four correct answers.

13. If the intent of a question is unclear, ask questions of the examiner only.

14. When turning in your examination, assemble the completed examination with examination questions, examination aids and answer sheets. In addition, turn in all scrap paper.

15. Ensure all information you wish to have evaluated as part of your answer is on your answer sheet. Scrap paper will be disposed of immediately following the examination.

16. To pass the examination, you must achieve a grade of 80% or greater.

17. There is a time limit of four (4) hours for completion of the examination.

18. When you are done and have turned in your examination, leave the examination area (EXAMINER WILL DEFINE THE AREA). If you are found in this area while the examination is still in progress, your license may be denied or revoked.

QUESTION: 001 (1.00)

Which one of the following valves will fail CLOSED as a result of a loss of ccntol air.

a. Seal water flow controller (CHS-HCV-182)
b. Charging flow control valve (FCV-121)
c. Pressurizer spray valve (PCV-455B)
d. RHR HX flow control valve (FCV-606)

QUESTION: 002 (1.00)

In order to maintain the plant at 100% power, work must be performed inside containment in a radiation field of 400 mRem/hr gamma and 2.0 Rem/hr fast neutron. The maintenance man selected is 24 years old and has a lifetime exposure through last quarter of 28 Rem on his NRC Form 4. How long may the man be permitted to work in this area per 10CFR20 limits?

a. 30 minutes

b. 40 minutes

c. 50 minutes

d. 60 minutes

QUESTION: 003 (1.00)

During an emergency condition the STA reports the following:

1. Core Cooling - Red Path
2. Subcriticality - Yellow Path
3. Integrity - Orange Path
4. Heat Sink - Red Path

In what order should the above conditions be addressed?

a. 4,1,3,2

b. 4,3,1,2

c. 1,4,3,2

d. 1,3,4,2

QUESTION: 004 (1.00)

In accordance with EPIP 4010B "Acting Director of Station Emergency Operations" there are four conditions that one must consider when determining whether or not to evacuate. Which of the following is NOT one of those four conditions.

a. Will assembly help or hinder the situation?

b. Personnel dose rates exceeding limits
(limits: >10 mrem/hr or I-131 levels > 10 x MPC)

c. Personnel contamination levels exceeding limits
(limits: >5000 dpm/100 cm2 total beta-gamma)

d. Actual or potential personnel hazards exist.

DS Deleted

QUESTION: 005 (1.00)

Temporary changes to procedures may be made if three provision are met? Which of the following is NOT one of these three provisions?

a. The intent of the original procedure is not altered.

b. The change is approved by two licenced SROs from the affected unit, one of whom shall be the on-duty Shift Supervisor.

c. The change is reviewed by PORC/SORC and approved by the Unit Superintendent/Station Superintendent within 14 days of implementation.

d. No more than three temporary changes presently exist for the procedure in question.

QUESTION: 006 (1.00)

During a reactor startup, the first reactivity addition caused the count rate to increase from 20 to 40 cps. The second reactivity addition caused the count rate to increase from 40 to 80 cps. Which ONE of the following answers is correct?

a. The first and second reactivity additions were equal.

b. The first reactivity addition was larger.

c. The second reactivity addition was larger.

d. There is not enough data given to determine.

QUESTION: 0 7 (1.00)

Which ONE of the following statements describes the response of the Emergency Generator Load Sequencer (EGLS) when a Containment Depressurization Actuation (CDA) occurs 45 seconds following a Loss of Power (LOP)? There is no SI in Progress.

a. The EGLS will stop the load sequence, the loads will be stripped and the EGLS will start the CDA/LOP sequence at time 0.

b. The EGLS will stop the load sequence, the loads will be stripped and the EGLS will start the CDA/LOP sequence at time 45 sec.

c. The EGLS will stop the load sequence, the loads will be stripped that are not required by CDA/LOP, and the EGLS will start the CDA/LOP sequence at time 0.

d. The EGLS will stop the load sequence, the loads will be stripped that are not required by CDA/LOP, and the EGLS will start the CDA/LOP sequence at time 45 sec.

QUESTION: 008 (1.00)

There are four sources of makeup water to the Spent Fuel Pool. From the list below, identify the preferential order of use for the normal and emergency sources of makeup water to the Spent Fuel Pool.

a. RWST, Service Water System, Fire Protection Water System, and Primary Grade Water System.

b. RWST, Primary Grade Water System, Service Water System, and Fire Protection System.

c. Primary Grade Water System, RWST, Fire Protection System, and Service Water System.

d. Primary Grade Water System, RWST, Service Water System, and Fire Protection System.

QUESTION: 009 (1.00)

A leak develops in the reference leg associated with the automatic level control channel 3CHS*LC185 of the Volume Control Tank (VCT). As a result the associated level channel fails high. Assuming that no operator action is taken and that the VCT is in the automatic makeup mode, what will be the final change, if any, in the actual VCT level?

a. Completely drained

b. Remain the same

c. Increase and level off at some higher level

d. Decrease and level off at some lower level

DS Deleted

QUESTION: 010 (1.00)

Which of the following is NOT one of the FOUR SI Termination Criteria as stated in EOP 35 E-1, "Loss of Reactor or Secondary Coolant."

a. RCS subcooling (based on core exit TC's) > 30 degrees F

b. Total feed flow to S/G's > 525 gpm, or NR level in at least one S/G > 4%

c. RCS pressure stable or increasing

d. Pressurizer level > 7%

QUESTION: 011 (1.00)

Which of the following is NOT a condition that requires the PCPs be stopped as stated in EOP 35 FR-H.1, "Response to Loss of Secondary Heat Sink":

a. WR level in any 3 S/G's is < 39%

b. Pressurizer level is < 7%.

c. Total feed flow to S/G's cannot be maintained > 525 gpm.

d. Pressurizer pressure > or = 2350 psig.

QUESTION: 012 (1.00)

Which of the following individuals shall be denied access to the Control Room during emergencies, according to ACP 6.01 Control Room Procedure?

a. Public affairs personnel, under escort, who are being given a plant tour.

b. Individuals responsible for direct operation of the unit.

c. Individuals in a "trainee" status.

d. Personnel who may be required to support or advise the operation.

QUESTION: 013 (1.00)

WHICH of the following is the PREFERRED method for performing an INDEPENDENT VERIFICATION of the position of a throttled valve?

a. Count the number of turns required to fully open the valve and then restore the valve to the original position.

b. Count the number of turns required to fully close the valve and then restore the valve to the original position.

c. Valves that do not have position indicators shall be manipulated by both operators.

d. Have the independent verifier observe the initial equipment operator's actions.

QUESTION: 014 (1.00)

WHICH of the following descriptions correctly describes the function(s) of the P-4 Permissive Interlock?

a. Trips the turbine, trips the main feedwater (MFW) pumps, aligns and arms the steam dumps, allows the blocking of SI.

b. Trips the turbine, trips the MFW pumps, isolates MFW (Tave <564), aligns and arms the steam dumps, blocks SI.

c. Trips the turbine, isolates MFW (Tave <564), aligns and arms the steam dumps, blocks SI.

d. Trips the turbine, isolates MFW (Tave <564), aligns and arms the steam dumps, allows the blocking of SI.

QUESTION: 015 (1.00)

If a CDA signal has been generated and the containment recirculation time delay timer fails to generate its required signal, HOW will the containment depressurization system be AFFECTED?

a. The chemical addition tank outlet valves will remain open and cause a loss of NPSH to the containment spray pumps.

b. The RWST will be pumped dry when the containment spray pumps suction is not transferred to the containment sump.

c. The Containment Recirculation pumps will fail to start and containment pressure may not be reduced to sub-atmospheric in 60 minutes.

d. The containment recirculation pumps may be damaged by operation without adequate NPSH.

QUESTION: 016 (1.00)

WHY must a positive discharge pressure be maintained to the U-1 stack when the Suppplemental Leak Collection and Release System (SLCRS) is requ.red to be operable?

a. To prevent backflow from U-1 and cause an uncontrolled release to the service building.

b. To prevent backflow from U-1 and contaminate the Auxiliary Building.

c. To ensure a flow path exists and prevent overpressurizing the SLCRS system.

d. To ensure a flow path exists and prevent a high differential pressure across the SLCRS blower.

QUESTION: 017 (1.00)

If the B Train cold overpressure protection system is in operation and Pressurizer Pressure transmitter PT-405 is bypassed for testing, what is the CONSEQUENCE of Pressurizer Pressure transmitter PT-403 failing low?

a. RCS cold over pressure protection will be lost.

b. RCS cold over pressure protection will still be provided by PCV-455A.

c. RCS cold over pressure protection will still be provided by PCV-456.

d. PCV-456 will open and depressurize the RCS.

QUESTION: 018 (1.00)

WHICH of the following choices identifies major Hydrogen sources in containment following a design basis accident?

1. Zirconium - water reaction
2. Hydrogen inventory in the RCS
3. Radiolytic decomposition of water in the reactor core
4. Radiolytic decomposition of metals in containment
5. Radiolytic decomposition of water in containment
6. Corrosion of metals in containment

Choose the correct answer.

a. 1, 2 and 3
b. 1, 3 and 4
c. 2, 3 and 4
d. 4, 5 and 6

QUESTION: 019 (1.00)

WHICH of the following statements describes the required Technical Specification status of the Containment Ventilation System while in Mode 1?

a. Each containment purge supply and exhaust isolation valve shall be OPERABLE and each 42-inch containment shutdown purge supply and exhaust isolation valve may be INOPERABLE but must be capable of being closed.

b. Each containment purge supply and exhaust isolation valve shall be OPERABLE and each 42-inch containment shutdown purge supply and exhaust isolation valve shall be closed and locked closed.

c. Any containment purge supply and exhaust isolation valve and 42-inch containment shutdown purge supply and exhaust isolation valve may be INOPERABLE, but must be capable of being closed manually.

d. Any containment purge supply and exhaust isolation valve may be INOPERABLE, but each containment shutdown purge supply and exhaust isolation valve must be closed.

QUESTION [illegible] ([illegible].00)

Match the equipment or component in COLUMN A with the respective power supply in COLUMN B. [Note: The items in Column B may be used once, more than once, or not at all, and only a single answer may occupy one answer space]

[0.5 each ans.]

COLUMN A Equipment/Component	COLUMN B Power Supply
_____ a. Safety Related MCCs	1. Busses 35A thru D
_____ b. Safety-Related Battery Chargers	2. Busses 32-2T,-2R,-2U,-2W
_____ c. Quench Spray Pumps	3. Busses 32A thru G
_____ d. High Head SI Pumps	4. Busses 32-2T,-2R,-2U,-2W & 32-3T
	5. Busses 32R, 32T, 32U, & 32W
	6. Busses 34C/D

QUESTION: 021 (1.00)

A reactor startup is in progress with the reactor critical. The Reactor Operator has just finished logging the following readings:

N-31	3 X E +4 cpm
N-32	5 X E +4 cpm
N-35	5 X E -10 amps
N-36	2 X E -10 amps
N-41 thru N44	0% power

Immediately after taking the readings, nuclear instrument N-32 fails low. WHICH of the following ACTIONS should be taken?

a. Trip the reactor

b. Manually insert all control rods

c. Proceed with the startup after blocking both Source Range Instruments, N-31 & N-32

d. Proceed with the startup but restore Channel N-32 to operable status before exceeding 10% power

QUESTION: 022 (1.00)

Reactor power is 6% during a shutdown when intermediate range channel N-36 fails HIGH. WHICH of the following statements describes HOW this failure affects the reactor shutdown and subsequent operation of the Nuclear Instrumentation system?

a. The reactor will trip on high IR flux, and source range NIs will reenergize when N-35 decreases to the proper setpoint.

b. The reactor will trip on high IR flux, and source range NIs will have to be manually reenergized.

c. The reactor will not trip, and source range NIs will reenergize when N-35 decreases to the proper setpoint.

d. The reactor will not trip, and source range NIs will have to be manually reenergized.

QUESTION: 023 (1.00)

EOP 35 E-3 [Steam Generator Tube Rupture] step 14 states, "Check Ruptured S/G Pressure - Greater than 513 psig." Subsequent steps direct the operator to dump steam from the intact S/Gs as rapidly as possible in order to establish adequate subcooling margin. WHICH of the following statements describes the BASIS for checking ruptured S/G pressure greater than 513 psig?

a. To ensure that the ruptured SG is not also faulted, which would lead to an ORANGE condition on the RCS Integrity CSF status tree on a subsequent cooldown.

b. To ensure that RCS pressure will be less than ruptured S/G pressure after the cooldown to stop primary to secondary leakage

c. To ensure that the operator blocks the low steam line pressure SI signal, which would actuate below 513 psig

d. To ensure an optimal RCS temperature is established which would preclude a return to criticality during the rapid RCS cooldown

QUESTION: 024 (1.00)

The power range HI FLUX and RATE TRIP bistables of a failed power range detector are placed in the trip condition by which ONE of the following?

a. Taking the applicable comparator channel defeat switch to the failed channel position at the comparator and rate drawer.

b. Taking the applicable Power Mismatch Bypass switch to the failed channel position at the Detector Current Comparator drawer.

c. Taking the control power fuses out of the Power Range A Drawer.

d. Taking the applicable control power fuses out of the Comparator and Rate Drawer.

QUESTION: 025 (1.00)

The reactor is at 100% power and rod control in automatic when one of the power range nuclear instruments used for rod control fails high.

Which ONE of the following correctly describes rod control and plant response?

a. Rods move in until the power mismatch rate signal decays, then move out to the original position to correct the temperature error.

b. Rods move in until the power mismatch rate signal decays, then remain at the new position with a reduced Tave.

c. Rods move out until the power mismatch rate signal decays, then move in to the original position to correct the temperature error.

d. Rods move out until the high power rod block is reached, then remain at the new position with an increased Tave.

QUESTION: 026 (1.00)

The loss of which ONE of the below signals would have a direct effect on the Main Feed Pump automatic speed control system?

a. Feed water flow

b. Steam header pressure

c. Steam generator level

d. Auctioneered high nuclear power

QUESTION: 027 (1.00)

The reactor is shutdown, all RCP's are stopped; decay heat is being removed by natural circulation in the RCS and venting steam to the atmosphere from a steam generator PORV. RCS pressure is 1550 psig and average core thermocouple temperature is 402 deg. F. Which ONE of the answers below gives the amount of subcooling that exists in the RCS?

a. 150 deg.

b. 200 deg.

c. 250 deg.

d. 300 deg.

QUESTION: 028 (2.00)

With the reactor operating at 100% power, match the NIS failures in COLUMN A with the correct affect on the plant in COLUMN B. (The items in COLUMN B may be used once, more than once, or not at all, and only a single answer may occupy one answer space.)

	COLUMN A (NIS failures)		COLUMN B (Affect on the plant)
_____a.	1 Power Range Channel Fails High	1.	High setpoint reactor trip
_____b.	1 Power Range Channel Fails Low	2..	Low setpoint reactor trip
_____c.	2 Power Range Channels Fail High	3.	High power negative rate trip
_____d.	1 Power Range Channel Fails Low with 1 Power Range channel previously removed from service IAW AOP 3571	4.	Rod withdrawal is prevented
		5.	Will not affect plant operations

QUESTION: 029 (1.00)

Which ONE of the following RCS piping penetrations extends into the coolant stream?

a. PZR Spray Line.

b. PZR Surge Line.

c. CVCS Normal Charging.

d. RHR Pump Suction.

QUESTION: 030 (1.00)

If PZR level transmitter LT 459 is selected for control when the reference leg for LT 459 develops a slow leak, which ONE of the following describes anticipated instrument or plant response?

	LT-459 PZR LVL INDICATION	LT-60 & 461 PZR LVL INDICATION	VCT LEVEL
a.	INCREASING	DECREASING	INCREASING
b.	DECREASING	INCREASING	INCREASING
c.	INCREASING	DECREASING	DECREASING
d.	DECREASING	INCREASING	DECREASING

QUESTION: 031 (1.00)

Which ONE of the following statements correctly describes the Containment Personnel Air Lock?

a. The inner and outer doors of the Containment Personnel Air Lock are interlocked.

b. The mechanical interlock of the Containment Personnel Air Lock cannot be defeated.

c. Interlocks prevent both equalizing valves being opened simultaneously.

d. An equalizing valve can only be operated if the same side door is closed and locked.

QUESTION: 032 (1.00)

Which ONE of the following parameters can be used to correctly discriminate between a steamline rupture inside containment and a small break LOCA?

a. PZR level.

b. Increase in charging flow.

c. RCS temperature.

d. PZR pressure.

QUESTION: 033 (1.00)

The following conditions exist at Unit 3:

- Mode 4 - RCS Temp/Press is 210 F/450 psig
- Maintenance is being performed on the Containment Pressure Detectors
- An SI Signal is received by the ECCS circuitry

Which ONE of the below statements describes the response of the ECCS Accumulators, and the reason for that response?

a. The Accumulators will not discharge into the RCS, because the outlet valve's are shut with their power supply locked-out.

b. The Accumulators will not discharge into the RCS, because RCS pressure is less than P-11 (1950 psig.)

c. The Accumulators will discharge into the RCS, because the outlet valves are interlocked to open on an SI Signal.

d. The Accumulators will discharge into the RCS, because the outlet valve's are open with their power supply locked-out.

QUESTION: 034 (1.00)

Which ONE of the following describes a condition that requires immediate boration according to AOP 3566, "Immediate Boration?"

a. Shutdown Margin less than 1.5% delta K/K in MODE 2.

b. ROD CONTROL BANKS LIMIT LOW alarm in MODE 1.

c. Three out of four loop Tavgs reach 540°F after a reactor trip.

d. Failure of two or more control rod clusters to fully insert following reactor trip.

QUESTION: 035 (1.00)

Which ONE (1) of the following sets of conditions is indicative of centrifugal pump runout?

a. High discharge pressure, high flow, and high power requirements.

b. High discharge pressure,low flow, and low power requirements

c. Low discharge pressure, high flow, and low power requirements.

d. Low discharge pressure, high flow, and high power requirements.

QUESTION: 036 (1.00)

Which ONE of the following functions does the reactor coolant pump anti-reverse rotation device minimize?

a. Starting voltage.

b. Starting torque.

c. Seals heating in an idle loop.

d. Restart time at low power levels.

QUESTION: 037 (1.00)

Given the following conditions:

- RCS system solid.
- No RCPs have been running for 1 hour.
- Tave is at 180 degrees F.
- RCS system fill and vent have been completed.

Which ONE of the following conditions must exist prior to starting Reactor Coolant pump per OP 3301D, "Reactor Coolant Pump Operations?"

a. VCT pressure greater than 10 psig.

b. Steam generator temperature 50 degrees F greater than RCS system temperature.

c. Switchyard voltage greater than 345 KV.

d. A steam bubble in the pressurizer.

QUESTION: 038 (1.00)

Given the following conditions:

- Reactor power is 60%.
- Loop 1 Delta-T indicates LOW.
- Loop 1 Tave indicates HIGH.

Which ONE of the following RTD failures caused these indications?

a. T-hot failed high.

b. T-hot failed low.

c. T-cold failed high.

d. T-cold failed low.

QUESTION: 039 (1.00)

During a shutdown the low pressurizer pressure and the low steamline pressure safety injections are blocked by the operator.

Which ONE of the following conditions will unblock safety injection?

a. Tave increases to 560 degrees F.

b. Steam pressure increases to 750 psig.

c. RCS pressure increases to 2000 psig.

d. A high rate of decrease of 125 psi/second on the main steam lines.

QUESTION: 040 (1.00)

After completing the first six steps of ES-0.1, "Reactor Trip Response" a valid Safety Injection actuation occurs simultaneously with a report of an RED path on FR-H.1, "Response to Loss of Secondary Heat Sink". In accordance with OP-3272, "EOP Users Guide", WHICH of the following actions must be initiated?

a. Complete the remainder of ES-0.1 and transition to E-0, step 1.

b. Immediately transition to E-0, step 1, complete the immediate actions and transition to FR-H.1.

c. Immediately transition to FR-H.1 and then transition to E-0, step 1, as soon as the RED condition clears providing no higher priorty CSF exists.

d. Immediately transition to FR-H.1 if no higher CSF condition exists, perform FR-H.1 to completion.

