U.S. NUCLEAR REGULATORY COMMISSION
REGION I

DOCKET/REPORT NO.: 50-423/94-08 (OL)

LICENSEE: Northeast Nuclear Energy Company

FACILITY: Millstone Nuclear Power Station, Unit 3
Waterford, CT

EXAMINATION DATES: February 28 - March 3, 1994

NRC EXAMINERS: P. Bissett, Senior Operations Engineer/Examiner
J. D'Antonio, Operations Engineer/Examiner
W. Hemming, EG&G, Examiner

CHIEF EXAMINER: J. D'Antonio FOR P. BISSETT 4-15-94
Paul Bissett, Sr. Operations Engineer Date
BWR & PWR Section, OB, DRS

APPROVED BY: Glenn W. Meyer 4/15/94
Glenn Meyer, Chief Date
PWR & BWR Section, OB, DRS

EXECUTIVE SUMMARY

Operations

Initial examinations were administered to five reactor operator (RO) candidates at Millstone Unit 3 from February 28 to March 3, 1994. All candidates passed all portions of the written and operating examination and, thus, were issued licenses.

Strengths were noted by the examiners in the candidates' performance during the operational portion of the examination. Based upon observation of the simulator examinations, it was noted that crew communications and team work, for the most part, were strong and effective. The candidates' knowledge of plant procedures and familiarity of plant equipment were evident as demonstrated during the job performance measure portion of the examination.

Several generic weaknesses were noted from the grading of the examinations and also from the preexamination review, as noted in sections 2.0 and 3.0. Based upon the number of written examination comments submitted to the NRC regional office following completion of the examination, it was concluded that a poor written examination review was performed by the facility during the preexam review week. The examiners surmised that the weak management involvement in the entire examination process may have permitted other factors, such as the resolution of issues without management concurrence, the few reviewers involved, and the limited experience of the reviewers to adversely affect the review. Also, a few instances were noted in which applicable procedures contradicted each other or management philosophy contradicted operational procedures.

Training lesson plans needed improvement, based on the fact that many of the lesson plans did not correlate with the more recently updated system text descriptions, nor did the plans contain the depth of information that was provided in the system texts. Also, the majority of the plans contained numerous pen and ink changes, many illegible.

DETAILS

1.0 TYPE OF EXAMINATIONS: Initial

EXAMINATION RESULTS:

	RO PASS/FAIL
Written	5/0
Simulator	5/0
Walkthrough	5/0
Overall	5/0

2.0 PREEXAMINATION REVIEW

Prior to the administration of the reactor operator (RO) written examinations, one Millstone 3 (MS3) training representative and one operations department staff member, under security agreement, reviewed the written examination at the MS3 training center. The review, conducted during the week of February 14, 1994, was performed to ensure that the examination to be administered during the week of February 28 - March 3, 1994, was content valid and performance based. Also, all simulator scenarios and JPMs to be utilized during the examination were validated by the NRC on the MS3 simulator and in the plant. This validation was also accomplished during the week of February 14, 1994.

The examiners noted, during this preexam review, that management representatives from training were not involved, and that the facility reviewers who were involved were participating in their first NRC/facility review for an initial licensing examination. It was also noted that the experience levels of both individuals were somewhat limited, in that the operations representative had been licensed as a senior reactor operator (SRO) for less than two years, and the training representative had been in the Millstone 3 training department for less than three years. Nonetheless, the examiners concluded that the two reviewers did an acceptable job and raised numerous question content issues.

The examiners questioned upper management why they were not involved and why only two individuals, both of whom being new to this process, were assigned as reviewers. Management stated that they wanted to minimize the number of individuals on the security agreement so as to maximize the number of individuals still available for training and answering questions from the initial licensing candidates.

Management's decision to separate themselves from the review process placed an unnecessary burden of decision making upon the two assigned reviewers. This was evident during several situations that arose when it became rather difficult to come to a mutual agreement between the NRC and the facility reviewers in regard to the correct answer for a particular question. The facility reviewers were constrained since they were under the

security agreement and could not approach management for clarification or guidance. In a number of instances, there were contradictions between procedures and operational philosophy and the way the operators had been trained. Resolution, in these instances, was provided by the NRC's reliance on the decision making of the facility reviewers, who stated what they thought management would expect. After completion of the examination process, the facility's written exam comments took different positions than some of the resolutions previously achieved. This eventually resulted in the deletion of six questions and the addition of an answer to questions, resulting in two correct answers for six questions.