QUESTION: 041 (1.00)

The Balance of Plant (BOP) Log is normally maintained and completed automatically by the plant process computer. If the plant process computer is NOT available, then in accordance with ACP 10. 5, "Log Book Requirements", which ONE of the following correctly describes how the BOP log is MAINTAINED?

a. The Control Operator manually logs readings obtained from the Control Room instruments.

b. A Dedicated Operator manually logs readings obtained from the Control Room instruments.

c. A Dedicated Operator manually scans the Safecy Parameters Display System (SPDS) computer points and manually logs readings.

d. The Control Operator manually scans the Safety Parameters Display System (SPDS) computer points and manually logs readings.

QUESTION: 042 (1.00)

WHICH of the following statements is INCORRECT when describing the controls on flammable liquids?

a. Individuals may bring flammable liquids, up to one pint, into the control room without first having acquired permission.

b. The Operations Shift Supervisor or Supervising Control Room Operator must first grant permission prior to bringing any flammable liquid greater than one pint into the control room.

c. Flammable liquids may be left unattended in non-vital areas for up to one hour.

d. Flammable liquids, up to one pint, may be left unattended in vital areas for up to one hour.

QUESTION: 043 (1.00)

Given the following conditions:

- LOCA inside containment has occurred
- Safety Injection and ESF Actuation signals initiated by low pressurizer pressure
- One of the pressurizer pressure instruments fails high after initiating a low pressurizer pressure signal.

Which ONE of the following correctly describes how the ESF and/or the SI system will react under these conditions?

a. The ESF signal will reset since the actuating logic is no longer present.

b. The ESF and the SI circuits will remain actuated since the logic circuitry seals in (relays deenergize).

c. Pressurizer pressure instruments will not actuate the ESF logic under any circumstances.

d. With a failed pressurizer pressure instrument the logic circuit automatically changes to one of three.

QUESTION: 044 (1.00)

Which ONE of the following statements correctly describes the Area Radiation Monitoring System?

a. Area monitors use ionization chambers to detect and measure beta exposure.

b. Area monitors use GM tubes to detect and measure gross gamma exposure rate.

c. Area monitors are scintillation detectors which detect and measure alpha and beta exposure rates.

d. Area monitors are Kaman detectors which detect and measure alpha, beta and neutron exposure rates.

QUESTION: 045 (1.00)

If a Safety Injection Signal is the only actuation signal initiated, WHICH of the following describes the response of the Service Water System?

[1] Open the Diesel Generator cooling supply valves
[2] Initiate start signal for the lead SWP Pump
[3] Initiate start of the follow SWP Pump
[4] Isolate flow to the RPCCW heat exchanger
[5] Isolate flow to the TPCCW heat exchangers
[6] Supply SWP to the Recirculation Spray System heat exchangers

[Select the correct answer]

a. Item 1 and 2 only

b. Item 1 and 3 only

c. Item 1, 3 and 5 only

d. Item 2, 5 and 6 only

QUESTION: 046 (1.00)

A plant start up is in progress with the reactor at 32% power. If an RCP trips, HOW will the affected loop parameters respond?

a. S/G steaming rate increases, Loop Delta-T increases, and gives Delta-T deviation alarm

b. Loop temperature approaches T-cold, S/G steaming rate very small, gives T-avg deviation alarm

c. S/G steaming rate decreases, Loop Delta-T increases, Loop temperature approaches T-cold

d. Loop temperature approaches T-avg, S/G steaming rate decreases slightly, Loop Delta-T decreases slightly

QUESTION: 047 (1.00)

Which ONE of the following is the basis for isolating all feedwater to a faulted steam generator?

a. To reduce the probability of occurrence of a steam generator tube rupture in the faulted steam generator.

b. To minimize RCS cooldown and mass energy release following a steam line break.

c. To prevent all feedwater flow from entering the faulted steam generator and filling the generator, causing the PORV's to lift.

d. To ensure the release to the environment remains below the 10CFR100 limits on a design basis event.

QUESTION: 048 (1.00)

EOP 35 ECA-0.0, "Loss of All AC Power", step 16 directs the operator to depressurize intact S/Gs to 220 psig but not less 134 psig. Which ONE of the statements below correctly states the reason for establishing these limits?

a. Upper limit of 220 psig minimizes voiding in the core, lower limit of 134 psig prevents the injection of SI accumulator nitrogen into the RCS

b. Upper limit of 220 psig minimizes loss of RCS inventory, lower limit of 134 psig prevents the injection of SI accumulator nitrogen into the RCS

c. Upper limit of 220 psig minimizes voiding in the core of lower limit of 134 psig provides an adequate pressure head to the S/G PORVs for cooldown.

d. Upper limit of 220 psig minimizes loss of RCS inventory, lower limit of 134 psig provides an adequate pressure head to the S/G PORVs for cooldown.

QUESTION: 049 (1.00)

Under which ONE of the following CONDITIONs may RCPs be started even though the RCP may be damaged as a result of starting the pump?

a. When responding to a steam generator tube rupture in accordance with E-3

b. When responding to a loss of secondary heat sink in accordance with FR-H.1

c. When responding to inadequate core cooling in accordance with FR-C.1

d. When responding to voids in the reactor vessel in accordance with FR-I.3

QUESTION: 050 (1.00)

When operating in accordance with AOP 3553, "High Reactor Coolant System Activity", what is the PRIMARY reason for increasing letdown to 120 gpm?

a. To increase RCS filtration rate.

b. To increase RCS degassification rate.

c. To limit RCS specific activity to < 1 uc/gm dose equiv. I-131.

d. To limit-off site dose in the event of a LOCA.

QUESTION: 051 (1.00)

Which ONE of the following INDICATIONS may be symptoms of a dropped rod?

a. Rod Position Deviation alarm and Rod Control Urgent Failure Alarm

b. Power Range Flux Rate Hi [one channel] and Power Range Flux Difference

c. Rod Position Deviation and Rod Control Non Urgent Failure alarm

d. Power Range Flux Difference and Rod Control Banks Limit Low alarm

QUESTION: 052 (1.00)

A loss of WHICH of the following DC buses will NOT require a reactor trip?

a. DC buses 301A-1

b. DC buses 301B-1

c. DC buses 301D-1

d. DC buses 301A-2

QUESTION: 053 (1.00)

When operating in Mode 1, WHICH of the following should be performed if both of the Fuel Pool Area Radiation Monitors are out of service?

a. Perform Technical Specification 3.0.3 actions

b. Fuel pool area monitor failure does not require technical specification action

c. Provide portable continuous monitor

d. Restore at least one monitor to OPERABLE status within 4 hours

QUESTION: 054 (1.00)

The following plant conditions exists:

- All systems in auto
- Mode 1 at 100%
- Letdown flow 75 gpm
- Seal injection flow 32 gpm
- Charging flow 75 gpm
- Pressurizer level 61% (constant)
- Containment humidity (increasing)

Which ONE of the following statements describes the above conditions:

a. RCS leakage is 28 gpm and in excess of Technical Specifications allowable 1 gpm unidentified leakage.

b. RCS leakage is 40 gpm which is within the allowable 40 gpm (8 per pump) controlled leakage limit of Technical Specifications.

c. RCS leakage is 8 gpm and within the allowable 10 gpm identified limit of Technical Specifications.

d. RCS leakage is 20 gpm and in excess of the 1 gpm unidentified leakage limit in Technical Specifications.

QUESTION: 055 (1.00)

Which ONE of the following describes the use of adverse containment values in the advent of a LOCA?

a. If containment temperature or radiation exceeds the stated value on the foldout page, adverse containment values are used for the duration of the event.

b. Once in adverse conditions because of temperature and radiation, normal values can be used, if temperature and radiation decrease less than the foldout page values.

c. Once in adverse conditions, a return to normal values can be made, if containment temperature was the only reason adverse conditions had been declared.

d. Once in adverse conditions, a return to normal values can be made, if containment radiation was the only reason adverse conditions had been declared.

QUESTION: 056 (1.00)

Given the following conditions:

- Plant startup is in progress
- Reactor power is 8%
- Pressurizer Level Control Selector Switch is in Position I-II
- Pressurizer Level Transmitter LT-460 fails high

Which of the following statements accurately reflects the consequences of the LT-460 failure?

a. Technical Specification 3.0.3 action should be implemented because less than the minimum number of operable pressurizer level channnels are operable.

b. Tecnical Specification 3.3.1, Instrumentation, action is not required because power is less than P-7.

c. Charging flow must be manually decreased because charging flow will be increased to maximum flow by the failure.

d. Charging flow must be manually increased because charging flow will be reduced to minimum flow by the failure.

QUESTION: 057 (1.00)

EOP FR-S-1 (Response To Nuclear Power Generation - ATWS), Step 2, directs the operators to "Verify Turbine Trip." If the turbine has not tripped, which of the following is the PREFERRED ORDER of the RNO ACTIONS?

a. Manually run back the turbine manually trip the turbine, close the MSIVs and bypass valves.

b. Manually run back the turbine, close the MSIVs and bypass valves, manually trip the turbine.

c. Manually trip the turbine, close the MSIVs and bypass valves, manually run back the turbine.

d. Manually trip the turbine, manually run back the turbine, close the MSIVs and bypass valves.

QUESTION: 058 (2.00)

Match the class of fires listed below (A - D) with the materials involved (1 - 4).

CLASS OF FIRE	MATERIALS INVOLVED
_____A. Alpha	1. Flammable liquids, gases, or greases
_____B. Bravo	2. Combustible metals
_____C. Charlie	3. Ordinary combustibles (paper, wood, etc.)
_____D. Delta	4. Energized electrical equipment

QUESTION: 059 (1.00)

A steam line break inside containment has resulted in adverse containment conditions. Choose the correct response based on your evaluation of the effect on steam generator level indications.

a. Indicated steam generator level will be LOWER than actual due to a DECREASE in reference leg water density.

b. Indicated steam generator level will be LOWER than actual due to an INCREASE in reference leg water density.

c. Indicated steam generator level will be HIGHER than actual due to a DECREASE in reference leg water density.

d. Indicated steam generator level will be HIGHER than actual due to an INCREASE in reference leg water density.

QUESTION: 060 (1.00)

Given the following conditions:

A large break LOCA has occurred.

Appropriate actions in accordance with 35 EOP E-0, "Reactor Trip and Safety Injection", and 35 EOP E-1, "Loss of Reactor or Secondary Coolant", have been completed.

ECCS is operating in cold leg recirculation mode.

RCS pressure is stable at 200 psig.

Which ONE of the following statements correctly describes the primary method of decay heat removal?

a. The condensation of reflux boiling in the S/Gs.

b. Heat transfer between the RCS and the S/Gs due to natural circulation flow.

c. Heat transfer between the RCS and the S/Gs due to forced circulation flow.

d. The injection of water from the containment sump and the removal of steam/water out from the break.

QUESTION: 061 (1.00)

Which of the following is NOT an automatic start signal for starting the motor driven auxiliary feedwater pumps.

a. Safety injection signal

b. AMSAC actuation signal

c. 22% steam generator level

d. 23 psia containment pressure

QUESTION: 062 (1.00)

Which of the following is NOT one of the basic functions provided for by the steam generator (S/G) flow restrictor during a steam line break.

a. Limits reactor coolant system cooldown rate.

b. Minimizes the mass flow rate that a main steam isolation valve must close against.

c. Minimizes the reaction force imposed on the steam piping.

d. Minimizes the lifting of the S/G safeties.

QUESTION: 063 (1.00)

Which of the following will NOT result in an automatic Feedwater Isolation Signal?

a. P-14 Hi-Hi S/G 2/4

b. SI

c. P-12 Low Low Tave 2/4

d. P-4 Low Tave 2/4

QUESTION: 064 (1.00)

How would RCP seal water return flow and RCP lower bearing water temperature change as a result of a failure of a RCP's number one seal?

a. Flow - Increases
Temperature - Decreases

b. Flow - Decreases
Temperature - Decreases

c. Flow - Increases
Temperature - Increases

d. Flow - Decreases
Temperature - Remains the same

QUESTION: 065 (1.00)

While operating at 96% power, manual boration is initiated. Which ONE of the following correctly gives the INDICATIONS that the emergency boration valve (MV 8104) was inadvertently opened instead of flow control valve (FVC-110A)?

a. Tave begins to fall, the boric acid batch integrator advances more rapidly than normal, flow indicator (FI-183A) reads 35 GPM, and control rods begin to step out.

b. Tave remains steady, the boric acid batch integrator does not advance, flow indicator (FI-103A) reads 5 GPM, and control rods do not move.

c. Tave begins to fall, the boric acid batch integrator advances more rapidly than normal, flow indicator (FI-183A) reads 35 GPM, and control rods begin to step in.

d. Tave begins to fall, the boric acid batch integrator does not advance, flow indicator (FI-183A) reads 35 GPM, and control rods begin to step out.

QUESTION: 066 (1.00)

The following conditions are observed after the actuation of an SI:

- Charging pumps running
- SI pumps running
- RHR pumps running
- VCT level 60%
- RWST level 520,000 gal.
- Pressurizer level 20%
- RCS pressure 1675 psig

Which ONE of the below listed AUTOMATIC FUNCTION(S) will occur?

a. Charging pump suction will align to the VCT.

b. Containment recirc pump discharge to SI pump suction header valve opens.

c. RHR pumps stop.

d. No automatic functions will occur, SI pump suction realignment is interlocked to sump level.

QUESTION: 067 (1.00)

The ATWS Mitigation System Actuation Circuitry (AMSAC) has two variable time delays built into the system.

What is the PURPOSE of the time delays?

a. To allow flow coast down to take effect before initiating auxiliary feedwater flow following an ATWS.

b. Allow operators to block AMSAC from the MCB at any power level in the event it is not needed.

c. To ensure the turbine is tripped before opening the steam dumps to prevent excessive cooldown rate.

d. To allow for level transients and for the Solid State Protection System to actuate first.

QUESTION: 068 (1.00)

The plant is at 100% power. All automatic control systems are in automatic. The "B" fourth point heater drain pump trips (3HDL-PIB).

Which ONE of the following statements best describes the response of the plant (steady state to steady state)?

a. Feed pump speed increases, main condensate flow decreases, and reactor power increases.

b. Feed pump speed increases, main condensate flow increases, and reactor power increases.

c. Feed pump speed decreases, main condensate flow decreases, and reactor power decreases.

d. Feed pump speed decreases, main condensate flow increases, and reactor power decreases.

QUESTION: 069 (1.00)

Which ONE of the following conditions will result in a Feedwater Isolation signal which trips the Main Feed pumps? (Assume all systems operating normally)

a. Reactor trip with at least 1 of 4 loop Tavg < 564 F.

b. A feed reg valve bypass valve fails open at 100% power.

c. Containment Isolation Phase A occurs.

d. Safety Injection is manually actuated.

QUESTION: 070 (1.00)

Unit 3 is at full power when an SI occurs. All automatic actions function properly. It is determined there was no valid demand for an SI and EOP 35 ES-1.1, SI Termination has been entered.

Which ONE of the below statements describes what occurs when you attempt to RESET the SI signal?

a. Will not reset.

b. Will reset and return the SI actuation logic to its pre-safety injection conditions allowing auto and manual SI signals.

c. Will reset and block subsequent automatic SI signals only.

d. Will reset and block subsequent manual SI signals only.

QUESTION: 071 (1.00)

The "MCC LOSS OF CONTROL POWER" annunciator is in alarm on MB8. MCC 32-2C is deenergized and cannot be restored for 12 hours. All Digital Rod Position Indication (DRPI) is lost.

Which ONE of the statements below describes how DRPI can be restored prior to restoring MCC 32-2C?

a. Select 32-1C by using the power transfer switch inside the main boards.

b. Run a power cable from data cabinet A to Data Cabinet B.

c. Select 32-1M by using the power supply switch in the Auxiliary Building.

d. Connect a bank of 15 VDC batteries to the back of the control board display unit.

QUESTION: 072 (1.00)

During operation, at 50% power, the controlling steam pressure channel, PT-514, for feedwater control of the A S/G fails LOW. What is the INITIAL RESPONSE that an operator would observe?

a. Feed flow decreases to compensate for decreased steam flow indication.

b. A steam line isolation due to a high steam generator pressure rate.

c. A low steam line pressure SI.

d. The plant will not respond to the failed steam pressure channel.

QUESTION: 073 (1.00)

While running fully loaded for a surveillance, the "A" Emergency Diesel is stopped using the EMERGENCY STOP pushbutton.

Which ONE of the below statements describes what will happen to the diesel, with no operator action, if a subsequent Safety injection signal occurs?

a. Will not start

b. Will start immediately

c. Will start 60 seconds after the output breaker opens

d. Will start 140 seconds after shutdown

QUESTION: 074 (1.00)

The plant is in the REFUELING MODE with the reactor vessel head lifted about 2 feet off the flange for inspection prior to filling the cavity. An Operator presses the control switch to open the RWST SUPPLY TO RHS SUCTION (3SIL*MV8812A).

Which ONE of the statements below describes what will happen?

a. The valve will stroke open and the RWST will empty into the refueling cavity.

b. The valve will open but a check valve will prevent RWST discharge into the RCS.

c. The valve will open but close automatically when the RWST LOW-LOW LEVEL alarm occurs.

d. The valve will not open because of an interlock with loop suction valve.

QUESTION: 075 (2.00)

Match the Radiation Monitor in COLUMN A to the automatic Function in COLUMN B that will occur if the radiation detector alarms HIGH. [Note: The items in COLUMN B may be used only once or not at all, and only a single answer may occupy one answer space.]

[4 answers required at 0.5 each]

COLUMN A (Radiation Monitor)		COLUMN B (Automatic Function)	
_____a.	ARC 21-1 Air Ejector Exhaust	1.	Diverts discharge back to sump
_____b.	CNA-47-1 Auxiliary Condensate Flash Tank Discharge	2.	Directs effluent to evaporator feed tanks
_____c.	HVC-16A Control Building Radiation Monitor	3.	Shuts S/G blowdown containment isolation
_____d.	RMS-41-1 Fuel Drop Monitor	4.	Isolates liquid flow into and out of Degassifier
		5.	Isolates containment purge and exhaust
		6.	Initiates control building isolation

QUESTION: 076 (1.00)

Given the following conditions:

- Reactor Power 94%
- Incore flux map indicates flux tilt ratio of 1.09

Which ONE of the following actions should the operator take?

a. Reduce power and trip set point by 7%.

b. Reduce power to less than 50%.

c. If AFD is within limits, remain at 94% power.

d. Commence shutdown to Hot Shutdown.

QUESTION: 077 (1.00)

Several solvent soaked rags left by the main control board have ignited by spontaneous combustion.

Which ONE of the below listed reagents is the preferred method of extinguishing the fire?

a. Foam.

b. C02 Extinguisher.

c. Water Fog/Spray.

d. Dry powder extinguisher.

QUESTION: 078 (1.00)

Unit 3 is operating at 100% power when a toxic gas (carbon dioxide) forces the evacuation of the Control Room in accordance with EOP 3503, "Shutdown Outside Control Room."

Which ONE of the following is required prior to leaving the Control Room in addition to tripping the reactor?

a. Trip all SG Main Feed Pumps and start the motor driven Feed Pump.

b. Close the MSIVs and start all of the Charging Pumps?

c. Trip the Main Turbine and trip all RCPs.

d. Close the MSIVs and open the steam supplies to the TDAFW pump.

QUESTION: 079 (1.00)

The following conditions exist:

- No forced or natural RCS circulation flow
- Inadequate core cooling following a LOCA
- Performing actions of EOP 35 FR-C.1

Which ONE of the following is the primary reason for restoring level in all intact steam generators to greater than 4%?

a. Ensure SG level is within the protection grade range.

b. Maintain SGs as a heat sink.

c. Keep the feed ring covered to prevent water hammer.

d. Maintain the SG tubes covered to prevent thermal gradients from forming.

QUESTION: 080 (1.00)

The following plant conditions exist:

- The unit is operating at 100% power
- PZR pressure control is in AUTOMATIC
- A set of backup heaters is on to maintain the spray valves slightly open
- Actual PZR pressure is 2250 psia
- The PZR pressure master controller malfunctions and the setpoint is step changed to 2325 psia

Which ONE of the statements below lists the initial AUTOMATIC responses in the PZR pressure control system as a result of this malfunction?

a. Spray valves open, PORV PVC-456 opens, and pressurizer heaters deenergize.

b. Spray valves open and pressurizer heaters deenergize.

c. Spray valves close and pressurizer heaters energize.

d. Spray valves open, PORV PVC-455A opens, and pressurizer heaters deenergize.

QUESTION: 081 (1.00)

Which ONE of the below trips does the RPSAS generate to protect the reactor from an uncontrolled RCCA bank withdrawal from a subcritical condition?

a. Overtemperature Delta T.

b. Overpower Delta T.

c. Source Range High Flux Trip.

d. High Neutron Flux (High Setpoint).

QUESTION: 082 (1.00)

Procedure EOP 35, E-0, Reactor Trip or Safety Injection, immediate action directs the operator to "Check all turbine stop valves closed."

Which ONE of the statements below is the purpose of this step?

a. Prevent overspeed of the turbine on output breaker trip.

b. Prevent overheating of the turbine from windage if vacuum is lost.

c. Prevent reverse power from driving the turbine.

d. Prevent uncontrolled cooldown of the RCS on a trip.

QUESTION: 083 (1.00)

Approximately 30 minutes after a large break LOCA, the Control Room operators are instructed to restore control power for the RHR Cold Leg Injection valves (3SIL & MV8809 A/B).

Which ONE of the following statements indicate why this action is required?

a. The application of control power will allow these valves to automatically stroke to their hot leg recirculation mode positions.

b. These valves must be stroked to transfer from the injection mode to the cold leg recirculation mode.

c. These valves are located inside containment and cannot be manually repositioned.

d. The application of control power will allow these valves to automatically stroke to their cold leg recirculation mode function.

QUESTION: 084 (1.00)

Which ONE of the following statements is the reason for the one hour recovery time limit for a dropped rod?

a. Extended operation with a dropped rod may result in excessive localized power peaking when the rod is retrieved.

b. Xenon oscillations are directly proportional to the length of time that the rod was dropped and localized power peaking is inversely proportional to the magnitude of the xenon oscillations.

c. Extended operation with a dropped rod may invalidate the calculated low rod insertion limit and require that the Technical Specification limit be raised.

d. Extended operation with a dropped rod may require revision of the rod worth curves used in the shutdown margin calculation.

QUESTION: 085 (1.00)

Procedure EOP 35 ECA-0.0, LOSS OF ALL AC POWER, specifies four steps as IMMEDIATE ACTION steps. In addition to "Verify Reactor Trip," which ONE of the choices below are the remaining 3 steps in order?

a. Verify MSIV-closed, check if RCS isolated, try to restore power to any train of AC emergency buses.

b. Close PRZR PORVs, verify MSIVs-closed, verify TDAFW pump running.

c. Close PRZR PORVs, try to restore power to any train of AC emergency busses, verify MSIVs-closed.

d. Check all turbine stop valves closed, check if RCS is isolated, verify adequate AFW flow.

QUESTION: 086 (1.00)

Which ONE of the statements below correctly describes how sodium hydroxide (NaOH) is added to the Quench Spray System following a CDA signal?

a. The chemical addition pump starts and pumps the NaOH to the spray rings.

b. The chemical addition pump starts and pumps the NaOH to the RWST.

c. The chemical addition tank gravity flows to the suction of the Quench Spray Pump.

d. The chemical addition tank gravity flows to the RWST.

QUESTION: 087 (1.00)

During operation at 94% power, the operator notes the following conditions:

- Instrument Air (IA) Pressure 85 psig
- Instrument Air Low Header Pressure Alarm actuated

Which ONE of the following DESCRIBE the expected IA response?

a. One IA compressor running, service air compressor running, cross connect valve shut.

b. Two IA compressors running, service air compressor not running, cross connect valve shut.

c. Two IA compressors running, service air compressor not running cross connect valve open.

d. Two IA compressors running, service air compressor running cross connect valve open.

QUESTION: 088 (1.00)

Which of the following is NOT an instance where Critical Safety Function Status tree monitoring begins?

a. Whenever a Reactor trip together with an SI occurs.

b. Whenever E-0 is exited to branch to another procedure.

c. An emergency operating (EOP) procedure step or substep directs their use.

d. For informational purposes during the performance of ECA-0.0, "Loss of All AC," until directed in a recovery procedure.

QUESTION: 089 (1.00)

Upon the initial check of the CSF status trees after exiting EOP 35 E-0, the SCO recognizes a computer failure resulting in a question of the validity of the SPDS box indications. A manual backup of the status trees is required and should be performed by:

a. The SS/STA in parallel with the SCO's direction of EOP steps.

b. The RO or BOP, at the SCO's discretion, in parallel with the SCO's direction of EOP steps.

c. The SCO's direction of the board operators while suspending other EOP actions.

d. A "dedicated operator" at the direction of the SS, while suspending other EOP actions.

QUESTION: 090 (1.00)

Unit 3 has just been notified of an injured person in the vicinity of the North Access Point. Who has the ultimate responsibility for notifying the local offsite authorities, including local ambulance services.

a. Unit 1 Shift Supervisor

b. Unit 2 Shift Supervisor

c. Unit 3 Shift Supervisor

d. Station Director

QUESTION: 091 (1.00)

WHICH of the following is NOT a general guidance condition in which 10 CFR 20 limits may be exceeded during an emergency?

a. Whole body exposure should be limited to less than 75 rem during life-saving situations.

b. Whole body exposure should be limited to less than 25 rem during plant-saving situations.

c. Rescue personnel should be relatively young in age and not married.

d. Director of Site Emergency Operations must grant approval to exceed 10 CFR 20 limits.

QUESTION: 092 (1.00)

The overhaul of A RHR pump has just been completed and the tags have been cleared. As the Shift Supervisor, you have determined that a retest of the pump cannot be performed until tomorrow. Which ONE of the following is an appropriate means of temporarily securing the A RHR pump while it is awaiting retest?

a. Place the A RHR pump control switch on MB2 in PULL-TO-LOCK.

b. Reissue the original Work Order.

c. Caution tag the pump and associated controllers.

d. Rack out the pump breaker.

QUESTION: 093 (1.00)

Which one of the following approvals, if any, would be needed if it was determined that a shift reactor operator would be working a 16 hour on/8 hour off shift during the next 2 days?

a. No approval necessary.

b. First-level Supervisor approval is needed.

c. First-level and Second-level Supervisor approval is needed.

d. First-level, Second-level Supervisor and Unit Director approval is needed.

QUESTION: 094 (1.00)

The Reactor Engineer desires to perform a special reactor physics test at power involving the insertion of Bank "D" control rods in "Bank Select." What feature of the rod control system will not be operational?

a. The slave cycler will not function.

b. The bank overlap unit will be defeated while in bank select.

c. The P/A converter will be OFF by 115 steps.

d. A "Rod Deviation" alarm will be bypassed.

QUESTION: 095 (1.00)

More than one work order may be assigned to a clearance consisting of 4 red tags only ' :

a. The work orders are assigned to the same job leader.

b. The work orders are for the same component or job scope.

c. Agreed to by the person requesting the clearance.

d. Approved by the shift supervisor.

QUESTION: 096 (1.00)

Which ONE of the following statements correctly describes the LOCATION and CONTROL over the Movable Incore Detector System (MID) (HR3) key, a unique key that opens the movable incore system barrier gates?

a. The key is located in the Health Physics Office and is under the control of the Health Physics Supervisor.

b. The key is located in the Health Physics Office and is under the control of the Radiation Protection Supervisor.

c. The key is located in the Control Room and is under the control of the Shift Supervisor.

d. The key is located in the Control Room and is under the control of the Unit Director.

QUESTION: 097 (1.00)

Which ONE of the following Reactor Trips provides the diverse (backup) trip if a trip is not generated by a low steam generator level on a loss of feedwater flow?

a. Power range flux high

b. Pressurizer pressure high

c. Over temperature Delta-T

d. Pressurizer pressure low

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

ANSWER: 001 (1.00)

c. Fails closed

PEFERENCF:

AOP 3562, Loss of instrument air, pg 2

3.8 078 000 K 3.02 3.4/3.6

EO - Intro to I&C 7
I&C failure analysis 1

078000K302 ..(KA's)

ANSWER: 002 (1.00)

c.

5(24-18) = 30 Rem; Lifetime limit = 30 - 28 = 2 Rem
With Form 4 on file he is permitted 3 Rem/Qtr
Lifetime limit is more restrictive
0.4 Rem/hr + 2.0 Rem/hr = 2.4 Rem/hr
2.0 Rem/2.4 Rem/hr = 0.83 hrs = 50 minutes

REFERENCE:

10CFR20.201
10CFR20.202

[2.8/3.4/3.4]

194001K103 ..(KA's)

ANSWER: 003 (1.00)

c.

REFERENCE:

(Usage Rules)
ECA-0.0 pg 3
EO - EOP development 6,7

[4.1/3.9]

194001A102 ..(KA's)

ANSWER: 004 (1.00)

c.

DS

Deleted

REFERENCE:

EPIP 4010A, pg 5; EPIP 4010B, pg 3.

Plant-Wide Generic 194001 A 1.16 3.1/4.4
EO - EPIP 22

194001A116 ..(KA's)

ANSWER: 005 (1.00)

d.

REFERENCE:

TS pgs 6-16,6-17
ACP-QA-3.02, pg 30

Plant-Wide Generics 194001A101 3.3/3.4

EO - TS 17

194001A103 ..(KA's)

ANSWER: 006 (1.00)

b.

REFERENCE:

MP3, Reactor Operations lesson plan, pp. 13-15
Neutron Sources and Subcritical Multiplication lesson plan, pp. 11-22
Objective-1986 RQ, Reactor Theory 3. 1987 RQ 4B-1

192008K104 ..(KA's)

ANSWER: 007 (1.00)

c.

REFERENCE:

MP3 BOP Diesel Generator Sequencer, p. 4
Objective-198[illegible] RQ, Describe the operation of the Diesel Generator Sequencer.
KA 064000K41[illegible]

064000K41[illegible] ..(KA's)

ANSWER: 008 (1.00)

c.

REFERENCE:

MP3 1987 Requal Objectives, p. 30, Item 10C/5A.
MP3 procedure 3305, pp. 10-14.

[2.9/3.2]

033000K401 ..(KA's)

ANSWER: 009 (1.00)

a.

DS Deleted

REFERENCE:

MP3 NSSS CVCS, pp. 8 & 9

[3.2/3.0]

004020A305 ..(KA's)

ANSWER: 010 (1.00)

d.

REFERENCE:

MP3 1987 Pequal Objectives, p. 2, Item 1B-4.
MP3 EOP 35 E-1, "Loss of Reactor or Secondary Coolant" Rev. 1, Step 6.

[3.6/4.2]

000009A234 ..(KA's)

ANSWER: 011 (1.00)

b.

REFERENCE:

MP3 1987 Requal Objectives, p. 4, Item 2B-4.
MP3 EOP 35 FR-H.1.
MP3 EOP Development Training Text HO EOP 35 FR-H, pp.21-22.

[4.4/4.6]

000054K304 ..(KA's)

ANSWER: 012 (1.00)

a.

REFERENCE:

MP3 1986 Requal Objectives, ACP 6.01 Objectives, #4.
ACP 6.01 page 11

[3.1/3.4]

194001K105 ..(KA's)

ANSWER: 013 (1.00)

d.

REFERENCE:

ACP-2.20, pg. 4

[3.6/3.7]

194001K101 ..(KA's)

ANSWER: 014 (1.00)

d.

REFERENCE:

MS3 Text page 56

[3.3/3.5]

012000K610 ..(KA's)

ANSWER: 015 (1.00)

c.

REFERENCE:

CDA-02-C, Containment Depressurization, Rev. 0, Page 4, Para 3.g, Objective 4

[4.2/4.3]

026000K302 ..(KA's)

ANSWER: 016 (1.00)

b.

REFERENCE:

MP3, Supplemental Leak Collection and Release System, page 6 and GWS-01-C-006

KA 071000G010 [2.5/2.7]

071000G010 ..(KA's)

ANSWER: 017 (1.00)

a.

REFERENCE:

010000K301 3.8/3.9
PPL-02-C, Pressurizer Pressure and Level Control, Rev. 3,
Page 25, Para 6., Objective 4

010000K301 ..(KA's)

ANSWER: 018 (1.00)

a.

REFERENCE:

028000K503 2.9/3.6
HCS-02-C, Hydrogen Recombiner, Rev. 0, Pages 5 & 6, Para G.,
Objective 1

028000K503 ..(KA's)

ANSWER: 19 (1.00)

b.

REFERENCE:

Technical Specification 3.6.1.7

[2.8/3.4]

029000G005 ..(KA's)

ANSWER: 020 (2.00)

a. 5.
b. 2.
c. 6.
d. 6.

REFERENCE:

LOIT 120-01-C, 120 VAC Electrical Distribution System, Rev. 1, Page 4
LOIT 480-01-C, 480 V Electrical Distribution System, Rev. 1, Page 5
LOIT 4KV-01-C, 4160 VAC Electrical Distribution System, Pages 4 & 5

[3.3/3.4]

062000K201 ..(KA's)

ANSWER: 021 (1.00)

c.

REFERENCE:

000032K301 3.2/3.6
AOP-3571, Rev 2, Appendix F, Page 1
LOIT Lesson Plan NIS-01-C, Rev 2, Page 31

000032K301 ..(KA's)

ANSWER: 022 (1.00)

b.

REFERENCE:

000033A208 3.3/3.4
AOP-3571, Rev. 2, Appendix E, Page 1
LOIT Lesson Plan NIS-01-C, Rev. 2, Page 32 & 38

000033A208 ..(KA's)

ANSWER: 023 (1.00)

a.

REFERENCE:

000038A215 4.2/4.4
LOIT Lesson Plan E30-01-C, Rev 1, Page 28

000038A215 ..(KA's)

ANSWER: 024 (1.00)

c.

REFERENCE:

AOP 3571, Appendix D, pages 1 & 2 and NIS-01-C-012

KA 015000A403 [3.8/3.9]

015000A403 ..(KA's)

ANSWER: 025 (1.00)

b.

REFERENCE:

MP3 Rod Control System, page 10 and ROD-01-C-006

KA 001000K105 [4.5/4.4]

001000K105 ..(KA's)

ANSWER: 026 (1.00)

b.

REFERENCE:

MP3 Steam Generator Water Level Control System, pages 13-18 and SGC-01-C-006

KA 059000A211 [3.0/3.3]

059000A211 ..(KA's)

ANSWER: 027 (1.00)

b.

REFERENCE:

Steam Tables

KA 017020K502 [3.7/4.0]

017020K502 ..(KA's)

ANSWER: 028 (2.00)

a. 4
b. 5
c. 1
d. 3 (4 answers required at 0.5 each)

REFERENCE:

MP3 RPS Actuation System, pages 39 and 40 and RPS-01-C-021

KA 015000K301 [4.1/4.2]

015000K301 ..(KA's)

ANSWER: 029 (1.00)

a.

REFERENCE:

MP3, Pressurizer and Pressure Relief Tank, page 6

KA 002000K109 [4.1/4.1]

002000K109 ..(KA's)

ANSWER: 030 (1.00)

a.

REFERENCE:

MP3, Pressurizer Pressure and Level Control, pages 18 & 19 and PPL-01-C-021

KA 011000A210 [3.4/3.6]

011000A210 ..(KA's)

ANSWER: 031 (1.00)

05
C. 01

REFERENCE:

MP3, Containment Text, page 9

KA 103000K404 [2.5/3.2]

103000K404 ..(KA's)

ANSWER: 032 (1.00)

c.

REFERENCE:

MP3 AOP 3555, Rev. 1, page 2 and A55-01-C-001.

000009A101 [4.4/4.3]

000009A101 ..(KA's)

ANSWER: 033 (1.00)

a.

REFERENCE:

MP3, Emergency Core Cooling System, page 40 and ECC-01-C-021

KA 006000K410 [3.6/3.7]

006000K410 ..(KA's)

ANSWER: 034 (1.00)

d.

REFERENCE:

MP3, AOP 3566, Rev. 3, page 2 and A66-01-C-001.

000024K301 [4.1/4.4]

000024K301 ..(KA's)

ANSWER: 035 (1.00)

d.

REFERENCE:

Westinghouse, Thermal-Hydraulic Principles and Applications to the Pressurized Water Reactor II and ECC-01-C-006

KA 006000K613 [2.6/2.9]

006000K613 ..(KA's)

ANSWER: 036 (1.00)

b.

REFERENCE:

MP3 Reactor Coolant Pump, page 13 and RCP-01-C-002

KA 003000G007 [3.2/3.3]

003000G007 ..(KA's)

ANSWER: 037 (1.00)

d.

PEFERENCE:

MP3 OP 3301D, Rev. 3, page 6 and RC?-01-C-024

KA 002000K113 [4.1/4.2]

002000K113 ..(KA's)

ANSWER: 038 (1.00)

c.

REFERENCE:

MP3, Temperature Indicating System, pages 1-6, and TIS-01-C-009

KA 016000A101 [3.0/3.1]

016000A101 ..(KA's)

ANSWER: 039 (1.00)

c.

REFERENCE:

OP 3208, page 22 and RPS-01-C-021

KA 013000A101 [4.0/4.2]

013000A101 ..(KA's)

ANSWER: 040 (1.00)

d.

REFERENCE:

OP-3272, Rev. 1, pages 4 through 6

[3.4/3.6]

000056G012 ..(KA's)

ANSWER: 041 (1.00)

a.

REFERENCE:

ACP-10.05, Rev. 4, p.6

[3.4/3.4]

194001A106 ..(KA's)

ANSWER: 042 (1.00)

d.

REFERENCE:

ACP 2.05B, Control of Combustible Materials, Flammable Liquids, Compressed Gases, and Ignition Sources, Rev. 16, Page 7, Para 6.3.5 thru 6.3.9

[2.8/4.1]

194001A111 ..(KA's)

ANSWER: 043 (1.00)

b.

RFFERENCE:

MP3 System Training Text, RPS and Safeguards Actuation, p. 17

[4.2/4.4]

013000K101 ..(KA's)

ANSWER: 044 (1.00)

b.

REFERENCE:

MP3, Radiation Monitoring System, pages 3-5, and RMS-01-C-001

KA 072000K501 [2.7/3.0]

072000K501 ..(KA's)

ANSWER: 045 (1.00)

a.

REFERENCE:

LOIT SWP-01-C, Rev. 2, pages 43 through 46

[3.6/3.8]

076000K116 ..(KA's)

ANSWER: 046 (1.00)

b.

REFERENCE:

A544-01-C, AOP 3554, RCP Trip Or Seal Failure, Page 5, Para 2.a.

000015K104 ..(KA's)

ANSWER: 047 (1.00)

b.

REFERENCE:

LOIT Lesson Plan E20-01-C, Rev. 1, p. 11

000040K304 ..(KA's)

ANSWER: 048 (1.00)

b.

REFERENCE:

LOIT Lesson Plan A00-01-C, Rev. 2, p. 21 and 22

000055K302 ..(KA's)

ANSWER: 049 (1.00)

c.

REFERENCE:

FC1-01-C, FR-C.1 Response To Inadequate Core Cooling, Page 19, Para 3.a

000074A106 ..(KA's)

ANSWER: 050 (1.00)

a.

REFERENCE:

A53-01-C, AOP 3553, High Reactor Coolant System Activity, Page 6, Para D

[3.2/3.8]

000076K306 ..(KA's)

ANSWER: 051 (1.00)

b.