3.0 EXAMINATION OVERVIEW

3.1 Written Examination

The written examinations were administered on February 28, 1994, at the Millstone Nuclear Training Center. The reactor operator examinations were developed in accordance with the guidelines of 10 CFR 55.41, 55.43, and NUREG-1022, "Examiners Handbook for Developing Operator Licensing Written Examinations." The written examination originally consisted of 100 questions written in multiple choice format. The written examination and answer key is enclosed as Attachment 1 to this report. The training department was provided a copy of the as-administered written examination immediately after its administration in order to provide the facility the opportunity to comment on any validity issues with the examination questions. Formal written comments, in regard to 15 written examination questions, were provided to the NRC by senior Northeast Nuclear Energy Company (NNECo) management on March 11, 1994. Following a review of the facility comments, it was determined by the NRC that six of the questions should be deleted, resulting in an examination of 94 total written questions. Additionally, six other questions were determined to have two correct answers, one question had the answer changed, and two questions remained as written. These comments and subsequent resolution by the NRC are detailed in Attachments 2 and 3 of this report.

Some examples of why various questions had to be deleted, or resulted in two correct answers, included the following.

- Station operating procedures stated that reactor operators had the authority to initiate reactor protective system (RPS) functions, i.e., manually tripping the reactor, anytime they determined it was necessary to maintain the reactor plant in a safe operating condition. On the other hand, department management had stated that they preferred that the ROs receive direction from the SS or SCO prior to initiating RPS functions. A question that addressed this responsibility of an RO was modified to coincide with the operational philosophy of MS3 management as a result of discussion with the facility review team. Subsequent to the exam, it was determined that there was some misinterpretation as to exactly what management meant by SS or SCO direction.

Answers provided by the five candidates indicated that there was much confusion as to what they could and could not do, as three different answers were chosen.

- One question was developed in accordance with the MS3 lesson plan and system text material; however, it was later determined that the lesson plan and system text for the Safety Parameter Display System was in error. This material was not identified as being incorrect during the preexam review.

- On a couple of questions, the facility reviewers stated that they felt that the candidates should know the answer, or at least should know enough pertinent information to arrive at the correct answer, if certain modifications were made to the question. In each case, the original question was modified in such a manner to meet the reviewer's request; however, this resolution was later rejected by MS3's management in the letter to the NRC.

- In one instance, procedures conflicted with each other, thus requiring the correction of the answer key from one answer to another. This question dealt with the independent verification of a locked closed valve. Procedure 3-OPS-3.07, Table 1, required verifying the valve shut through actual valve manipulation, i.e., attempting to turn the valve handwheel in the closed direction; whereas, Procedure ACP-QA-2.20 required a check of the valve stem position or mechanical position indicator to determine that the valve is in the locked closed position.

3.2 NRC Review of NNECo Post-Examination Comments

As denoted above, NNECo management provided to the NRC on March 11, 1994, a total of 15 questions from the written examination which they concluded warranted additional review. Accompanying the 15 questions was supporting documentation that substantiated the reasoning behind their wanting a question to be either deleted or having more than one correct answer. Results of the NRC's review of the 15 questions can be found in Attachment 2 of the enclosed report.

As a result of this review, a couple of minor concerns were identified involving the supporting documentation that was submitted. The supporting documentation on MS3's position in regard to the validity of a question or an answer to a question was generally not well organized to identify the specific information within the submitted procedures. Each question had anywhere from 3-22 pages of supporting documentation. However, not one page of this supporting documentation highlighted that sentance(s), paragraph(s) or information that was pertinent to the question that was being reviewed.

Also, errors existed in the submittal. In one instance, the facility requested that credit for a particular question be given if answers "a" or "b" were chosen. The original answer key had "c" as the correct answer. Documentation provided by the facility, as did their writeup, supported answer "a" and "c" as the correct answers; however, none of their documentation

supported answer "b." Thus, they were requesting that credit be given for an answer that was incorrect. A quality review of information submitted to the NRC should have identified this error.