REFERENCE:

A52-01-C, AOP 3552 Rod Control Malfunctions, Page 5, Para a.2

000003K104 ..(KA's)

ANSWER: 052 (1.00)

d.

REFERENCE:

AOP-3563, Rev. 1, Pages 1 through 5 of Attachments A through F

000058A103 ..(KA's)

ANSWER: 053 (1.00)

c.

REFERENCE:

Technical Specification 3.3.3.1

000061A206 ..(KA's)

ANSWER: 054 (1.00)

d.

REFERENCE:

Technical Specifications, 3.4.6.2 and RCS-01-C-040

KA 002000G005 [3.6/4.1]

002000G005 ..(KA's)

ANSWER: 055 (1.00)

c.

REFERENCE:

MP3, EOP 35 E-0, Rev. 10, page 4 and E001-01-C-018.

000011G012 [4.0/4.1]

000011G012 ..(KA's)

ANSWER: 056 (1.00)

b.

REFERENCE:

011000G005 3.2/3.8
Technical Specification Table 3.3-1

[3.2/3.8]

028000G004 ..(KA's)

ANSWER: 057 (1.00)

d.

REFERENCE:

000029G010
FS1-01-C, EOP FR-S.1, Response To Nuclear Power Gerneration - ATWS, Page 6, Para 3.c

[4.5/4.5]

000029G010 ..(KA's)

ANSWER: 058 (2.00)

a. 3
b. 1
c. 4
d. 2 [0.5 pts each]

REFERENCE:

NRC Read and Sign Program, pg 15
(ACP-8.02)
(OP-3256)
EG - ACP-QA-2.05

[3.5/4.2]

194001K116 ..(KA's)

ANSWER: 059 (1.00)

c.

REFERENCE:

[3.4/3.6]

035010A203 ..(KA's)

ANSWER: 060 (1.00)

d.

REFERENCE:

LOIT Lesson Plan S12-01-C, Rev. 1, p.11

000011K101 ..(KA's)

ANSWER: 061 (1.00)

c.

REFERENCE:

Millstone 3 Text AFW page 12

[4.5/4.6]

061000K402 ..(KA's)

ANSWER: 062 (1.00)

d.

REFERENCE:

MS text S/G page 17

[3.1/3.4]

035000G007 ..(KA's)

ANSWER: 063 (1.00)

c.

REFERENCE:

MS3 Text page 5

[3.5/3.7]

000054A205 ..(KA's)

ANSWER: 064 (1.00)

c.

REFERENCE:

AOP 3554, RCP Trip or Seal Failure, pgs 2,3

[3.5/3.9]

003000A201 ..(KA's)

ANSWER: 065 (1.00)

d.

REFERENCE:

MP3 Primary Grade Water and Reactor Makeup Systems, pages 16 and 17

KA 004000A401 [3.8/3.9]

004000A401 ..(KA's)

ANSWER: 066 (1.00)

c.

REFERENCE:

MP3 ECCS, pages 64 & 65 and ECC-01-C-010

KA 013000G015 [4.1/4.2]

013000G015 ..(KA's)

ANSWER: 067 (1.00)

d.

REFERENCE:

MP3 AMSAC System, page 7

KA 013000K404 [4.3/4.5]

013000K404 ..(KA's)

ANSWER: 068 (1.00)

b.

REFERENCE:

MP3 Feedwater Heater Vent and Drain System, pages 3 & 4 and FWH-01-C-013

KA 059000G015 [3.4/3.6]

059000G015 ..(KA's)

ANSWER: 069 (1.00)

d.

REFERENCE:

MP3 Main Feedwater System, page 12 and FWS-01-C-019

KA 059000A412 [3.4/3.5]

059000A412 ..(KA's)

ANSWER: 070 (1.00)

c.

REFERENCE:

MP3, Functional Diagram Safeguard Actuation Signals, sheet 8 and RPS-01-C-022

KA 012000A406 [3.2/3.5]

012000A406 ..(KA's)

ANSWER: 071 (1.00)

c.

REFERENCE:

MP3, Rod Position Indicating System, page 3 and RPI-01-C-005

KA 014000A202 [3.1/3.6]

014000A202 ..(KA's)

ANSWER: 072 (1.00)

a.

REFERENCE:

MP3, Steam Generator Water Level Control System, page 9 and SGC-01-C-003.

KA 035010K405 [3.1/3.4]

035010K405 ..(KA's)

ANSWER: 073 (1.00)

a.

REFERENCE:

MP3, Diesel Generator and Support Systems, page 21 and EGS-01-C-014

KA 064000K302 [4.2/4.4]

064000K302 ..(KA's)

ANSWER: 074 (1.00)

a.

REFERENCE:

MP3, Residual Heat Removal System, pages 1,3,4 and RHS-01-C-004

KA 005000K111 [3.5/3.6]

005000K111 ..(KA's)

ANSWER: 075 (2.00)

a. 3
b. 1
c. 6
d. 5 (4 answers required at 0.5 each)

REFERENCE:

[3.9/3.9]

073000A401 ..(KA's)

ANSWER: 076 (1.00)

b.

REFERENCE:

Tech. Spec. 3.2.4, page 3/4 2-24 and ROD-01-C-028

KA 000005A201 [3.3/4.1]

000005A201 ..(KA's)

ANSWER: 077 (1.00)

d.

REFERENCE:

MP3 ACP-QA-2.05, Fire Protection Program, Rev. 25

000067K102 [3.1/3.9]

000067K102 ..(KA's)

ANSWER: 078 (1.00)

d.

REFERENCE:

MP3 EOP 3503, Rev. 6, page 3 and EO3-01-C-000.

000068K318 [/]

000068K318 ..(KA's)

ANSWER: 079 (1.00)

b.

REFERENCE:

MP3, EOP 35 FR-C.1, Rev. 4, page 8 and FC1-01-C-006.

000074K302 [3.7/4.2]

000074K302 ..(KA's)

ANSWER: 080 (1.00)

c.

REFERENCE:

MP?, Pressurizer Pressure and Level Control, pages 6 & 7 and PPL-01-C-004

KA 000027A210 [3.3/3.6]

000027A210 ..(KA's)

ANSWER: 081 (1.00)

c.

REFERENCE:

MP3 Reactor Protection Safeguard Actuation System, page 37 and RPS-01-C-020.

000001K102 [3.9/4.0]

000001K102 ..(KA's)

ANSWER: 082 (1.00)

d.

REFERENCE:

MP3 EOP 35 E-O, Rev. 10, page 4 and E00-01-C-006.

000007K103 [3.7/4.0]

000007K103 ..(KA's)

ANSWER: 083 (1.00)

b.

REFERENCE:

MP3 EOP 35 ES 1.3, Rev. 4, page 4 and RHS-01-C-010.

000025K303 [3.9/4.1]

000025K303 ..(KA's)

ANSWER: 084 (1.00)

a.

REFERENCE:

MP3, AOP 3552, Rev. 1, Appendix A, page 1, and A52-01-C-006.

000003G007 [3.4/3.6]

000003G007 ..(IA's)

ANSWER: 085 (1.00)

d.

REFERENCE:

MP3 EOP 35 ECA-0.0, pages 3[illegible], and A00-01-C-008

000055G010 [4.1/4.3]

000055G010 ..(KA's)

ANSWER: 086 (1.00)

c.

REFERENCE:

MP3, Quench Spray System, page 8 and LDA-01-C-021

KA 027000K101 [3.4/3.7]

027000K101 ..(KA's)

ANSWER: 087 (1.00)

d.

REFERENCE:

MP3, Instrument Air System, pages 6-8 and PAS-01-C-003

KA 078000K303 [3.0/3.4]

[2.9/3.2]

000065A201 ..(KA's)

ANSWER: 088 (1.00)

a.

REFERENCE:

OP 3272, EOP Users Guide, pg. 8

[3.8/3.9]

000007G012 ..(KA's)

ANSWER: 089 (1.00)

c.

REFERENCE:

OP-3272 Item 01-000612

[3.1/3.4]

194001A115 ..(KA's)

ANSWER: 090 (1.00)

a.

REFERENCE:

OPIP 4010A pg.2

[3.1/4.4]

194001A116 ..(KA's)

ANSWER: 091 (1.00)

c.

REFERENCE:

SHP 49002 pg. 14

[3.3/3.5]

194001K104 ..(KA's)

ANSWER: 092 (1.00)

c.

REFERENCE:

ACP-QA-2.02B pg.6

[3.4/3.4]

194001K106 ..(KA's)

ANSWER: 093 (1.00)

c.

REFERENCE:

MS3 ACP1.19 pg.5-6
EO 566-01

[2.7/3.9]

194001A109 ..(KA's)

ANSWER: 094 (1.00)

b.

REFERENCE:

MP3 Rod Control System
LOIT #000892

[3.2/3.3]

001000G007 ..(KA's)

ANSWER: 095 (1.00)

c.

REFERENCE:

ACP 2.06A
LOIT #002351

[3.7/4.1]

194001K102 ..(KA's)

ANSWER: 096 (1.00)

d. c

REFERENCE:

MP3 ACP 7.04A Rev. 8, pgs. 3, 7, 8

[2.5/3.4]

194001K103 ..(KA's)

ANSWER: 097 (1.00)

b.

REFERENCE:

MP3 Reactor Protection Safeguard Actuation System, pg.47 and RPS-01-C-020

[3.9/4.0]

012000G004 ..(KA's)

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

A N S W E R K E Y

MULTIPLE CHOICE

001 c

002 c

MULTIPLE CHOICE

003 c

~~004 e~~ e DS

005 d

006 b

007 c

008 c

~~009 a~~ e DS

010 d

011 b

012 a

013 d

014 d

015 c

016 b

017 a

018 a

019 b

020 MATCHING

a 5

b 2

[illegible]

[illegible]

MULTIPLE CHOICE

021 c

022 b

023 a

024 c

025 b

026 b

027 b

028 MATCHING

a 4

b 5

c 1

d 3

MULTIPLE CHOICE

029 a

030 a

A N S W E R K E Y

031 ~~c~~ 05 a

032 c

033 a

034 d

035 d

036 b

037 d

038 c

039 c

040 d

041 a

042 d

043 b

044 b

045 a

046 b

047 b

048 b

049 c

050 a

051 b

052 d

053 c

054 d

055 c

056 b

057 d

058 MATCHING

a 3

b 1

c 4

d 2

MULTIPLE CHOICE

059 c

060 d

061 c

062 d

063 c

064 c

065 d

066 c

067 d

068 b

069 d

070 c

071 c

A N S W E R K E Y

072 a

073 a

074 a

075 MATCHING

a 3

b 1

c 6

d 5

MULTIPLE CHOICE

076 b

077 d

078 d

079 b

080 c

081 c

082 d

083 b

084 a

085 d

086 c

087 d

088 a

089 c

090 a

091 c

092 c

093 c

094 b

095 c

096 ~~d~~ c

097 b

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

S R O E x a m P W R R e a c t o r

O r g a n i z e d b y Q u e s t i o n N u m b e r

QUESTION	VALUE	REFERENCE
001	1.00	3725
002	1.00	3737
003	1.00	3738
~~004~~	~~1.00~~	~~3744~~ e 05
005	1.00	3754
006	1.00	4362
007	1.00	4376
008	1.00	4379
~~009~~	~~1.00~~	~~4418~~ e 05
010	1.00	4425
011	1.00	4426
012	1.00	4436
013	1.00	21884
014	1.00	21901
015	1.00	21914
016	1.00	21917
017	1.00	21923
018	1.00	21927
019	1.00	21928
020	2.00	21932
021	1.00	21969
022	1.00	21970
023	1.00	21973
024	1.00	22321
025	1.00	22339
026	1.00	22347
027	1.00	22681
028	2.00	22692
029	1.00	22695
030	1.00	22698
031	1.00	22709
032	1.00	22733
033	1.00	22756
034	1.00	22978
035	1.00	23024
036	1.00	24043
037	1.00	24097
038	1.00	24098
039	1.00	24112
040	1.00	26113
041	1.00	26114
042	1.00	26123
043	1.00	26135
044	1.00	26145
045	1.00	26169
046	1.00	26172
047	1.00	26179
048	1.00	26182

049 1.00 26185

TEST CROSS REFERENCE

S R O E x a m P W R R e a c t o r

O r g a n i z e d b y Q u e s t i o n N u m b e r

QUESTION	VALUE	REFERENCE
050	1.00	26187
051	1.00	26189
052	1.00	26202
053	1.00	26203
054	1.00	26363
055	1.00	26481
056	1.00	9000162
057	1.00	9000163
058	2.00	9000164
059	1.00	9000165
060	1.00	9000166
061	1.00	9000167
062	1.00	9000168
063	1.00	9000169
064	1.00	9000170
065	1.00	9000173
066	1.00	9000174
067	1.00	9000175
068	1.00	9000179
069	1.00	9000180
070	1.00	9000190
071	1.00	9000191
072	1.00	9000193
073	1.00	9000194
074	1.00	9000195
075	2.00	9000196
076	1.00	9000197
077	1.00	9000198
078	1.00	9000199
079	1.00	9000200
080	1.00	9000201
081	1.00	9000203
082	1.00	9000204
083	1.00	9000207
084	1.00	9000208
085	1.00	9000209
086	1.00	9000211
087	1.00	9000212
088	1.00	9000214
089	1.00	9000215
090	1.00	9000216
091	1.00	9000217
092	1.00	9000218
093	1.00	9000219
094	1.00	9000220

095	1.00	9000221
096	1.00	9000222
097	1.00	9000223
	~~101.00~~ 05	
	99.0	
	~~101.00~~ 05	

TEST CROSS REFERENCE

SRO Exam PWR Reactor

Organized by KA Group

PLANT WIDE GENERICS

QUESTION	VALUE	KA
003	1.00	194001A102
005	1.00	194001A103
041	1.00	194001A106
093	1.00	194001A109
042	1.00	194001A111
089	1.00	194001A115
~~004~~	~~1.00~~	~~194001A116~~ C 05
090	1.00	194001A116
013	1.00	194001K101
095	1.00	194001K102
096	1.00	194001K103
002	1.00	194001K103
091	1.00	194001K104
012	1.00	194001K105
092	1.00	194001K106
058	2.00	194001K116
PWG Total	~~17.00~~ 05	
	16.00	

PLANT SYSTEMS

Group I

QUESTION	VALUE	KA
094	1.00	001000G007
025	1.00	001000K105
064	1.00	003000A201
036	1.00	003000G007
065	1.00	004000A401
~~009~~	~~1.00~~	~~004020A305~~ C 05
039	1.00	013000A101
066	1.00	013000G015
043	1.00	013000K101
067	1.00	013000K404

071	1.00	014000A202
024	1.00	015000A403
028	2.00	015000K301
027	1.00	017020K502
015	1.00	026000K302
026	1.00	059000A211
069	1.00	059000A412
068	1.00	059000G015
061	1.00	061000K402
016	1.00	071000G010
044	1.00	072000K501

TEST CROSS REFERENCE

SRO Exam PWR Reactor

Organized by KA Group

PLANT SYSTEMS

Group I

QUESTION	VALUE	KA
PS-I Total	~~22.00~~ 21.00	

Group II

QUESTION	VALUE	KA
054	1.00	002000G005
029	1.00	002000K109
037	1.00	002000K113
033	1.00	006000K410
035	1.00	006000K613
017	1.00	010000K301
030	1.00	011000A210
070	1.00	012000A406
097	1.00	012000G004
014	1.00	012000K610
038	1.00	016000A101
086	1.00	027000K101
056	1.00	028000G004
018	1.00	028000K503
019	1.00	029000G005
008	1.00	033000K401
062	1.00	035000G007
059	1.00	035010A203
072	1.00	035010K405
020	2.00	062000K201
073	1.00	064000K302

007	1.00	064000K410
075	2.00	073000A401
031	1.00	103000K404

PS-II Total 26.00

Group III

QUESTION	VALUE	KA
074	1.00	005000K111
045	1.00	076000K116
001	1.00	078000K302
PS-III Total	3.00	

TEST CROSS REFERENCE

SRO Exam PWR Reactor

Organized by KA Group

PLANT SYSTEMS

QUESTION	VALUE	KA
PS Total	~~51.00~~ 50	

EMERGENCY PLANT EVOLUTIONS

Group I

QUESTION	VALUE	KA
081	1.00	000001K102
084	1.00	000003G007
051	1.00	000003K104
076	1.00	000005A201
055	1.00	000011G012
060	1.00	000011K101
046	1.00	000015K104
034	1.00	000024K301
057	1.00	000029G010
047	1.00	000040K304
085	1.00	000055G010
048	1.00	000055K302
077	1.00	000067K102
078	1.00	000068K318

049	1.00	000074A106
079	1.00	000074K302
050	1.00	000076K306
EPE-I Total	17.00	

Group II

QUESTION	VALUE	KA
088	1.00	000007G012
082	1.00	000007K103
032	1.00	000009A101
010	1.00	000009A234
083	1.00	000025K303
080	1.00	000027A210
021	1.00	000032K301
022	1.00	000033A208
023	1.00	000038A215
063	1.00	000054A205
011	1.00	000054K304
052	1.00	000058A103
053	1.00	000061A206
087	1.00	000065A201

TEST CROSS REFERENCE

SRO Exam PWR Reactor

Organized by KA Group

EMERGENCY PLANT EVOLUTIONS

Group II

QUESTION	VALUE	KA
EPE-II Total	14.00	

Group III

QUESTION	VALUE	KA
040	1.00	000056G012
EPE-III Total	1.00	
EPE Total	32.00	
Test Total	~~101.00~~ 99.00	

ATTACHMENT 2

RO WRITTEN EXAMINATION QUESTIONS AND ANSWER KEY

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

CANDIDATE'S NAME: Master

FACILITY: Millstone 3

REACTOR TYPE: PWR-WEC4

DATE ADMINISTERED: 92/04/23

INSTRUCTIONS TO CANDIDATE:

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

TEST VALUE	CANDIDATE'S SCORE	%
100.00		% TOTALS
	FINAL GRADE	

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

Candidate's Signature

A N S W E R S H E E T

Multiple Choice (Circle or X your choice)

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

001 MATCHING

a ___

b ___

c ___

d ___

MULTIPLE CHOICE

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 ___

013 a b c d ___

014 MATCHING

a ___

b ___

c ___

d ___

MULTIPLE CHOICE

015 a b c d ___

016 a b c d ___

017 a b c d ___

018 a b c d ___

019 a b c d ___

020 a b c d ___

021 a b c d ___

022 a b c d ___

023 a b c d ___

024 a b c d ___

025 a b c d ___

026 a b c d ___

027 a b c d ___

028 a b c d ___

029 a b c d ___

030 a b c d ___

031 a b c d ___

032 a b c d ___

033 a b c d ___

034 a b c d ___

A N S W E R S H E E T

Multiple Choice (Circle or X your choice)

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

035 MATCHING

a ___

b ___

c ___

d ___

036 MATCHING

a ___

b ___

c ___

d ___

MULTIPLE CHOICE

037 a b c d ___

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 ___

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 ___

053 a b c d ___

054 a b c d ___

055 a b c d ___

056 MATCHING

a ___

b ___

c ___

d ___

MULTIPLE CHOICE

057 a b c d ___

058 a b c d ___

059 a b c d ___

060 a b c d ___

061 a b c d ___

062 a b c d ___

063 a b c d ___

064 a b c d ___

065 a b c d ___

066 a b c d ___

A N S W E R S H E E T

Multiple Choice (Circle or X your choice)

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

067	a	b	c	d	___
068	a	b	c	d	___
069	a	b	c	d	___
070	a	b	c	d	___
071	a	b	c	d	___
072	a	b	c	d	___
073	a	b	c	d	___
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	___
092	a	b	c	d	___
093	a	b	c	d	___
094	a	b	c	d	___
095	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. Before you turn in your examination, consecutively number each answer sheet, including any additional pages inserted when writing your answers on the examination question page.