3.3 Weaknesses Identified During the Post-Examination Review

During a review of the graded written examinations, the following generic areas of weakness were identified. A weakness is considered generic if one half or more of the personnel taking the examination missed the same question. Question numbers are provided in parentheses. This information is being provided to assist in upgrading initial and requalification training programs. No response to the below listed items is needed.

- The difference in effects between a rod control urgent failure from a logic cabinet versus one from a power cabinet (RO #4).

- The various modes of operation and the subsequent effects on the plant for the RCS makeup control system (RO #11).

- The automatic actions that occur as a result of low water level in all steam generators coincident with a reactor trip (RO #15).

- The operation of the Failed Fuel Monitor, including what information can be found and where (RO #68).

- The proper emergency operating procedure usage hierarchy (RO #72).

- The bases as to why the RCP trip criteria does not apply once a controlled cooldown is initiated when in E-3, Steam Generator Tube Rupture (RO #86).

- The conditions that constitute adverse containment conditions (RO #97).

3.4 Operating Test

The operating tests were administered during March 1-3, 1994. The operating tests consisted of two dynamic simulator scenarios and 10 JPMs for each of the five ROs. Two oral questions were asked at the completion of each JPM. All candidates were also examined concerning administrative requirements of the Millstone 3 Station in addition to the scenarios and JPMs.

3.4.1 Dynamic Simulator Examination

Generally, the examiners noted that the candidates demonstrated strong and effective communications and teamwork during the simulator scenarios. The candidates were divided into crews for the dynamic simulator examination. Each crew was made up of two RO

positions and one SRO position. (Since there were no SROs being examined, this position was filled by a licensed training representative.) Each RO candidate participated in two scenarios, and rotated between the reactor operator and the balance of plant board positions. All candidates were successful in completing the scenarios under which they were examined. Communications were accomplished effectively, for the most part, throughout the conduct of the scenarios for all crews involved.

3.4.2 Job Performance Measures (JPMs)

The candidates exhibited excellent performance on the seven JPMs administered either on the simulator or in the control room. The examiners noted also that the ROs exhibited plant familiarity while locating various valves and switches during the performance of the three in-plant JPMs. All candidates demonstrated a through working knowledge of personal and radiological safety practices.

During the development of one of the JPMs, which dealt with starting and stopping a reactor coolant pump, it was determined that abnormal operating procedure 3554 "RCP Trip or Stopping an RCP at Power" was in error. If the procedure was followed as written, one would never get to the step that directed the stopping of the affected RCP. The facility was informed of the procedure deficiency and appropriate actions were taken to correct the identified deficiency.

4.0 SUMMARY OF NRC COMMENTS MADE AT THE EXIT MEETING

The NRC expressed appreciation to the training and operations staff for providing assistance during the examination process.

The NRC also discussed those items, as detailed in Sections 2.0 and 3.0, above.

There were no formal, post-written exam comments provided to the NRC by Northeast Nuclear Energy Company (NNECO) representatives during the exit meeting; however, the NRC stated that they would be given until March 11, 1994, to provide any post-written exam comments, should they so desire. (Fifteen questions, along with supporting documentation were later received by the NRC at the regional office on March 11, 1994. These comments and subsequent resolutions are included as Attachments 2 and 3 to this letter.)

Concerning the preexam review, the NRC stated that it was unusual for only two relatively inexperienced individuals to have been involved in the examination review that had been conducted during the week of February 14, 1994. Also, it was highly unusual for management representatives not to have been involved in any of the examination process.

The NRC also stated that the lesson plans, as received from the training facility and subsequently used in the development of the examination, were in dire need of revision. This conclusion was based upon the fact that many of the lesson plans did not correlate with

the more recently updated system text descriptions nor did they contain the depth of information that was provided in the system texts. Also, the majority of lesson plans contained numerous pen and ink changes, many of which were extremely difficult to read. The facility representatives acknowledged the examiner's observations and stated that were aware of the many shortcomings of the lesson plans and that this area of concern would be reviewed.

5.0 KEY PERSONNEL CONTACTED

Northeast Nuclear Energy Company:

* J. Arsenault	MP3 LOIT Coordinator
* F. Dacimo	Director, MP3
* R. Heidecker	Manager, Operator Training (MP1/MP2)
* B. Parrish	Assistant Supervisor Operator Training
* B. Ruth	MP3 Supervisor Operator Training
* J. Ruttar	MP3 Operations Manager
* S. Scace	VP-Nuclear, Operations Services
* J. Smith	Manager, Operator Training (MP3/CY)

* Denotes those personnel present at the exit meeting on March 3, 1994.

Other plant, technical, training and management personnel were contacted during the course of the examination.

ATTACHMENT 1

WRITTEN RO EXAMINATION AND ANSWER KEY

Master

Nuclear Regulatory Commission
Operator Licensing
Examination

This document is removed from
Official Use Only category on
date of examination.

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

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

092 a b c d ___

093 a b c d ___

094 a b c d ___

095 a b c d ___

096 a b c d ___

097 a b c d ___

098 a b c d ___

099 a b c d ___

100 a b c d ___

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

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

CANDIDATE'S NAME: _____

FACILITY: Millstone 3

REACTOR TYPE: PWR-WEC4

DATE ADMINISTERED: 94/02/28

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

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 IDENTIFIES the Reactor Coolant Pump (RCP) NUMBER 2 seal design and its source of seal water? Assume all RCP components are functioning as designed.

a. Rubbing face design supplied 3 Gallons Per HOUR from the #1 seal.

b. Rubbing face design supplied 3 Gallons Per MINUTE from the #1 seal.

c. Film riding design supplied 3 Gallons Per HOUR from the standpipe.

d. Film riding design supplied 800 CC Per HOUR from the standpipe.

QUESTION: 002 (1.00)

The following conditions exist at Unit 3:

Reactor.....	Mode 4
RCS Temperature.....	210 Degrees F
RCS Pressure.....	450 psig

Maintenance is being performed on the Containment Pressure Detectors.

An inadvertent SI Signal is received by the ECCS circuitry.

Which one of the following describes the response of the ECCS Accumulators to the inadvertent SI under the current plant conditions?

The accumulators will:

a. discharge into the RCS because the outlet valves will open on the SI signal.

b. discharge into the RCS because the outlet valves's are open with their power supply locked-out.

c. not discharge into the RCS because the outlet valves's are shut with their power supply locked-out.

d. not discharge into the RCS because RCS pressure is less than P-11 (1950 psig).

QUESTION: 003 (1.00)

Given the following plant conditions:

- Volume Control Tank (VCT) makeup is aligned for automatic makeup.
- VCT level channel LT 185 fails HIGH.

Which one of the following describes how actual VCT level responds to the instrument failure if NO OPERATOR ACTION is taken?

a. Decreases to VCT auto makeup setpoint, auto makeup starts.

b. Decreases until charging pump suction auto shifts to the RWST.

c. Increases until LCV-112A is full open.

d. Increases and stabilizes at a higher level less than full letdown divert.

QUESTION: 004 (1.00)

Which one of the following describes the actions that occur for a ROD CONTROL URGENT FAILURE in the logic cabinet vice one that occurs in a power cabinet?

A logic cabinet urgent failure:

a. initiates a rod control system rod freeze AND a power cabinet freeze.

b. initiates ONLY a rod control system rod freeze.

c. initiates a rod control system AND power cabinet rod freeze BUT allows individual group motion for the unaffected groups.

d. initiates ONLY a rod control system freeze in the manual and automatic modes.

QUESTION: 005 (1.00)

A slave cycler in the 1BD power cabinet simultaneously sends a "zero" current demand to both the stationary and movable bridge thyristors causing a rod control urgent failure. Without correcting the fault, the reactor operator presses the RESET pushbutton.

Which one of the following describes what will occur after the RESET is pressed?

a. The urgent failure annunciator and rod motion inhibit will remain locked in, unaffected by the reset.

b. The urgent failure annunciator will remain locked in but the rod motion inhibit will reset and remain reset until rod motion is attempted again.

c. The rod motion inhibit will remain locked in but the urgent failure annunciator will clear and remain clear until rod motion is attempted again.

d. The urgent failure annunciator and rod motion inhibit will reset and remain reset until rod motion is attempted again.

QUESTION: 006 (1.00)

Which one of the following describes the reference junctions as they relate to the incore thermocouple system?

a. Three thermocouples compensate for changes in containment temperature.

b. Two thermocouples compensate for changes in system impedance.

c. Three thermocouples compensate for minute differences in the incore thermocouple performance.

d. Two thermocouples compensate for changes in system conductivity.