8. Use abbreviations only if they are commonly used in facility literature. Avoid using symbols such as < or > signs to avoid a simple transposition error resulting in an incorrect answer. Write it out.

9. The point value for each question is indicated in parentheses after the question.

10. Show all calculations, methods, or assumptions used to obtain an answer to any short answer questions.

11. Partial credit may be given except on multiple choice questions. Therefore, ANSWER ALL PARTS OF THE QUESTION AND DO NOT LEAVE ANY ANSWER BLANK.

12. Proportional grading will be applied. Any additional wrong information that is provided may count against you. For example, if a question is worth one point and asks for four responses, each of which is worth 0.25 points, and you give five responses, each of your responses will be worth 0.20 points. If one of your five responses is incorrect, 0.20 will be deducted and your total credit for that question will be 0.80 instead of 1.00 even though you got the four correct answers.

13. If the intent of a question is unclear, ask questions of the examiner only.

14. When turning in your examination, assemble the completed examination with examination questions, examination aids and answer sheets. In addition, turn in all scrap paper.

15. Ensure all information you wish to have evaluated as part of your answer is on your answer sheet. Scrap paper will be disposed of immediately following the examination.

16. To pass the examination, you must achieve a grade of 80% or greater.

17. There is a time limit of four (4) hours for completion of the examination.

18. When you are done and have turned in your examination, leave the examination area (EXAMINER WILL DEFINE THE AREA). If you are found in this area while the examination is still in progress, your license may be denied or revoked.

QUESTION: 001 (2.00)

Match the class of fires listed below in column A with the materials involved listed in column B.
(4 answers required at 0.5 each)

Column A (Class of fire)	Column B (materials involved)
_____a. Alpha	1. Flammable liquids, gases, or greases
_____b. Bravo	2. Combustible metals
_____c. Charlie	3. Ordinary combustibles (paper, wood, etc.)
_____d. Delta	4. Energized electrical equipment

QUESTION: 002 (1.00)

In order to maintain the plant at 100% power, work must be performed inside the containment in a radiation field of 400 mRem/hr gamma and 2.0 Rem/hr fast neutron. The maintenance man selected is 24 years old and has a lifetime exposure through last quarter of 28 Rem on his NRC Form 4. How long can the man work in this area before he reaches a 10CFR20 limit?

a. Thirty minutes

b. Forty minutes

c. Fifty minutes

d. Sixty minutes

QUESTION: 003 (1.00)

During an emergency condition the STA reports the following:

1. Core Cooling - Red Path
2. Subcriticality - Yellow Path
3. Integrity - Orange Path
4. Heat Sink - Red Path

In what order should the current conditions be addressed?

a. 4,1,3,2

b. 4,3,1,2

c. 1,4,3,2

d. 1,3,4,2

QUESTION: 004 (1.00)

Temporary changes to procedures may be made if three provisions are met.

Which ONE of the following is NOT one of the these three provisions?

a. The intent of the original procedure is not altered.

b. The change is approved by two licensed SROs from the affected unit, one of whom shall be the on-duty Shift Supervisor.

c. The change is reviewed by PORC/SORC and approved by the Unit Superintendent/Station Superintendent within 14 days of implementation.

d. No more than three temporary changes presently exist for the procedure in question.

QUESTION: 005 (1.00)

Which ONE of the following individuals shall be denied access to the Control Room during emergencies, according to ACP 6.01 Control Room Procedure?

a. Public affairs personnel, under escort, who are being given a plant tour.

b. Individuals responsible for direct operation of the unit.

c. Individuals in a "trainee" status.

d. Personnel who may be required to support or advise the operation.

QUESTION: 006 (1.00)

In accordance with OP 3301D, if RCS temperature is greater than _____[1]_____ degrees F, VCT temperature must not exceed _____[2]_____ degrees F to prevent damage to RCP seals. [choose the correct answer]

	[1]	[2]
a.	350	135
b.	350	150
c.	400	135
d.	400	150

QUESTION: 007 (1.00)

Why must a positive discharge pressure be maintained in the U-1 stack when the Supplemental Leak Collection and Release System (SLCRS) is required to be operable?

a. To prevent backflow from U-1 and cause an uncontrolled release to the service building.

b. To prevent backflow from U-1 and contaminate the Auxiliary Building.

c. To ensure a flow path exists and prevent overpressurizing the SLCRS system.

d. To ensure a flow path exists and prevent a high differential pressure across the SLCRS blower.

QUESTION: 008 (1.00)

Reactor power is 6% during a shutdown when intermediate range channel N-36 fails HIGH. Which ONE of the following statements describes HOW this failure affects the reactor shutdown and subsequent operation of the Nuclear Instrumentation system?

a. The reactor will trip on high IR flux, and source range NIs will reenergize when N-35 decreases to the proper setpoint.

b. The reactor will trip on high IR flux, and source range NIs will have to be manually reenergized.

c. The reactor will not trip, and source range NIs will reenergize when N-35 decreases to the proper setpoint.

d. The reactor will not trip, and source range NIs will have to be manually reenergized.

QUESTION: 009 (1.00)

EOP 35 E-3 [Steam Generator Tube Rupture] step 13 states, "Check Ruptured S/G Pressure - Greater than 520 psig." Subsequent steps direct the operator to dump steam from the intact S/Gs as rapidly as possible in order to establish adequate subcooling margin.

Which ONE of the following statements describes the BASIS for checking ruptured S/G pressure greater than 520 psig?

a. To ensure that the ruptured S/G is not also faulted, which would lead to an ORANGE condition on the RCS Integrity CSF status tree on a subsequent cooldown.

b. To ensure that RCS pressure will be less than ruptured S/G pressure after the cooldown to stop primary to secondary leakage.

c. To ensure that the operator blocks the low steam line pressure SI signal, which would actuate below 513 psig.

d. To ensure an optimal RCS temperature is established which would preclude a return to criticality during the rapid RCS cooldown.

QUESTION: 010 (1.00)

The CVCS mixed-bed demineralizers can:

a. accept a maximum flow rate of no more than 75 gpm without resin bed channeling.

b. decrease RCS boron concentration by 50 ppm if placed into service unsaturated.

c. provides a decontamination factor of 100 for most fission products over the entire life of the core.

d. remove ionic isotopes, but not particulate matter.

QUESTION: 011 (1.00)

Which ONE of the following correctly describes the power train from the 480 VAC power source to the Reactor Trip Beakers:

a. Motor Breakers - Motor Generators - Generators Breakers - Reactor Trip Breakers

b. Generator Breakers - Motor Generators - Motor Breakers - Reactor Trip Breakers

c. Motor Breakers - Generator Breakers - Motor Generators - Reactor Trip Breakers

d. Generator Breakers - Motor Breakers - Motor Generators - Reactor Trip Breakers

QUESTION: 012 (1.00)

The loss of which ONE of the below signals would have a direct effect on the Main Feed Pump automatic speed control system?

a. Feed water flow

b. Steam header pressure

c. Steam generator level

d. Auctioneered high nuclear power

QUESTION: 013 (1.00)

Which ONE of the following is a protective reactor trip specifically intended to provide DNB protection during a RAPID TRANSIENT?

a. Overtemperature Delta - T

b. Power range high neutron flux (low setpoint)

c. Overpower Delta - T

d. Reactor coolant low flow

QUESTION: 014 (2.00)

For each posted radiological area in Column A select the appropriate criteria from Column B. (The items in Column B may be used once, more than once, or not at all, and only a single answer may occupy one answer.) (4 answers required at 0.5 each)

Column A (Posted Radiological Area)	Column B (Criteria)
_____a. Radiation Area	1. Greater than .25 MPC of 10CFR20
_____b. High Radiation Area	2. Greater than 100 mrem in any one hour
_____c. Contaminated Area	3. Greater than 10 mrem/hour
_____d. Airborne Radioactivity Area	4. Greater than 10 DPM/100 square cm alpha
	5. Greater than 2.5 MPC
	6. Greater than or equal to 0.5 mrem
	7. Greater than 1000 DPM/100 square cm beta gamma

QUESTION: 015 (1.00)

Which ONE of the following RCS Piping penetrations extends into the coolant stream?

a. PZR Spray Line

b. PZR Surge Line

c. CVCS Normal Charging

d. RHR Pump Suction

QUESTION: 016 (1.00)

If PZR level transmitter LT 459 is selected for control when the reference leg for LT 459 develops a slow leak, which ONE of the following describes anticipated instrument or plant response?

	LT-459 PZR LVL INDICATION	LT-460 & 461 PZR LVL INDICATION	VCT LEVEL
a.	INCREASING	DECREASING	INCREASING
b.	DECREASING	INCREASING	INCREASING
c.	INCREASING	DECREASING	DECREASING
d.	DECREASING	INCREASING	DECREASING

QUESTION: 017 (1.00)

Which ONE of the following statements correctly describes the Containment Personnel Air Lock?

a. The inner and outer doors of the Containment Personnel Air Lock are interlocked.

b. The mechanical interlock of the Containment Personnel Air Lock cannot be defeated.

c. Interlocks prevent both equalizing valves being opened simultaneously.

d. An equalizing valve can only be operated if the same side door is closed and locked.

QUESTION: 018 (1.00)

Which ONE of the following parameters can be used to discriminate between a steamline rupture inside containment and a small break LOCA from an RCS line?

a. PZR level.

b. Increase in charging flow.

c. RCS temperature.

d. PZR pressure.

QUESTION: 019 (1.00)

The following conditions exist at Unit 3:

- Mode 4 - RCS Temp/Press is 210 F/450 psig
- Maintenance is being performed on the Containment Pressure Detectors
- An SI Signal is received by the ECCS circuitry

Which ONE of the below statements describes the response of the ECCS Accumulators, and the reason for that response?

a. The Accumulators will not discharge into the RCS, because the outlet valve's are shut with their power supply locked-out.

b. The Accumulators will not discharge into the RCS, because RCS pressure is less than P-11 (1950 psig.)

c. The Accumulators will discharge into the RCS, because the outlet valves are interlocked to open on an SI Signal.

d. The Accumulators will discharge into the RCS, because the outlet valve's are open with their power supply locked-out.

QUESTION: 020 (1.00)

If flashing is occurring in the letdown line, then charging flow is too _____(1)_____ or PCV-131 (letdown pressure control valve) has _____(2)_____ too far.

a. (1) Low, (2) opened

b. (1) Low, (2) closed

c. (1) High, (2) opened

d. (1) High, (2) closed

QUESTION: 021 (1.00)

Which ONE of the following describes a condition that requires immediate boration according to AOP 3566, "Immediate Boration?"

a. Shutdown Margin less than 1.5% delta K/K in MODE 2.

b. ROD CONTROL BANKS LIMIT LOW alarm in MODE 1.

c. Three out of four loop T-avgs reach 540 deg F after reactor trip.

d. Failure of two or more control rod clusters to fully insert following reactor trip.

QUESTION: 022 (1.00)

Which ONE of the following sets of conditions indicates centrifugal pump runout?

a. High discharge pressure, high flow, and high power requirements.

b. High discharge pressure,low flow, and low power requirements

c. Low discharge pressure, high flow, and low power requirements.

d. Low discharge pressure, high flow, and high power requirements.

QUESTION: 023 (1.00)

Which ONE of the following electrical power supplies is the preferred source for the 4.16 KV Bus 34C?

a. RSSA transformer

b. Train A emergency diesel

c. NSSA transformer via normal bus 34A

d. NSSB transformer via normal bus 35C

QUESTION: 024 (1.00)

Given the following situation:

- Steam generator B is faulted
- Performing actions of EOP 35 E-2, Faulted Steam Generator Isolation

Which ONE of the following actions concerning the TDAFW pump should be taken?

a. Run the TDAFW Pump until any narrow range SG level is above 34%.

b. Run the TDAFW Pump only if less than 450 gpm is available to the SGs from the motor driven AFW pumps.

c. Isolate the TDAFW Pump from the faulted S/G.

d. Shutdown the TDAFW Pump immediately.

QUESTION: 025 (1.00)

Which ONE of the following parameters is used to verify natural circulation per EOP 35 ES-0.2, "Natural Circulation Cooldown?"

a. Steam generator pressure decreasing.

b. RCS cold leg WR temperatures are increasing.

c. RVLMS indicates core is covered.

d. RCS hot leg WR temperatures near saturation temperature for steam generator pressures.

QUESTION: 026 (1.00)

Given the following conditions:

- RCS system solid.
- No RCPs have been running for 1 hour.
- Tave is at 180 degrees F.
- RCS system fill and vent have been completed.

Which ONE of the following conditions must exist prior to starting a Reactor Coolant pump per OP 3301D, "Reactor Coolant Pump Operations"?

a. VCT pressure greater than 10 psig.

b. Steam generator temperature of at least 50 degrees F greater than RCS system temperature.

c. Switchyard voltage greater than 345 KV.

d. A steam bubble in the pressurizer.

QUESTION: 027 (1.00)

Given the following conditions:

- Reactor power is 60%.
- Loop 1 Delta-T indicates LOW.
- Loop 1 Tave indicates HIGH.

Which ONE of the following Loop 1 RTD failures caused these indications?

a. T-hot failed high.

b. T-hot failed low.

c. T-cold failed high.

d. T-cold failed low.

QUESTION: 028 (1.00)

Which ONE of the following will automatically start the turbine driven AFW pump?

a. A safety injection signal.

b. 2/4 steam generator level detectors at low-low level setpoint on 2 steam generators.

c. Trip of both main feedwater pumps.

d. Loss of 4160V emergency busses 34C and 34D.

QUESTION: 029 (1.00)

Reactor power is 100% with the pressurizer level control selecto switch in the CHAN I-II position when the following sequence of events occurs. ASSUME NO operator action is taken.

- Charging flow increases to maximum.
- Letdown automatically isolates and heaters trip.
- Reactor trips on high pressurizer level.

Which ONE of the following describes the pressurizer level channel that failed and the direction of the failure?

a. Level channel I failed high.

b. Level channel I failed low.

c. Level channel II failed high.

d. Level channel II failed low.

QUESTION: 030 (1.00)

The Balance of Plant (BOP) Log is normally maintained and completed automatically by the plant process computer. If the plant process computer is NOT available, then in accordance with ACP 10.05, "Log Book Requirements", which ONE of the following correctly describes how the BOP log is MAINTAINED?

a. The Control Operator manually logs readings obtained from the Control Room instruments.

b. A Dedicated Operator manually logs readings obtained from the Control Room instruments.

c. The Control Operator manually scans the Safety Parameters Display System (SPDS) computer points and manually logs readings.

d. A Dedicated Operator manually scans the Safety Parameters Display System (SPDS) computer points and manually logs readings.

QUESTION: 031 (1.00)

Which ONE of the following statements correctly describes the LOCATION and CONTROL over the Movable Incore Detector System (MIDS) (HR3) key, a unique key that opens the movable incore system barrier gates?

a. The key is located in the Health Physics Office and is under the control of the Health Physics Supervisor.

b. The key is located in the Health Physics Office and is under the control of the Radiation Protection Supervisor.

c. The key is located in the Control Room and is under the control of the Shift Supervisor.

d. The key is located in the Control Room and is under the control of the Unit Director

QUESTION: 032 (1.00)

Which ONE of the following correctly describes the type of rod stop and the actuating conditions for the C-2, Rod Control Interlock?

a. Provides an automatic rod stop only; actuates if 1 of 2 Intermediate Range Nuclear Instruments exceeds 20% power.

b. Provides both automatic and manual rod stops; actuates if 1 of 2 Intermediate Range Nuclear Instruments exceeds 20% power.

c. Provides a manual rod stop only; actuates if 1 of 4 Power Range Nuclear Instruments exceeds 103% power.

d. Provides both automatic and manual rod stops; actuates if 1 of 4 Power Range Nuclear Instruments exceeds 103% power.

QUESTION: 033 (1.00)

Which ONE of the following statements correctly describes the detectors used in the Area Radiation Monitoring System?

a. Area monitors use ionization chambers to detect and measure beta and neutron exposure.

b. Area monitors use GM tubes to detect and measure gross gamma exposure rate.

c. Area monitors use scintillation detectors to detect and measure alpha and beta exposure rates.

d. Area monitors are Kaman detectors to detect and measure alpha, beta and neutron exposure rates.

QUESTION: 034 (1.00)

Given the following conditions:

- Plant startup is in progress
- Reactor power is 8%
- Pressurizer Level Control Selector Switch is in Position I-II
- Pressurizer Level Transmitter LT-460 fails high

Which ONE of the following correctly states the consequences of the LT-460 failure?

a. Technical Specification 3.0.3 action should be implemented because less than the minimum number of operable pressurizer level channels.

b. Technical Specification 3.3.1, Instrumentation, action is not required because power is less than P-7.

c. Charging flow must be manually decreased because charging flow will be increased to maximum flow by the failure.

d. Charging flow must be manually increased because charging flow will be reduced to minimum flow by the failure.

QUESTION: 035 (2.00)

Match the equipment or component in COLUMN A with the respective power supply in COLUMN B. [Note: The items in Column B may be used once, more than once, or not at all, and only a single answer may occupy one answer space]

[4 answers required at 0.5 each]

COLUMN A Equipment/Component	COLUMN B Power Supply
_____a. Safety Related MCCs	1. Busses 35A thru D
_____b. Battery Chargers	2. Busses 34A/B
_____c. RPCCW Pumps	3. Busses 32A thru G
_____d. High Head SI Pumps	4. Busses 32-2T, -2R, -2U, -2W & 32-3T
	5. Busses 32R, 32T, 32U, & 32W
	6. Busses 34C/D

QUESTION: 036 (2.00)

Match the Radiation Monitor in COLUMN A to the automatic Function in COLUMN B that will occur if the radiation monitor alarms HIGH. [Note: The items in COLUMN B may be used only once or not at all, and only a single answer may occupy one answer space.]

[4 answers required at 0.5 each]

COLUMN A (Radiation Monitor)	COLUMN B (Automatic Function)
_____a. ARC 21-1 Air Ejector Exhaust	1. Diverts discharge back to sump
_____b. CNA-47-1 Aux. Condensate Flash Tank Discharge	2. Directs effluent to evaporator feed tanks
_____c. HVC-16A Control Building Radiation Monitor	3. Shuts S/G blowdown containment isolation
_____d. RMS-41-1 Fuel Drop Monitor	4. Isolates liquid flow into and out of Degassifier
	5. Isolates containment purge and exhaust
	6. Initiates control building isolation

QUESTION: 037 (1.00)

Given the following conditions:

- A large break LOCA has occurred.
- Appropriate actions in accordance with EOP 35 E-0, "Reactor Trip and Safety Injection," and EOP 35 E-1, "Loss of Reactor or Secondary Coolant," have been completed.
- ECCS is operating in cold leg recirculation mode.
- RCS pressure is stable at 200 psig.

Which ONE of the following statements correctly describes the primary method of decay heat removal?

a. The condensation of reflux boiling in the S/Gs.

b. Heat transfer between the RCS and the S/Gs due to natural circulation flow.

c. Heat transfer between the RCS and the S/Gs due to forced circulation flow.

d. The injection of water from the containment sump and the removal of steam/water out from the break.

QUESTION: 038 (1.00)

A loss of which ONE of the following DC buses will NOT require a reactor trip?

a. DC buses 301A-1

b. DC buses 301B-1

c. DC buses 301D-1

d. DC buses 301A-2

QUESTION: 039 (1.00)

When operating in Mode 1, which ONE of the following should be performed if both Fuel Pool Area Radiation Monitors are out of service?

a. Perform Technical Specification 3.0.3 actions

b. Fuel pool area monitor failure does not require technical specification action

c. Install and operate a portable continuous monitor

d. Restore at least one monitor to OPERABLE status within 4 hours

QUESTION: 040 (1.00)

In accordance with AOP 3562, "Loss of Instrument Air," the reactor should be tripped if instrument air pressure is rapidly decreasing.