DELETE

QUESTION: 007 (1.00)

With the reactor at 100% power steady state and all control systems in automatic, secondary pressure transmitter PT-507 fails to "zero".

Which one of the following would result due to this failure?

Main Feed Pumps:

a. decrease speed to minimum and Feed Reg Valves open to maximum.

b. increase speed to maximum and Feed Reg Valves open to maximum.

c. decrease speed to minimum and Feed Reg Valves close to minimum.

d. increase speed to maximum and Feed Reg Valves open to maximum.

QUESTION: 008 (1.00)

With the reactor steady at 90% power, the "A" Steam Generator (SG) Feed Reg Valve (FRV) has been placed in manual due to SG level decreasing.

Investigation of the failed FRV reveals the valve opens ONLY when a level error signal exists. When the level error signal decreases to "zero", the valve closes.

Which one of the following is the cause for this problem?

a. Density compensation in the controller has failed.

b. The proportional part of the controller has failed.

c. The integral part of the controller has failed.

d. The differential part of the controller has failed.

QUESTION: 009 (1.00)

Which one of the following describes when the Reactor Coolant Pump (RCP) overcurrent trip setpoint selector switches are procedurally required to be placed in the COLD position?

a. During RCP starting when STARTING currents are excessive.

b. Only during RCP starting with #1 seal flow less than 1 gpm AND primary temperature less than 350 degrees.

c. Only RCP starting during accident recovery.

d. When starting RCPs during accident recovery AND when RCP RUNNING currents are excessive.

QUESTION: 010 (1.00)

Referring to the supplied Figure 1, Controlled Leakage Shaft Seal, which one of the following formula represents an opening force on the RCP seal?

a. A2 greater than or equal to A1.

b. A2 greater than A1.

c. A2 less than or equal to A1.

d. A2 less than A1.

QUESTION: 011 (1.00)

The plant has initiated a ramp from 50% to 100% power. VCT makeup is in "auto" with boric acid flowrate set for blended flow. Decreasing RCS temperature requires the reactor operator to dilute. After making dilution calculations, the following plant conditions exist:

Time in life	BOL
Boron concentration	1200
Xenon concentration	Increasing
Boron Potentiometer	5
Primary Water Potentiometer	3
Boric Acid Batch Counter	300
Total Makeup Batch Counter	5000

When performing the dilution, the operator unknowingly places the makeup control mode switch in "manual", then places the makeup control switch to "start". Assuming no further operator action, which one of the below describes the plant response to this action?

a. Temperature will increase due to dilution until the Total Makeup batch counter reaches "zero", then decrease due to Xenon.

b. Temperature will decrease due to boration until the Boric Acid batch counter reaches "zero", then decrease due to Xenon.

c. Temperature will increase due to dilution until the Boric Acid batch counter reaches "zero", then decrease due to Xenon.

d. Temperature will decrease due to Xenon until equilibrium Xenon is achieved.

QUESTION: 012 (1.00)

Assuming that all Engineered Safety Features (ESF) function as designed following a large LOCA.

Which one of the following is the MAXIMUM time required to cool and depressurize the containment to subatmospheric conditions?

a. 1/2 hour.

b. 1 hour.

c. 12 hours.

d. 18 hours.

QUESTION: 013 (1.00)

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

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

a. They allow for level transients and actuation of SSPS.

b. They allow blocking AMSAC in the event it is not needed.

c. They ensure the turbine trips before steam dumps open preventing excessive cooldown.

d. They allow flow coast down before initiating auxiliary feedwater flow in an ATWS situation.

QUESTION: 014 (1.00)

A design basis LOCA occurs causing the successful activation of all Engineered Safety Features (ESF).

5 minutes after ESF activation, the weld on an RHR pump vent fails causing water to spray on the motor, subsequently causing the motor to short and the RHR pump to stop.

Which one of the following describes the acceptability of this event in regards to ESF systems design criteria?

a. It is acceptable as design criteria which allows for one passive AND one active failure to occur without loss of system capability.

b. It is acceptable because the passive and active failures were caused by a single event and thus are considered a single failure.

c. It is unacceptable as design criteria which allows for one active OR one passive failure to occur without loss of system capability.

d. It is unacceptable because the passive and active failures were caused by a single event and thus exceed single failure criteria.

DELETE

QUESTION: 015 (1.00)

Given the following:

At Time 0:
1. The reactor is tripped.
2. A low level condition of less than 5% exists on ALL FOUR Steam Generators (SG).

With the reactor initially operating at 100% power, which one of the following AUTOMATIC actions occur as a result of the SG low level condition?

a. The AFW pumps start AND the turbine trips immediately.

b. The AFW pumps start AND the turbine trips after a 25 second time delay.

c. The turbine trips immediately AND AFW pumps start after a 25 second time delay.

d. The AFW pumps start immediately AND the turbine trips after a 25 second time delay.

QUESTION: 016 (1.00)

The feedline pipe weld fails on Steam Generator "A" causing a large feedline break. Auxiliary Feedwater flowrate out the break will reach a maximum of about 300 gpm.

Which one of the following is the reason this maximum flowrate occurs?

a. Feedwater undergoing a phase change limits break flowrate.

b. AFW pump runout limits the break flowrate.

c. Throttle valves limit break flowrate.

d. Pipe sizing criteria limit break flowrate.

QUESTION: 017 (1.00)

Following an inadvertent Safety Injection Signal (SIS) from 5% power, the reactor operator notes the "A" Auxiliary Feedwater Pump (AFW) did not start.

Levels in all steam generators remained above the LO-LO level setpoint. No primary or secondary parameters moved out of their normal bands and no other protective actions occurred.

Which one of the following describes a reason why the SIS did not start the "A" AFW pump?

a. Level in at least one steam generator DID NOT decrease below 5%.

b. The local-remote switch is in the "local" position.

c. SIS must be coincident with a valid AMSAC signal.

d. SIS must be coincident with a LOP.

QUESTION: 018 (1.00)

Which one of the following Area Radiation Monitors has an automatic function associated with it?

a. Containment Structure High Range Accident Monitors, 3RMS*RE04 and RE05.

b. Spent Fuel Pool Bridge/Hoist Monitor, 3RMS-RE08.

c. Fuel Drop Accident Monitors, 3RMS*RE41 and RE42.

d. Spent Fuel Cask Area Monitor, 3RMS-RE29.

QUESTION: 019 (1.00)

A plant startup is in progress with power at 8 percent. Intermediate Range N-36 has failed "high" and the Level Trip switch is in the BYPASS position. Which one of the following describes the response when ONLY ONE of the two control power fuses blows on channel N-36?

a. A reactor trip will occur from both trains of protection.

c. A reactor trip will occur from only ONE train of protection.

b. Channel N-36 will remain unchanged.

d. A trip will occur when reactor power exceeds P-10.

QUESTION: 020 (1.00)

Given:

Reactor Power ..... 75% for 30 days.
Xenon ..... Equilibrium conditions.
NI Channel N-41 ..... Failed with all bistables tripped.

During a routine channel check, it is discovered that Power Range Channel N-44 has failed as is. The bistables for Channel N-44 ARE NOT tripped. The channel cannot be repaired within the allotted time and a down power ramp is commenced to Hot Standby in accordance with Technical Specifications.

Which one of the following describes the affect the channel failures have on plant operation during the down power ramp with no operator action?

a. The failures have no affect on plant operation.

b. P-7 will fail to block it's associated reactor trips.

c. The reactor will trip when power decreases below 10% power.

d. Source Range permissive P-6 will fail to activate.

QUESTION: 021 (1.00)

Which one of the following describes the MAXIMUM number of channels that can be bypassed using the POWER MISMATCH BYPASS on the Nuclear Instrumentation Miscellaneous Control and Indication Drawer?

a. 1 to prevent a loss of reactor protection.

b. 1 as rod stops use a 1 out of 4 coincidence.

c. 2 as rod control uses auctioneered high power.

d. 2 as the current comparators use average power.

QUESTION: 022 (1.00)

A reactor startup is in progress from a shutdown condition with all rods in. Shutdown rods are fully withdrawn.

While pulling the control banks to achieve criticality, the reactor operator fails to notice that rod speed is 30 spm rather than the normal 48 spm.

Which of the following describes the effects of the slower rod speed on actual critical conditions verses the predicted critical conditions of the ECC?

a. Actual critical power level will be the same as predicted power level with actual critical rod height higher than predicted.

b. Actual critical rod height will be the same as predicted critical rod height with actual power higher than predicted.

c. Actual critical rod height will be higher than predicted critical rod height with actual power lower than predicted.

d. Actual critical rod height will be lower than predicted critical rod height with actual power higher than predicted.