Which ONE of the following conditions also requires a reactor trip during a loss/malfunction of the instrument air system?

a. Loss of pressurizer spray

b. Loss of reactor plant makeup

c. Loss of feedwater control

d. Loss of reactor plant letdown

QUESTION: 041 (1.00)

The following plant conditions exists:

- all system in auto
- Mode 1 at 100%
- letdown flow 75 gpm
- seal injection flow 32 gpm
- charging flow 75 gpm
- pressurizer level 61% (constant)
- containment humidity (increasing)

Which ONE of the following statements describes the above conditions:

a. RCS leakage is 28 gpm and in excess of Technical Specifications allowable 1 gpm unidentified leakage.

b. RCS leakage is 40 gpm which is within the allowable 40 gpm (8 per pump) controlled leakage limit of Technical Specifications.

c. RCS leakage is 8 gpm and within the allows 10 gpm identified limit of Technical Specifications.

d. RCS leakage is 20 gpm and in excess of the 1 gpm unidentified leakage limit in Technical Specifications.

QUESTION: 042 (1.00)

In response to a LOCA event, the operating crew has implemented the emergency procedures and are currently in EOP 35 F-1 (LOSS OF REACTOR OR SECONDARY COOLANT). Step 1 of E-1 (check if RCPs should be stopped) was completed with RCS pressure at 1700 psig. One minute later, while on step 3 (check intact SG levels), RCS pressure drops to 1200 psig.

Which ONE of the following actions should be taken?

a. Continue on with step 3.

b. Immediately trip all RCPs.

c. Secure RHR pumps.

d. Verify one charging or SI pump running and trip the RCPs.

QUESTION: 043 (1.00)

Which ONE of the following describes the use of adverse containment values in the event of a LOCA?

a. If containment temperature or radiation exceeds the stated value on the foldout page, adverse containment values are used for the duration of the event.

b. Once in adverse conditions because of temperature and radiation conditions, normal values can be used, if temperature and radiation conditions decrease to less than the foldout page values.

c. Once in adverse conditions, a return to normal values can be made, if containment temperature was the only reason adverse conditions had been declared.

d. Once in adverse conditions, a return to normal values can be made, if containment radiation was the only reason adverse conditions had been declared.

QUESTION: 044 (1.00)

Which ONE of the following symptoms would most clearly differentiate between a large LOCA and a large Main Steam Line break inside containment?

a. Increasing containment radiation levels

b. Increasing containment sump levels

c. Increasing containment pressure

d. Decreasing pressurizer pressure

QUESTION: 045 (1.00)

The unit has experienced a LOCA and the transition from procedure E-1 to ES-1.2, POST LOCA COOLDOWN AND DEPRESSURIZATION, has been made.

Which ONE of the following conditions, when depressurizing, would identify voiding in the RCS?

a. Rapidly increasing pressurizer level.

b. Decreasing Safety Injection flow.

c. Increasing RCS pressure.

d. Rapid drop in subcooling.

QUESTION: 046 (1.00)

The Reactor Engineer desires to perform a special reactor physics test at power involving the insertion of Bank "D" control rods in "Bank Select." What feature of the rod control system will not be operational?

a. The slave cycler will not function.

b. The bank overlap unit will be defeated while in bank select.

c. The P/A converter will be OFF by 115 steps.

d. A "Rod Deviation" alarm will be bypassed.

QUESTION: 047 (1.00)

The reactor is at 100% power and rod control in automatic when one of the power range nuclear instruments rapidly fails high.

Which ONE of the following correctly describes control rod and plant response?

a. Rods move in until the power mismatch rate signal decays then move out to the original position to correct the temperature error.

b. Rods move in until the power mismatch rate signal decays, then remain at the new position with a reduced Tave.

c. Rods move out until the power mismatch rate signal decays, then move in to the original position to correct the temperature error.

d. Rods move out until the high power rod block is reached, then remain at the new position with an increased Tave.

QUESTION: 048 (1.00)

Under which ONE of the following conditions is a reactor core most likely to have a POSITIVE moderator temperature coefficient?

a. High coolant temperature at end-of-life

b. High coolant temperature at beginning-of-life

c. Low coolant temperature at end-of-life

d. Low coolant temperature at beginning-of-life

QUESTION: 049 (1.00)

Which ONE of the following correctly describes what happens to differential boron reactivity worth (delta-K/K per ppm) as reactor coolant boron concentration is reduced?

a. Becomes less negative due to the increased number of water molecules in the core.

b. Becomes more negative due to the increased number of water molecules in the core.

c. Becomes less negative due to the decreased number of boron molecules in the core.

d. Becomes more negative due to the decreased number of boron molecules in the core.

QUESTION: 050 (1.00)

Which ONE of the following is minimized by the reactor coolant pump anti-reverse rotation device?

a. Starting voltage

b. Starting torque

c Heating seals in an idle loop

d. Restart time at low power levels

QUESTION: 051 (1.00)

While operating at 96% power, manual boration is initiated. Which ONE of the following correctly gives the INDICATIONS that the emergency boration valve (MV 8104) was inadvertently opened instead of flow control valve (FVC-110A)?

a. Tave begins to fall, the boric acid batch integrator advances more rapidly than normal, flow indicator (FI-183A) reads 35 GPM, and control rods begin to step out.

b. Tave remains steady, the boric acid batch integrator does not advance, flow indicator (FI-183A) reads 5 GPM, and control rods do not move.

c. Tave begins to fall, the boric acid batch integrator advances more rapidly than normal, flow indicator (FI-183A) reads 35 GPM, and control rods begin to step in.

d. Tave begins to fall, the boric acid batch integrator does not advance, flow indicator (FI-183A) reads 35 GPM, and control rods begin to step out.

QUESTION: 052 (1.00)

The following conditions are observed after the actuation of an SI:

- Charging pumps running
- SI pumps running
- RHR pumps running
- VCT level 60%
- RWST level 520,000 gal.
- Pressurizer level 20%
- RCS pressure 1675 psig

Which ONE of the below listed AUTOMATIC FUNCTION(S) will occur?

a. Charging pump suction will align to the VCT.

b. Containment recirc pump discharge to SI pump suction header valve opens.

c. RHR pumps stop.

d. No automatic functions will occur, SI pump suction realignment is interlocked to sump level.

QUESTION: 053 (1.00)

The ATWS Mitigation System Actuation Circuitry (AMSAC) has two variable time delays built into the system.

Which ONE of the following statements is the PURPOSE of the time delays?

a. To allow flow coast down to take effect before initiating auxiliary feedwater flow following an ATWS.

b. Allow operators to block AMSAC from the MCB at any power level in the event it is not needed.

c. To ensure the turbine is tripped before opening the steam dumps to prevent excessive cooldown rate.

d. To allow for level transients and for the SSPS to actuate first.

QUESTION: 054 (1.00)

During a shutdown the low pressurizer pressure and the low steamline pressure safety injections are blocked by the operator.

Which ONE of the following conditions will unblock safety injection?

a. Tave increases to 560 degrees F.

b. Steam pressure increases to 750 psig.

c. RCS pressure increases to 2000 psig.

d. A high rate of decrease of 125 psi/second on the main steam lines.

QUESTION: 055 (1.00)

The power range HI FLUX and RATE TRIP bistables of a failed power range detector are placed in the trip condition by which ONE of the methods below?

a. Taking the applicable Comparator Channel Defeat switch to the failed channel position at the Comparator and Rate Drawer.

b. Taking the applicable Power Mismatch Bypass switch to the failed channel position at the Detector Current Comparator Drawer.

c. Taking the applicable control power fuses out of one Power Range A Drawer.

d. Taking the applicable control power fuses out of the Comparator and Rate Drawer.

QUESTION: 056 (2.00)

Assume the reactor is operating at 100% power. Match the rapid NIS failures in COLUMN A with the correct affect on the plant in COLUMN B. (The items in COLUMN B may be used once, more than once, or not at all, and only a single answer may occupy one answer space.)

(4 answers required at 0.5 each)

COLUMN A (NIS failures)	COLUMN B (Affect on the plant)
_____a. 1 Power Range Channel Fails High	1. High setpoint reactor trip
	2. Low setpoint reactor trip
_____b. 1 Power Range Channel Fails Low	3. High power negative rate trip
_____c. 2 Power Range Channels Fail High	4. Rod withdrawal is prevented
_____d. 1 Power Range Channel Fails Low with 1 Power Range Channel previously removed from service IAW AOP 3571	5. Will not directly affect plant operations

QUESTION: 057 (1.00)

The reactor is shutdown with reactor decay heat being removed by natural circulation in the RCS. RCS pressure is 1500 psig and average core thermocouple temperature is 402 degrees F. Which ONE of the answers below gives the amount of subcooling that exists in the RCS?

a. 150 deg F

b. 200 deg F

c. 250 deg F

d. 300 deg F

QUESTION: 058 (1.00)

The plant is at 100% power with all automatic control systems in automatic when the "B" fourth point heater drains pump trips (3HDL-PIB).

Which ONE of the following statements describes the response of the plant (steady state to steady state)? Assume the reactor does not trip and no operator actions are taken.

a. Feed pump speed increases, main condensate flow decreases and reactor power increases.

b. Feed pump speed increases, main condensate flow increases and reactor power increases.

c. Feed pump speed decreases, main condensate flow decreases and reactor power decreases.

d. Feed pump speed decreases, main condensate flow increases and reactor power decreases.

QUESTION: 059 (1.00)

Which ONE of the following conditions will result in a Feedwater Isolation signal, which trips the Main Feed pumps? (Assume all systems normally.)

a. Reactor trip with 3 of 4 loop T-avgs < 564 F.

b. A feed reg valve bypass valve fails open at 100% power.

c. Spurious Containment Isolation Phase A actuation.

d. Safety Injection is manually actuated.

QUESTION: 060 (1.00)

Which ONE of the following operating conditions has NO EFFECT in the prevention of brittle fracture of the reactor coolant system (RCS)?

a. Operating within prescribed heatup and cooldown rate limitations.

b. Operating with RCS temperature greater than nil ductility transition temperature.

c. Operating with RCS pressure low when RCS temperature is low.

d. Operating with a ramped RCS temperature as power level varies.

QUESTION: 061 (1.00)

Which ONE of the below statements describes how pressurizer level is maintained in the programmed band?

a. Letdown flow rate is adjusted automatically.

b. Charging pump speed is varied to regulate charging flow.

c. Spray flow rate is adjusted automatically.

d. FCV 121 position is varied to regulate charging flow.

QUESTION: 062 (1.00)

Which ONE of the following Reactor Trips provides the diverse (backup) trip if a trip is not generated by low steam generator level on loss of feedwater flow?

a. Power range flux high.

b. Pressurizer pressure high.

c. Over temperature Delta-T.

d. Pressurizer pressure low.

QUESTION: 063 (1.00)

Unit 3 is at full power when an SI occurs. All automatic actions function properly. It is determined there was no valid demand for an SI and EOP 35 ES-1.1, SI Termination has been entered.

Which ONE of the below statements describes what occurs when the operator attempts to RESET the SI signal?

a. Will not reset.

b. Will reset and return the SI actuation logic to its pre-safety injection conditions allowing auto and manual SI signals.

c. Will reset and block subsequent automatic SI signals only.

d. Will reset and block subsequent manual SI signals only.

QUESTION: 064 (1.00)

The "MCC LOSS OF CONTROL POWER" annunciator is in alarm on MB8. MCC 32-2C is deenergized and cannot be restored for 12 hours. All Digital Rod Position Indication (DRPI) is lost.

Which ONE of the statements below describes how DRPI can be restored prior to restoring MCC 32-2C?

a. Select MCC 32-1C by using the power transfer switch inside the main boards.

b. Run a power cable from data cabinet A to Data Cabinet B.

c. Select MCC 32-1M by using the power supply switch in the AUX BLDG.

d. Connect a bank of 15 VDC batteries to the back of the control board display unit.

QUESTION: 065 (1.00)

During operation, at 50% power, the controlling steam pressure channel, PT-514, for feedwater control of the A S/G fails LOW.

Which ONE of the following is the INITIAL RESPONSE that the operator would observe?

a. Feed flow decreases to compensate for decreased steam flow input to feedwater control.

b. A steam line isolation due to a high steam generator pressure rate.

c. A low steam line pressure SI.

d. The plant will not be affected by the failed steam pressure channel.

QUESTION: 066 (1.00)

While running fully loaded for a surveillance, the "A" Emergency Diesel is stopped using the EMERGENCY STOP pushbutton.

Which ONE of the below statements describes what will happen to the diesel, with no operator action, if a subsequent SIS signal occurs?

a. Not start

b. Start immediately

c. Will not start until 60 seconds after the output breaker opened

d. Will not start until 140 seconds after the diesel was shutdown

QUESTION: 067 (1.00)

The performance of an Emergency Diesel Load Sequencer test is in progress while in "TEST 1". The "LOP TEST" pushbutton has been depressed and the sequencer is stepping through its loading sequence. All "TEST/INHIBIT" switches are in "INHIBIT". The "SIS" light of external inputs received illuminates.

Which ONE of the following statements describes the EGLS action in this situation?

a. No change in sequence operation. It will continue through its "LOP TEST" sequence.

b. The [illegible] switches out of the TEST mode and responds to the "SIS" [illegible] with a SIS sequence.

c. [illegible] switches out of the TEST mode and responds to the [illegible] but no loads will be started with the "TEST/INHIBIT" [illegible] "INHIBIT".

d. The sequencer responds with a "SIS" and "LOP" sequence.

QUESTION: 068 (1.00)

The plant is in the REFUELING MODE with the reactor vessel head lifted about 2 feet off the flange for inspection, prior to filling the cavity. An Operator presses the control switch to open the RWST SUPPLY TO RHS SUCTION (3SIL*MV8812A).

Which ONE of the statements below describes what will happen?

a. The valve will stroke open and the RWST will empty into the refueling cavity.

b. The valve will open but a check valve will prevent RWST discharge into the RCS.

c. The valve will open but close automatically when the RWST LOW-LOW LEVEL alarm occurs.

d. The valve will not open because of an interlock with the loop suction valve.

QUESTION: 069 (1.00)

Which ONE of the statements below correctly gives the potential source of reactor coolant leakage into the "A" train side of RPCCW when the plant is operating at 100% power?

a. Charging pump cooling surge tank.

b. RPCCW heat exchanger.

c. Letdown heat exchanger.

d. Seal water heat exchanger.

QUESTION: 070 (1.00)

Which ONE of the statements below correctly indicates how the Reactor Plant Component Cooling Water (RPCCW) system would be affected by a CIA signal?

a. Closes containment supply and return cross-connects (3CCP*AOV179A/B and 180 A/B) if open and starts the RPCCW pumps.

b. Isolates the non-safety train headers (3CCP*AOP197A/B, 10 A/B, 194 A/B and 19 A/B) and provides cooling to containment air recirculation and neutron shield tank coolers (3CCP*MOV222-229).

c. Isolates the containment safety header (3CCP*MOV45A/B, 48 A/B and 49 A/B) and stops the RPCCW pumps.

d. Isolates the non-safety train (3CCP*AOP197A/B, 10 A/B, 194 A/B and 19 A/B), closes containment supply and return cross-connects (3CCP*AOV179A/B and 180 A/B) and closes the supply valves to containment air recirculation and neutron shield tank coolers (3CCP*MOV222-229).

QUESTION: 071 (1.00)

Which ONE of the statements below correctly describes how sodium hydroxide (NaOH) is added to the Quench Spray System following a CDA signal?

a. The chemical addition pump starts and pumps the NaOH to the spray rings.

b. The chemical addition pump starts and pumps the NaOH to the RWST.

c. The NaOH in the chemical addition tank gravity flows to the suction of the Quench Spray Pumps.

d. The NaOH in the chemical addition tank gravity flows to the RWST.

QUESTION: 072 (1.00)

During operation at 94% power, the operator notes the following conditions:

- Instrument Air System (IAS) Pressure 85 psig
- Instrument Air Low Header Pressure Alarm actuated

Which ONE of the following describes the expected IA response?

a. One IAS compressor running, service air compressor running, cross connect valve shut.

b. Two IAS compressors running, service air compressor not running, cross connect valve shut.

c. Two IAS compressors running, service air compressor not running, cross connect valve open.

d. Two IAS compressors running, service air compressor running, cross connect valve open.

QUESTION: 073 (1.00)

Given the following conditions:

- Reactor Power 94%
- Incore flux map indicates flux tilt ratio of 1.09

Which ONE of the following actions should the operator take?

a. Remain at 94% power.

b. Reduce power and trip set point by 7%.

c. Reduce power to less than 50%.

d. Commence shutdown to Hot Shutdown.

QUESTION: 074 (1.00)

Given the following conditions:

- Operating at 87% power
- Rod Control Banks Limit Lo annunciator actuated
- Rod Control Banks Limit Lo-Lo annunciator actuated
- No instrument failures

Which ONE of the below actions should the operator initially take?

a. Withdraw rods to clear the alarm.

b. Reduce power to clear the alarm.

c. Initiate "Immediate Boration of the RCS" in accordance with AOP-3566.

d. Trip the reactor and implement E-0.

QUESTION: 075 (1.00)

Given the following:

- Reactor power 37%
- No. 1 seal leakoff for RCP A at 6 gpm
- No. 1 seal outlet temperature for RCP A at 220 degrees F

To which ONE of the below procedures should the operator refer?

a. EOP 35 E-0, Reactor Trip or Safety Injection.

b. AOP 3554, RCP Trip or Seal Failure.

c. AOP 3555, Reactor Coolant Leak.

d. AOP 3561, Loss of Reactor Plant Component Cooling Water.

QUESTION: 076 (1.00)

The following plant conditions exist:

- The unit is operating at 100% power
- PZR pressure control is in AUTOMATIC
- A set of backup heaters is on to maintain the spray valves slightly open
- Actual PZR pressure is 2250 psia
- The PZR pressure master controller malfunctions and the setpoint is step changed to 2325 psia

Which ONE of the statements below lists the initial AUTOMATIC responses in the PZR pressure control system as a result of this malfunction?

a. Spray valves open PORV PVC-456 opens, and pressurizer heaters deenergize.

b. Spray valves open and pressurizer heaters deenergize.

c. Spray valves close and pressurizer heaters energize.

d. Spray valves open, PORV PVC-455A opens, and pressurizer heaters deenergize.

QUESTION: 077 (1.00)

Procedure EOP 35 ECA-0.0, LOSS OF ALL AC POWER, specifies four steps as IMMEDIATE ACTION steps. In addition to "Verify Reactor Trip," which ONE of the choices below are the remaining 3 steps in order?

a. Verify MSIVs closed, check if RCS is isolated, attempt to restore power to any train of AC emergency buses.

b. Close PRZR PORVs, verify MSIVs-closed, verify TDAFW pump running.

c. Close PRZR PORVs, attempt to restore power to any train of AC emergency busses, verify MSIVs-closed.

d. Check all turbine stop valves closed, check if RCS is isolated, verify adequate AFW flow.

QUESTION: 078 (1.00)

Given the following indications/conditions:

- In EOP ECA-0.0, "Depressurize Intact S/Gs to 240 psig", is in progress
- S/G pressure 475 psig and decreasing in all S/Gs
- S/G Narrow Range level below indicating range in two S/Gs
- MSIVs closed
- Pressurizer Level below the indicating range

Which ONE of the statements below indicates the action to be taken in response to the given conditions?

a. Continue to cooldown until S/G pressure is 240 psig.

b. Stop the cooldown until pressurizer level has been restored.

c. Stop the cooldown until level is restored in all S/Gs.

d. Reduce auxiliary feedwater flow to < 525 gpm.

QUESTION: 079 (1.00)

Several solvent soaked rags left by the main control board have ignited.

Which ONE of the below listed reagents is the preferred method of extinguishing the fire?

a. Foam.

b. C02 Extinguisher.

c. Water Fog/Spray.

d. Dry powder extinguisher.

QUESTION: 080 (1.00)

Unit 3 is operating at 100% power when a toxic gas (carbon dioxide) forces the evacuation of the Control Room in accordance with EOP 3503, "Shutdown Outside Control Room."

Which ONE of the following is required prior to leaving the Control Room in addition to tripping the reactor?

a. Trip all SG Main Feed Pumps and start the motor driven Feed Pump.

b. Close the MSIVs and start all of the Charging Pumps?

c. Trip the Main Turbine and trip all RCPs.

d. Close the MSIVs and open the steam supplies to the TDAFW pump.

QUESTION: 081 (1.00)

The following conditions exist:

- No forced or natural RCS circulation flow
- Inadequate core cooling following a LOCA
- Performing actions of EOP 35 FR-C.1

Which ONE of the following is the primary reason for restoring level in all intact steam generator to greater than 4%?

a. Ensure SG level is within the protection grade range.

b. Maintain SGs as a heat sink.

c. Keep the feed ring covered to prevent water hammer.

d. Maintain the SG tubes covered to prevent thermal gradients from forming.

QUESTION: 082 (1.00)

A plant valve is YELLOW tagged as a caution against improper operation. Which of the following is true concerning this valve?

a. A BLUE tage may be hung on this valve.

b. Additional YELLOW tags and one BLUE tag may be hung on this valve.

c. A GREEN STRIPED HOLD tag may be hung on this valve.

d. No other color tags may be hung on this valve.

QUESTION: 083 (1.00)

Which ONE of the below trips does the RPSAS generate to protect the reactor from an uncontrolled RCCA bank withdrawal from a subcritical condition?

a. Overtemperature Delta T.

b. Overpower Delta T.

c. Source Range High Flux Trip.

d. High Neutron Flux (High Setpoint).

QUESTION: 084 (1.00)

Which ONE of the following statements is the reason for the one hour recovery time limit for a dropped rod?

a. Extended operation with a dropped rod may result in excessive localized power peaking when the rod is retrieved.

b. Xenon oscillations are directly proportional to the length of time that the rod was dropped and localized power peaking is inversely proportional to the magnitude of the xenon oscillations.

c. Extended operation with a dropped rod may invalidate the calculated low rod insertion limit and require that the Technical Specification limit be raised.

d. Extended operation with a dropped rod may require revision of the rod worth curves used in the shutdown margin calculation.

QUESTION: 085 (1.00)

The following sequence of events has occurred:

- The Unit was operating at 75% power with TAVG matched to TREF
- Rod control was in AUTOMATIC
- Rods started stepping out
- The RO placed rod control to MANUAL and rod motion stopped

Which ONE of the following conditions would have caused the above event?

a. Power range NI "A" failed high.

b. RCS narrow range Tc RTD fails open.

c. Turbine impulse pressure instrument P505 fails high.

d. Rod control urgent failure.

QUESTION: 086 (1.00)

Procedure EOP 35, E-0, Reactor Trip or Safety Injection, immediate action directs the operator to "Check all turbine stop valves closed."

Which ONE of the statements below is the purpose of this step?

a. Prevent overspeed of the turbine on output breaker trip.

b. Prevent overheating of the turbine from windage if vacuum is lost.

c. Prevent reverse power from driving the turbine.

d. Prevent uncontrolled cooldown of the RCS on a trip.

QUESTION: 087 (1.00)

Approximately 30 minutes after a large break LOCA, the Control Room operators are instructed to restore control power for the RHR Cold Leg Injection valves (3SIL & MV8809 A/B).

Which ONE of the following statements indicate why this action is required?

a. The application of control power will allow these valves to automatically stroke to their hot leg recirculation mode positions.

b. These valves must be stroked to transfer from the injection mode to the cold leg recirculation mode.

c. These valves are located inside containment and cannot be manually repositioned.

d. The application of control power will allow these valves to automatically stroke to their cold leg recirculation mode function.

QUESTION: 088 (1.00)

EOP FR-S-1 (Response to Nuclear Power Generation - ATWS), Step 2, directs the operators to "Verify Turbine Trip." If the turbine has not tripped, which ONE of the following is the PREFERRED ORDER of the RNO ACTIONS?

a. Manually run back the turbine, manually trip the turbine, close the MSIVs and bypass valves.

b Manually run back the turbine, close the MSIVs and bypass valves, manually trip the turbine.

c. Manually trip the turbine, close the MSIVs and bypass valves, manually run back the turbine.

d. Manually trip the turbine, manually run back the turbine, close the MSIVs and bypass valves.

QUESTION: 089 (1.00)

Following a loss of all AC power the crew has implemented EOP 35 ECA-0.0. Step 5 of ECA-0.0 requires certain equipment switches to be placed in the PULL-TO-LOCK position.

Which ONE of the below listed pumps is kept available to AUTOMATICALLY load on its respective bus?

a. RPCCW pump

b. SI pump

c. RHR pump

d. Service water pump

QUESTION: 090 (1.00)

During a reactor startup, the first reactivity addition caused the count rate to increase from 20 to 40 cps. The second reactivity addition caused the count rate to increase from 40 to 80 cps.

How do the values of the first and second reactivity additions compare?

a. The first and second reactivity additions were equal.

b. The first reactivity addition was larger.

c. The second reactivity addition was larger.

d. There is not enough data given to determine.

QUESTION: 091 (1.00)

In order to verify a locked valve's position, if the valve is locked open, attempt to operate in the _____ direction only; but if the valve is locked closed, attempt to operate in the _____ direction only.

a. Open, close.

b. Open, open

c. Close, close.

d. Close, open.

QUESTION: 092 (1.00)

An "X" quality tag next to a SPDS sensor input signal display indicates which ONE of the following concerning the INPUT SIGNAL.

The input signal ...

a. is using a substituted value.

b. is invalid.

c. cannot be verified correct with a similar input signal.

d. is accurate.

QUESTION: 093 (1.00)

A General Emergency has been declared at Millstone 3 and the station emergency organization has been activated. An off-duty Reactor Operator has been called at home and asked to come to work. Upon arrival at the site which ONE of the below listed people should he report to?

a. Shift Supervisor

b. Unit Director

c. Manager of Security

d. Manager of Resources

QUESTION: 094 (1.00)

Which ONE of the following is done after the ON-COMING shift assumes the Watch?

a. Conduct a shift brief.

b. Conduct a control board walkdown.

c. Discuss important items affecting plant conditions with the off-going shift.

d. Review logs and checklists.

QUESTION 95 (1.00)

There are four sources of makeup water to the Spent Fuel Pool. From the list below, identify the preferential order of use for the normal and emergency sources of makeup water to the Spent Fuel Pool.

a. RWST, Service Water System, Fire Protection Water System, and Primary Grade Water System.

b. RWST, Primary Grade Water System, Service Water System, and Fire Protection Water System.

c. Primary Grade Water System, RWST, Fire Protection Water System, and Service Water System.

d. Primary Grade Water System, RWST, Service Water System, and Fire Protection Water System.

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

ANSWER: 001 (2.00)

a. 3
b. 1
c. 4
d. 2 [4 answers required at 0.5 each)

REFERENCE:

NRC Read and Sign Program, pg. 15
(ACP-8.02)
(OP-3256)
EO - ACP-QA-2.05

194001K116 [3.5/4.2]

194001K116 ..(KA's)

ANSWER: 002 (1.00)

c.

REFERENCE:

10CFR20.201
10CFR20.202
EO - HP procedures 1

5(24-18) = 30 Rem; Lifetime limit = 30 - 28 = 2 Rem With Form 4 on file he is permitted 3 Rem/Qtr
Lifetime limit is more restrictive
0.4 Rem/hr + 2.0 Rem/hr = 2.4 Rem/hr
2.0 Rem/2.4 Rem/hr = 0.83 hrs = 50 minutes

KA 194001K104 [3.3/3.5]

194001K104 ..(KA's)

ANSWER: 003 (1.00)

c.

REFERENCE:

(Usage Rules)
RCA-0.0, pg. 3
EO - EOP development 6,7

KA 194001A102 [4.1/3.9]

194001A102 ..(KA's)

ANSWER: 004 (1.00)

d.

REFERENCE:

MP3 TS pgs. 6-16, 6-17
ACP-QA-3.02, pg. 30
EO-TS 17

KA 194001A103 [3.3/3.4]

194001A103 ..(KA's)

ANSWER: 005 (1.00)

a.

REFERENCE:

MP3 1986 Requal Objectives, ACP 6.01 Objectives, #4
ACP 6.01, page 9, 13

KA 194001K105 [3.1/3.4]

194001K105 ..(KA's)

ANSWER: 006 (1.00)

c.

REFERENCE:

MP3 CHS-02-C, Chemical and Volume Control, Rev. 1, page 31 and CHS-01-C-016

KA 004000K104 [3.4/3.8]

004000K104 ..(KA's)

ANSWER: 007 (1.00)

b.

REFERENCE:

MP3, Supplemental Leak Collection and Release System, page 6 and GWS-01-C-006

KA 071000G010 [2.5/2.7]

071000G010 ..(KA's)

ANSWER: 008 (1.00)

b.

REFERENCE:

AOP-3571, Rev. 2, Appendix E, Page 1
LOIT Lesson Plan NIS-01-C, Rev. 2, Page 32 & 38, and A71-01-C-006

000033A208 [3.3/3.4]

000033A208 ..(KA's)

ANSWER: 009 (1.00)

a.

REFERENCE:

LOIT Lesson Plan E30-01-C, Rev 1, Page 28, and E30-01-C-008

000038A215 [4.2/4.4]

000038A215 ..(KA's)

ANSWER: 010 (1.00)

b.

REFERENCE:

MP3 Chemical and Volume Control System, pages 6, 7, and D.C. #2-26, page 5 and CHS-01-C-013

KA 004020A213 [3.4/3.9]

004020A213 ..(KA's)

ANSWER: 011 (1.00)

a.

REFERENCE:

MP3 Rod Control System, page 26 and ROD-01-C-012

KA 001000K202 [3.6/3.7]

001000K202 ..(KA's)

ANSWER: 012 (1.00)

b.

REFERENCE:

MP3 Steam Generator Water Level Control System, pages 13-18 and SGC-01-C-006

KA 059000A211 [3.0/3.3]

059000A211 ..(KA's)

ANSWER: 013 (1.00)

d.

REFERENCE:

MP3, Reactor Protection Safeguard Actuation Systems, pages 39, 40, 41, 43, 44, 46 and RPS-01-C-040

KA 012000K501 [3.3/3.8]

012000K501 ..(KA's)

ANSWER: 014 (2.00)

a. 6
b. 2
c. 7
d. 1 (4 answers required at 0.5 each)

REFERENCE:

MP3, SHP 4906, Rev. 8, page 2
KA 194001K103 [2.8/3.4]

194001K103 ..(KA's)

ANSWER: 015 (1.00)

a.

REFERENCE:

MP3, Pressurizer and Pressure Relief Tank, page 6

KA 002000K109 [4.1/4.1]

002000K109 ..(KA's)

ANSWER: 016 (1.00)

a.

REFERENCE:

MP3, Pressurizer Pressure and Level Control, pages 18 & 19 and PPL-01-C-021

KA 011000A210 [3.4/3.6]

011000A210 ..(KA's)

ANSWER: 017 (1.00)

a

REFERENCE:

MP3 Containment Text, page 9

KA 103000K404 [2.5/3.2]

103000K404 ..(KA's)

ANSWER: 018 (1.00)

c.

REFERENCE:

MP3 AOP 3555, Rev. 1, page 2 and A55-01-C-001.

000009A101 [4.4/4.3]

000009A101 ..(KA's)

ANSWER: 019 (1.00)

a.

REFERENCE:

MP3, Emergency Core Cooling System, page 40 and ECC-01-C-021

KA 006000K410 [3.6/3.7]

006000K410 ..(KA's)

ANSWER: 020 (1.00)

a.

REFERENCE:

MP3 Chemical and Volume Control System, page 5 and CHS-01-C-010

KA 004010K403 [3.1/3.6]

004010K403 ..(KA's)

ANSWER: 021 (1.00)

d.

REFERENCE:

MP3, AOP 3566, Rev. 3, page 2 and A66-01-C-001.

000024K301 [4.1/4.4]

000024K301 ..(KA's)

ANSWER: 022 (1.00)

d.

REFERENCE:

Westinghouse, Thermal-Hydraulic Principles and Applications to the Pressurized Water Reactor II and ECC-01-C-006

KA 006000K613 [2.6/2.9]

006000K613 ..(KA's)

ANSWER: 023 (1.00)

c.

REFERENCE:

MP3 4160 Volt Electrical Distribution System, page 7 and 4KV-01-C-012

KA 062000K104 [3.7/4.2]

062000K104 ..(KA's)

ANSWER: 024 (1.00)

c.

REFERENCE:

MP3 EOP 35 E-2, Rev. 5, page 5 and E20-01-C-006

KA 000040A110 [4.1/4.1]

000040A110 ..(KA's)

ANSWER: 025 (1.00)

a.

REFERENCE:

MP3 EOP ES-0.2, Rev. 7, page 13 and S01-01-C-006.

000009A237 [4.2/4.5]

000009A237 ..(KA's)

ANSWER: 026 (1.00)

d.

REFERENCE:

MP3 OP 3301D, Rev. 3, page 6 and RCP-01-C-024

KA 002000K113 [4.1/4.2]

002000K113 ..(KA's)

ANSWER: 027 (1.00)

c.

REFERENCE:

MP3 Temperature Indicating System, pages 4-6, and TIS-01-C-009

KA 016000A201 [3.0/3.1]

016000A201 ..(KA's)

ANSWER: 028 (1.00)

b.

REFERENCE:

MP3 Auxiliary Feedwater System, page 8 and FWA-01-C-004

KA 061000A301 [4.2/4.2]

061000A301 ..(KA's)

ANSWER: 029 (1.00)

b.

REFERENCE:

MP3 Pressurizer Pressure and Level Control, page 20 and A71-01-C-011.

000028A202 [3.4/3.8]

000028A202 ..(KA's)

ANSWER: 030 (1.00)

a.

REFERENCE:

ACP-10.05, Rev. p. 6

KA 194001A106 [3.4/3.4]

194001A106 ..(KA's)

ANSWER: 031 (1.00)

~~d.~~ c.

REFERENCE:

MP3 ACP 7.04A, Rev. 8, pages 3, 7 and 8

194001K103 ..(KA's)

ANSWER: 032 (1.00)

d.

REFERENCE:

MP3 Rod Control System Data Chapter, page 1 and ROD-01-C-009

KA 001000K407 [3.7/3.8]

001000K407 ..(KA's)

ANSWER: 033 (1.00)

b.

REFERENCE:

MP3, Radiation Monitoring System, pages 3-5, and RMS-01-C-001

KA 072000K501 [2.7/3.0]

072000K501 ..(KA's)

ANSWER: 034 (1.00)

b.

REFERENCE:

MP3 Technical Specification Table 3.3-1

KA 011000G005 [3.2/3.8]

011000G005 ..(KA's)

ANSWER: 035 (2.00)

a. 5
b. 4
c. 6
d. 6 [4 answers required at 0.5 each]

REFERENCE:

MP3, 120 VAC Electrical Distribution System, Rev. page 4, and 120-01-C-003
MP3, 480 V Electrical Distribution System, page 5, 480-01-C-000
MP3 4160 VAC Electrical Distribution System, Pages 4 & 5 and 4KV-01-C-002

KA 062000G009 [3.2/3.3]

062000G009 ..(KA's)

ANSWER: 036 (2.00)

a. 3
b. 1
c. 6
d. 5 (4 answers required at 0.5 each)

REFERENCE:

073000A401 [3.9/3.9]

073000A401 ..(KA's)

ANSWER: 037 (1.00)

d.

REFERENCE:

LOIT Lesson Plan S12-01-C, Rev. 1, p. 11

000011K101 [4.1/4.4]

000011K101 ..(KA's)

ANSWER: 038 (1.00)

d.

REFERENCE:

MP3 AOP-3563, Rev. 1, Pages 1 through 5 of Attachments A through F, and A63-01-C-000

000058A103 [3.1/3.3]

000058A103 ..(KA's)

ANSWER: 039 (1.00)

c.

REFERENCE:

Technical Specification 3.3.3.1 and RMS-01-C-008

000061A206 [3.2/4.1]

000061A206 ..(KA's)

ANSWER: 040 (1.00)

c.

REFERENCE:

MP3 AOP-3562, Rev. 1, page 3, and A62-01-C-002

KA 000065A206 [/]

000065A206 ..(KA's)

ANSWER: 041 (1.00)

d.

REFERENCE:

MP3 Technical Specifications, 23.4.6.2 and RCS-01-C-040

KA 002000G005 [3.6/4.1]

002000G005 ..(KA's)

ANSWER: 042 (1.00)

d.

REFERENCE:

MP3 EOP 35 E-0, Rev. 8, Foldout page and E10-01-C-000.

000011A103 [4.0/4.0]

000011A103 ..(KA's)

ANSWER: 043 (1.00)

c.

REFERENCE:

MP3, EOP 35 E-0, Rev. 10, page 4 and E001-01-C-018.

000011G012 [4.0/4.1]

000011G012 ..(KA's)

ANSWER: 044 (1.00)

a.

REFERENCE:

MP3 EOP 35 E-C, Rev. 10 pages 19 and 20 and E00-01-C-019

KA 000040A203 [4.6/4.7]

000040A203 ..(KA's)

ANSWER: 045 (1.00)

a.

REFERENCE:

MP3 EOP 35 ES-1.2, Rev. 4, page 8 and S12-01-C-006.

000011A204 [3.4/3.6]

000011A204 ..(KA's)

ANSWER: 046 (1.00)

b.

REFERENCE:

MP3 Rod Control System, page 34 and ROD-01-C-000

KA 001000G007 [3.2/3.3]

001000G007 ..(KA's)

ANSWER: 047 (1.00)

b.

REFERENCE:

MP3 Rod Control System, page 10 and ROD-01-C-006

KA 001000K105 [4.5/4.4]

001000K105 ..(KA's)

ANSWER: 048 (1.00)

d.

REFERENCE:

Westinghouse: Reactor Core Control for Large Pressurized Water Reactor, Chapter 3

KA 001000K515 [3.4/3.7]

001000K515 ..(KA's)

ANSWER: 049 (1.00)

d.

REFERENC

Westinghouse: Reactor Core Control for Large Pressurized Water Reactor, Chapter 5

KA 001000K528 [3.5/3.8]

001000K528 ..(KA's)

ANSWER: 050 (1.00)

b.

REFERENCE:

MP3 Reactor Coolant Pump, page 13 and RCP-01-C-002

KA 003000G007 [3.2/3.3]

003000G007 ..(KA's)

ANSWER: 051 (1.00)

d.

REFERENCE:

MP3 Primary Grade Water and Reactor Makeup Systems, pages 16 and 17

KA 004000A401 [3.8/3.9]

004000A401 ..(KA's)

ANSWER: 052 (1.00)

c.

REFERENCE:

MP3 ECCS, pages 64 & 65 and ECC-01-C-010

KA 013000G015 [4.1/4.2]

013000G015 ..(KA's)

ANSWER: 053 (1.00)

d.

REFERENCE:

MP3 AMSAC System, page 7

KA 013000K404 [4.3/4.5]

013000K404 ..(KA's)

ANSWER: 054 (1.00)

c.

REFERENCE:

MP3 OP 3208, page 22 and RPS-01-C-021

KA 013000A101 [4.0/4.2]

013000A101 ..(KA's)

ANSWER: 055 (1.00)

c.

REFERENCE:

MP3 AOP 3571, Appendix D, pages 1 & 2 and NIS-01-C-012

KA 015000A403 [3.8/3.9]

015000A403 ..(KA's)

ANSWER: 056 (2.00)

a. 4
b. 5
c. 1
d. 3 (4 answers required at 0.5 each)

REFERENCE:

MP3 RPS Actuation System, pages 39 and 40 and RPS-01-C-021

KA 015000K301 [4.1/4.2]

015000K301 ..(KA's)

ANSWER: 057 (1.00)

b.