QUESTION: 023 (1.00)

Twelve hours ago, the reactor tripped from 100% power. During a subsequent reactor startup, the reactor operator is instructed to reset rod control and commence startup.

Rather than press the "Rod Drive Startup" pushbutton (labelled "STARTUP" on the MCB), the reactor operator manually resets all group step counters individually to zero, then withdraws all shutdown bank rods.

How will these actions affect the movement of the CONTROL BANKS?

a. Control banks will withdraw in normal bank overlap sequence using "manual" mode.

b. Control bank rods will move only using individual bank select.

c. Control banks will move using individual bank select or "manual", but not in "auto".

d. Control banks will fail to move regardless of the operational mode selected.

QUESTION: 024 (1.00)

The reactor operator reports the Digital Rod Position Indication (DRPI) appears to be without power and annunciator "MCC LOSS OF CONTROL POWER" on MB8 is alarming. The report from an outside operator is that MCC 32-2C is deenergized. Maintenance reports the MCC cannot be restored for 12 hours.

Which one of the following describes actions that can be taken to restore power to DRPI?

a. Transfer DRPI power to MCC 32-1C.

b. Transfer DRPI power to MCC 32-1M.

c. Connect DRPI to a +15 VDC source.

d. Transfer DRPI power from the normal +15 VDC source to the -15 VDC source.

QUESTION: 025 (1.00)

Which one of the following process radiation monitors DOES NOT have an automatic function associated with it?

a. 3SSR-RE08, Steam Generator Blowdown Monitor.

b. 3DAS-RE50, Turbine Building Drains Monitor.

c. 3LWS-RE70, Liquid Waste System Monitor.

d. 3CCP-RE31, Reactor Plant Component Cooling Water Monitor.

QUESTION: 026 (1.00)

The following conditions are observed after the actuation of a Safety Injection:

Charging pumps	All running
SI pumps	All running
RHR pumps	All running
VCT level	60%
RWST level	520,000 gallons
Pressurizer level	20%
RCS pressure	1675 psig

Which one of the following describes the AUTOMATIC FUNCTION(S) that will occur with the above conditions?

a. Charging pump suction crossover valves to RHR pump discharge will open.

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

c. The RHR pumps stop.

d. No automatic functions will occur.

QUESTION: 027 (1.00)

Moisture separating equipment in the Steam Generators ensures that steam quality is a minimum of 99.75 percent providing certain conditions are met.

Which one of the following violates those conditions required to maintain steam quality at 99.75 percent?

a. Steady state operation up to 100 percent steam flow with water maintained at the normal operating level.

b. Loading or unloading at 5 percent power per minute in the range of 15 to 100 percent of full steam flow.

c. A step load change of 10 percent power in the range of 15 to 100 percent of full steam flow.

d. A step decrease of 50 percent power with water maintained at the normal operating level and automatic steam dump operation.

QUESTION: 028 (1.00)

The plant is shutdown in Mode 5 with RCS temperature at 100 degrees F. RCS pressure control is in a normal lineup for the current RCS pressure and temperature. Pressure transmitter PT-403 fails "high".

Which one of the following describes the affect this failure will have on RCS pressure control?

a. Power Operated Relief Valve, PCV-456 will open.

b. Power Operated Relief Valve, PCV-455A will open.

c. Power Operated Relief Valves, PCV-456 AND 455A will open.

d. No relief valves will lift.

QUESTION: 029 (1.00)

The heatup and cooldown curves are generated taking into consideration the stresses to the reactor vessel during the heatup and cooldown transients.

Which one of the following describes the stresses placed on the vessel during the heatup and cooldown transients? (Inner Wall and Outer Wall refer to the inner and outer diameters of the reactor vessel.)

	Heatup Inner Wall	Heatup Outer Wall	Cooldown Inner Wall	Cooldown Outer Wall
a.	Tensile	Compressive	Tensile	Compressive
b.	Compressive	Tensile	Tensile	Compressive
c.	Tensile	Compressive	Compressive	Tensile
d.	Compressive	Tensile	Compressive	Tensile

QUESTION: 030 (1.00)

Refer to supplied Figure 2, "Integrated ECCS". Which one of the following describes the phase or mode of operation represented in the figure?

a. Standby mode.

b. Injection phase.

c. Cold leg recirculation phase.

d. Hot leg recirculation phase.