REFERENCE:

Steam Tables

KA 017020K502 [3.7/4.0]

017020K502 ..(KA's)

ANSWER: 058 (1.00)

b.

REFERENCE:

MP3 Feedwacer Heater Vent and Drain System, pages 3 & 4 and FWH-01-C-013

KA 059000G015 [3.4/3.6]

059000G015 ..(KA's)

ANSWER: 059 (1.00)

d.

REFERENCE:

MP3 Main Feedwater System, page 12 and FWS-01-C-019

KA 059000A412 [3.4/3.5]

059000A412 ..(KA's)

ANSWER: 060 (1.00)

d.

REFERENCE:

Westinghouse, Thermal Hydraulic Principles and Applications to the Pressurized Water Reactor II

KA 002000K518 [3.3/3.6]

002000K518 ..(KA's)

ANSWER: 061 (1.00)

d.

REFERENCE:

MP3, Pressurizer Pressure and Level Control, page 21 and PPC-01-C-004.

KA 011000A101 [3.5/3.6]

011000A101 ..(KA's)

ANSWER: 062 (1.00)

b.

REFERENCE:

MP3, Reactor Protection Safeguard Actuation System, page 47 and RPS-01-C-020

KA 012000G004 [3.9/4.0]

012000G004 ..(KA's)

ANSWER: 063 (1.00)

c.

REFERENCE:

MP3, Functional Diagram Safeguard Actuation Signals, sheet 8 and RPS-01-C-022

KA 012000A406 [3.2/3.5]

012000A406 ..(KA's)

ANSWER: 064 (1.00)

c.

REFERENCE:

MP3 Rod Position Indicating System, page 3 and RPI-01-C-005

KA 014000A202 [3.1/3.6]

014000A202 ..(KA's)

ANSWER: 065 (1.00)

a.

REFERENCE:

MP3 Steam Generator Water Level Control System, page 9 and SGC-01-C-003.

KA 035010K405 [3.1/3.4]

035010K405 ..(KA's)

ANSWER: 066 (1.00)

a.

REFERENCE:

MP3 Diesel Generator and Support Systems, page 21 and EGS-01-C-014

KA 064000K302 [4.2/4.4]

064000K302 ..(KA's)

ANSWER: 067 (1.00)

b.

REFERENCE:

MP3 Diesel Generator Load Sequencer, page 5 and EDS-01-008

064050A303 [3.1/2.9]

064050A303 ..(KA's)

ANSWER: 068 (1.00)

a.

REFERENCE:

MP3 Residual Heat Removal System, pages 1, 3, 4 and RHS-01-C-004

KA 005000K111 [3.5/3.6]

005000K111 ..(KA's)

ANSWER: 069 (1.00)

c.

REFERENCE:

MP3 Reactor Plant Component Cooling Water System, page 2 & 3 and CCP-01-C-006

KA 008000A202 [3.2/3.5]

008000A202 ..(KA's)

ANSWER: 070 (1.00)

b.

REFERENCE:

MP3 Reactor Plant Component Cooling Water System, pages 21 & 22 and LCP-01-C-003

KA 008030A301 [3.0/3.1]

008030A301 ..(KA's)

ANSWER: 071 (1.00)

c.

REFERENCE:

MP3 Quench Spray System, page 8 and CDA-01-C-021

KA 027000K101 [3.4/3.7]

027000K101 ..(KA's)

ANSWER: 072 (1.00)

d.

REFERENCE:

MP3 Instrument Air System, pages 6-8 and PAS-01-C-003

KA 078000K303 [3.0/3.4]

078000K303 ..(KA's)

ANSWER: 073 (1.00)

c. or a

REFERENCE:

MP3 Technical Specifications 3.2.4, page 3/4 2-24 and ROD-01-C-028

KA 000005A201 [3.3/4.1]

000005A201 ..(KA's)

ANSWER: 074 (1.00)

c.

REFERENCE:

MP3 OP 3302A, Rev. 6, page 19 and A66-01-C-001

KA 000005K301 [4.0/4.3]

000005K301 ..(KA's)

ANSWER: 075 (1.00)

b.

REFERENCE:

MP3 OP 3301D, Rev. 3, pages 28 & 29 and A54-01-C-001

KA 000015A122 [4.0/4.2]

000015A122 ..(KA's)

ANSWER: 076 (1.00)

c.

REFERENCE:

MP3 Pressurizer Pressure and Level Control, pages 6 & 7 and PPL-01-C-004

KA 000027A210 [3.9/3.6]

000027A210 ..(KA's)

ANSWER: 077 (1.00)

d.

REFERENCE:

MP3 EOP 35 ECA-0.0, pages 3&4, and A00-01-C-008

000055G010 [4.1/4.3]

000055G010 ..(KA's)

ANSWER: 078 (1.00)

a.

REFERENCE:

MP3 EOP 35 ECA-0.0, Rev. 5, page 15 and A001-01-C-007

000055G007 [3.6/3.7]

000055G007 ..(KA's)

ANSWER: 079 (1.00)

d.

REFERENCE:

MP3 ACP-QA-[illegible].05, Fire Protection Program, Rev. 25

000067K102 [3.1/3.9]

000067K102 ..(KA's)

ANSWER: 080 (1.00)

d.

REFERENCE:

MP3 EOP 3503, Rev. 6, page 3 and EO3-01-C-000.

000068K318 [/]

000068K318 ..(KA's)

ANSWER: 081 (1.00)

b.

REFERENCE:

MP3, EOP 35 FR-C.1, Rev. 4, page 8 and FC1-01-C-006.

000074K302 [3.7/4.2]

000074K302 ..(KA's)

ANSWER: 082 (1.00)

d.

REFERENCE:

ACP-QA-2.06A

194001K102 ..(KA's)

ANSWER: 083 (1.00)

c.

REFERENCE:

MP3 Reactor Protection Safeguard Actuation System, page 37 and RPS-01-C-020.

000001K102 [3.9/4.0]

000001K102 ..(KA's)

ANSWER: 084 (1.00)

a.

REFERENCE:

MP3, AOP 3552, Rev. 1, Appendix A, page 1, and A52-01-C-006.

000003G007 [3.4/3.6]

000003G007 ..(KA's)

ANSWER: 085 (1.00)

c.

REFERENCE:

MP3 Rod Control System, page 10 and ROD-01-C-006.

000001A205 [4.4/4.6]

000001A205 ..(KA's)

ANSWER: 086 (1.00)

d.

REFERENCE:

MP3 EOP 35 E-0, Rev. 10, page 4 and E00-01-C-006.

000007K103 [3.7/4.0]

000007K103 ..(KA's)

ANSWER: 087 (1.00)

b.

REFERENCE:

MP3 EOP 35 ES 1.3, Rev. 4, page 4 and PHS-01-C-010.

000025K303 [3.9/4.1]

000025K303 ..(KA's)

ANSWER: 088 (1.00)

d.

REFERENCE:

FS1-01-C, EOP FR-S.1, Response to Nuclear Power Generation - ATWS, Page 6, Para 3.c, and FS1-01-C-003

000029G010 [4.5/4.5]

000029G010 ..(KA's)

ANSWER: 089 (1.00)

d.

REFERENCE:

MP3 EOP 35 ECA-0.0, Rev. 5, page 7 and A00-01-C-005.

000056A107 [3.2/3.2]

000056A107 ..(KA's)

ANSWER: 090 (1.00)

b.

REFERENCE:

MP3, Reactor Operations Lesson Plan, pp. 13-15
Neutron Sources and Subcritical Multiplication Lesson Plan, pp., 11-22
Objective-1986 RQ, Reactor Theory 3, 1987 RQ 4-B1

KA 001000K518 [4.2/4.3]

001000K518 ..(KA's)

ANSWER: 091 (1.00)

c.

REFERENCE:

MP3 ACP-QA-2.2D, Rev. 3, page 5

KA 194001K101 [3.6/3.7]

194001K101 ..(KA's)

ANSWER: 092 (1.00)

b.

REFERENCE:

MP3 OP3394, Rev. 4

KA 194001A115 [3.1/3.4]

194001A115 ..(KA's)

ANSWER: 093 (1.00)

d.

REFERENCE:

MP3, Emergency Plan

KA 194001A116 [3.1/3.4]

194001A116 ..(KA's)

ANSWER: 094 (1.00)

a.

REFERENCE:

MP3 ALP 6.12, Rev. 3, page 4 and SRP-01-C-003, 010 and 012

KA 194001A109 [2.7/3.9]

194001A109 ..(KA's)

ANSWER: 095 (1.00)

c.

REFERENCE:

MP3 1987 Requal Objectives, p. 30, Item 10C/5A.
MP3 procedure 3305, pp. 10-14

[2.9/3.2]

033000K401 ..(KA's)

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

A N S W E R K E Y

001 MATCHING

a 3

b 1

c 4

d 2

MULTIPLE CHOICE

002 c

003 c

004 d

005 a

006 c

007 b

008 b

009 a

010 b

011 a

012 b

013 d

014 MATCHING

a 6

b 2

c 7

d 1

MULTIPLE CHOICE

015 a

016 a

017 ~~c~~ OS a

018 c

019 a

020 a

021 d

022 d

023 c

024 c

025 a

026 d

027 c

028 b

029 b

030 a

031 ~~d~~ OS c

032 d

033 b

034 b

A N S W E R K E Y

035 MATCHING

a 5

b 4

c 6

d 6

036 MATCHING

a 3

b 1

c 6

d 5

MULTIPLE CHOICE

037 d

038 d

039 c

040 c

041 d

042 d

043 c

044 a

045 a

046 b

047 b

048 d

049 d

050 b

051 d

052 c

053 d

054 c

055 c

056 MATCHING

a 4

b 5

c 1

d 3

MULTIPLE CHOICE

057 b

058 b

059 d

060 d

061 d

062 b

063 c

064 c

065 a

066 a

A N S W E R K E Y

067	b	090	b
068	a	091	c
069	c	092	b
070	b	093	d
071	c	094	a
072	d	095	c
073	c or a		
074	c		
075	b		
076	c		
077	d		
078	a		
079	d		
080	d		
081	b		
082	d		
083	c		
084	a		
085	c		
086	d		
087	b		
088	d		
089	d		

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

R O E x a m P W R R e a c t o r

O r g a n i z e d b y Q u e s t i o n N u m b e r

QUESTION	VALUE	REFERENCE
001	2.00	3736
002	1.00	3737
003	1.00	3738
004	1.00	3754
005	1.00	4436
006	1.00	21904
007	1.00	21917
008	1.00	21970
009	1.00	21973
010	1.00	22106
011	1.00	22323
012	1.00	22347
013	1.00	22353
014	2.00	22666
015	1.00	22695
016	1.00	22698
017	1.00	22709
018	1.00	22733
019	1.00	22756
020	1.00	22964
021	1.00	22978
022	1.00	23024
023	1.00	23071
024	1.00	24055
025	1.00	24076
026	1.00	24097
027	1.00	24098
028	1.00	24127
029	1.00	24133
030	1.00	26114
031	1.00	26120
032	1.00	26125
033	1.00	26145
034	1.00	26154
035	2.00	26159
036	2.00	26162
037	1.00	26192
038	1.00	26202
039	1.00	26203
040	1.00	26205
041	1.00	26363
042	1.00	26412
043	1.00	26481
044	1.00	26487
045	1.00	26507
046	1.00	9000001
047	1.00	9000002
048	1.00	9000004

049 1.00 9000005

TEST CROSS REFERENCE

R O E x a m P W R R e a c t o r

O r g a n i z e d b y Q u e s t i o n N u m b e r

QUESTION	VALUE	REFERENCE
050	1.00	9000007
051	1.00	9000008
052	1.00	9000012
053	1.00	9000013
054	1.00	9000014
055	1.00	9000015
056	2.00	9000016
057	1.00	9000017
058	1.00	9000018
059	1.00	9000019
060	1.00	9000026
061	1.00	9000031
062	1.00	9000033
063	1.00	9000034
064	1.00	9000036
065	1.00	9000038
066	1.00	9000041
067	1.00	9000042
068	1.00	9000044
069	1.00	9000045
070	1.00	9000046
071	1.00	9000047
072	1.00	9000048
073	1.00	9000050
074	1.00	9000051
075	1.00	9000052
076	1.00	9000053
077	1.00	9000056
078	1.00	9000057
079	1.00	9000058
080	1.00	9000059
081	1.00	9000060
082	1.00	9000061
083	1.00	9000063
084	1.00	9000064
085	1.00	9000065
086	1.00	9000066
087	1.00	9000073
088	1.00	9000074
089	1.00	9000079
090	1.00	9000085
091	1.00	9000089
092	1.00	9000091
093	1.00	9000092
094	1.00	9000093

095 1.00

---

100 .00

100.00

TEST CROSS REFERENCE

RO Exam PWR Reactor

Organized by KA Group

PLANT WIDE GENERICS

QUESTION	VALUE	KA
003	1.00	194001A102
004	1.00	194001A103
030	1.00	194001A106
094	1.00	194001A109
092	1.00	194001A115
093	1.00	194001A116
091	1.00	194001K101
082	1.00	194001K102
014	2.00	194001K103
031	1.00	194001K103
002	1.00	194001K104
005	1.00	194001K105
001	2.00	194001K116

PWG Total	15.00	

PLANT SYSTEMS

Group I

QUESTION	VALUE	KA
046	1.00	001000G007
047	1.00	001000K105
011	1.00	001000K202
032	1.00	001000K407
048	1.00	1000K515
090	1.00	001000K518
049	1.00	001000K528
050	1.00	003000G007
051	1.00	004000A401
006	1.00	004000K104
020	1.00	004010K403
010	1.00	004020A213
054	1.00	013000A101
052	1.00	013000G015
053	1.00	013000K404

055	1.00	015000A403

056	2.00	015000K301
057	1.00	017020K502
012	1.00	059000A211
059	1.00	059000A412
058	1.00	059000G015
028	1.00	061000A301
007	1.00	071000G010
033	1.00	072000K501

TEST CROSS REFERENCE

RO Exam PWR Reactor
Organized by KA Group

PLANT SYSTEMS

Group I

QUESTION	VALUE	KA
PS-I Total	25.00	

Group II

QUESTION	VALUE	KA
041	1.00	002000G005
015	1.00	002000K109
026	1.00	002000K113
060	1.00	002000K518
019	1.00	006000K410
022	1.00	006000K613
061	1.00	011000A101
016	1.00	011000A210
034	1.00	011000G005
063	1.00	012000A406
062	1.00	012000G004
013	1.00	012000K501
064	1.00	014000A202
027	1.00	016000A201
065	1.00	035010K405
035	2.00	062000G009
023	1.00	062000K104
066	1.00	064000K302
067	1.00	064050A303
036	2.00	073000A401
095	1.00	033000K401
PS-II Total	23.00	

Group III

QUESTION	VALUE	KA

068	1.00	005000K111
069	1.00	008000A202
070	1.00	008030A301
071	1.00	027000K101
072	1.00	078000K303
017	1.00	103000K404
PS-III Total	6.00	
PS Total	54.00	

TEST CROSS REFERENCE

RO Exam PWR Reactor

Organized by KA Group

EMERGENCY PLANT EVOLUTIONS

Group I

QUESTION	VALUE	KA
073	1.00	000005A201
074	1.00	000005K301
075	1.00	000015A122
021	1.00	000024K301
076	1.00	000027A210
024	1.00	000040A110
044	1.00	000040A203
078	1.00	000055G007
077	1.00	000055G010
079	1.00	000067K102
080	1.00	000068K318
081	1.00	000074K302
EPE-I Total	12.00	

Group II

QUESTION	VALUE	KA
085	1.00	000001A205
083	1.00	000001K102
084	1.00	000003G007
086	1.00	000007K103
018	1.00	000009A101
025	1.00	000009A237
042	1.00	000011A103
045	1.00	000011A204
043	1.00	000011G012
037	1.00	000011K101
087	1.00	000025K303

038	1.00	000029C010

008	1.00	000033A208
009	1.00	000038A215
038	1.00	000058A103
039	1.00	000061A206
EPE-II Total	16.00	

Group III

QUESTION	VALUE	KA
029	1.00	000028A202
089	1.00	000056A107
040	1.00	000065A206

TEST CROSS REFERENCE

RO Exam PWR Reactor

Organized by KA Group

EMERGENCY PLANT EVOLUTIONS

Group III

QUESTION	VALUE	KA
EPE-III Total	3.00	
EPE Total	31.00	
Test Total	100.00	

ATTACHMENT 3

FACILITY COMMENTS REGARDING THE WRITTEN EXAMINATIONS

MILLSTONE UNIT 3

NRC WRITTEN EXAM COMMENTS

GENERAL COMMENTS

Both the Reactor Operator and Senior Reactor Operator Examinations were very well contructed. Questions were consistently unambiguous, discriminating and written to the appropriate level of license knowledge.

The following specific comments were derived from post-examiantion review by the training staff. All questions involved can be attributable to oversight by the facility reviewers on the pre-examination review.

REACTOR OPERATOR

Question #17: Choice "A" is the correct answer. (Ref: MP3 Containment Text, page 9; OP3312A, Section 7.5)

Question #31: Choice "C" is the correct answer. (Ref: OP 3361A, Section 3.3)

Question #73: The key assigns choice "C" as the correct answer. In fact, Tech. Specs. 3/4.2.4 identifies two actions under the given condition, allowing to remain at 94% power for a 2 hour period, after which the only correct choice is "C". In the interim, choice "A" is allowed. If this was clarified by the proctor during exam administration, this comment may be disregarded.

SENIOR REACTOR OPERATOR

Question #31: (Same as RO #17)

Question #76: (Same as RO #73)

Question #96: (Same as RO #31)

Question #4: The new revision of EPIP 4010B has eliminated previously specified conditions for evacuation determination. Though the candidates may have been familiar with the old revision, the question intent is no longer applicable and should be eliminated from scoring.

Question #9: There is no correct answer. The failure of LT185 will cause full divert of letdown flow, but the other channel (LT112) controls makeup and will initiate 80 gpm at 41% level. Since this is greater than charging, level will cycle between 41 and 54%. This question should be deleted. (Ref: MP3 CVCS Text, pages 8 & 9; P&ID 104D)

ATTACHMENT 4

NRC RESPONSE TO FACILITY COMMENTS

Question (RO/SRO)	Response
17/31	Comment accepted. Due to a typographical error, the answer key should have been "A" instead of "C."
31/96	Comment accepted. Due to a typographical error, the answer key should have been "C" instead of "D."
73/76	Comment accepted partially. Due to the wording of the question and the choices provided, "A" and "C" will be acceptable responses for the reactor operator examination. "C" will remain the only acceptable response for the senior reactor operator examination question because its distractor "A" is different from the RO exam question distractor "A."
NA/04	Comment accepted. Since the procedure has been changed the exam question is no longer valid there the question has been deleted from the examination.
NA/09	Comment accepted. The question will be deleted because it was not technically correct.

ATTACHMENT 5

SIMULATOR FIDELITY REPORT

Facility Licensee: Northeast Nuclear Energy Company
P.O. Box 270
Hartford, Connecticut 06141-0270

Facility Docket Nos.: 50-423

Examinations Administered on: April 28, 1992

This report is to be used only to report observations. These observations do not constitute audit or inspection findings and are not, without further verification and review, indicative of non-compliance with 10 CFR 55.45(b). These observations do not affect NRC certification or approval of the simulation facility other than to provide information which may be used in future evaluations. No licensee action is required in response to these observations. During the conduct of the dynamic simulator examinations, the following items were observed:

The simulator performed well to permit a valid simulator examination to be administered. No weaknesses were observed. The simulator was used to run two scenarios in the morning and the same two scenarios in the afternoon. The simulator consistently modeled the morning scenarios and the afternoon scenarios. During the eight hours of constant use, the simulator did not unexpectedly "lockup" or "freeze." The only questionable simulator response was in the afternoon when the controlling pressurizer pressure channel failed high over a 120 second ramp and resulted in a reactor trip due to a rate sensitive low pressure trip. During the morning session this malfunction did not result in a reactor trip.