QUESTION: 031 (1.00)

The following conditions exist in the spent fuel pool:

Pool water level..... 5% (37 feet actual level).
Pool water temperature..... 120 degrees F.
Pool reactivity..... Keff = .91

Which one of the following describes compliance or non-compliance with limits imposed on the spent fuel pool?

	Pool level	Pool temperature	Pool reactivity
a.	compliance	compliance	compliance
b.	non-compliance	compliance	compliance
c.	non-compliance	non-compliance	compliance
d.	compliance	non-compliance	non-compliance

QUESTION: 032 (1.00)

The reactor is at 5% power with all pressurizer level and pressure control systems in "automatic." T-cold for loop one fails "high." Which one of the following describes the affect this failure has on the pressure and level control systems?

a. Charging flow increases, spray valves and heaters remain unchanged.

b. Charging flow increases, spray valves modulate closed and heaters energize.

c. Charging flow decreases, spray valves modulate open and heaters deenergize.

d. Charging flow remains unchanged, sprays modulate closed and heaters energize.

QUESTION: 033 (1.00)

A small steam leak inside containment is blowing directly on the reference leg for the controlling pressurizer level transmitter. The reference leg is NOT leaking.

Which one of the following describes the affect the steam leak has on charging flowrate?

Charging flow will:

a. not be affected.

b. increase.

c. decrease.

d. decrease then increase.

QUESTION: 034 (1.00)

The pressurizer pressure master controller fails "high." Which one of the following describes the affect of this failure?

a. Pressurizer PORV 455A opens.

b. Pressurizer PORV 456 opens.

c. Both pressurizer PORV 455A and 456 open then shut.

d. Both pressurizer PORV 455A and 456 will remain shut.

QUESTION: 035 (1.00)

The reactor is at 100% power. During testing, relays fail in the activated position causing an inadvertent safety injection signal and generates a reactor trip signal. Reactor trip breaker "A" does NOT open.
Which one of the following describes the affect of RT "A" failing to open?

a. Safeguards Train "A" load sequencer will not operate.

b. Safety Injection Train "A" will not reset.

c. Safety Injection Train "A" and "B" will not reset.

d. Safety Injection Train "A" equipment will start, then stop.

QUESTION: 036 (1.00)

The reactor protection system generates an automatic reactor trip which in turn is sent to the reactor trip breakers.
Which one of the following describes what this automatic trip signal acts upon to open the reactor trip AND the reactor trip bypass breakers?

	Rx. Trip Breaker	Bypass Breaker
a.	UV and Shunt Trip coils	UV Coil only
b.	UV and Shunt Trip coils	UV and Shunt Trip Coils
c.	UV Coil only	UV Coil only
d.	Shunt Trip Coil only	Shunt Trip Coil only

QUESTION: 037 (1.00)

While monitoring the Safety Parameter Display System (SPDS), the operator notes that a "U" in a magenta box is displayed next to one of the input signals.
Which one of the following describes the significance of the "U"?

a. The input has been placed in computer substitution.

b. The sensor variable has failed some portion of the checks and is considered unusable

c. The sensor variable cannot be compared with other instruments or is outside of the expected range.

d. The input has been disconnected and is not being used at this time.

QUESTION: 038 (1.00)

The SPDS displays the critical safety functions using 6 different colors, 5 of which have a fixed priority. Red, Orange and Yellow have the highest priorities.
Which one of the following describes the remaining 2 colors and their order of priority (high to low)?

Highest ----------> Lowest

Red, Orange, Yellow...

a. Green, White.

b. White, Green.

c. Blue, Green.

d. Green, Blue.

DELETE

QUESTION: 039 (1.00)

A safety injection (SI) actuation has been initiated. One minute after the SI, Emergency Diesel Generator "A" is intentionally stopped, then the operator is ordered to immediately restart the diesel manually. The diesel will not start from any location.
Which one of the following describes why the diesel generator will not restart?

a. The SI sequencer has not finished cycling.

b. The diesel was stopped using the emergency pushbuttons.

c. The diesel was stopped using the local stop control.

d. The fuel lines must reprime before restart.

QUESTION: 040 (1.00)

The emergency diesel generator fuel oil storage tank contains 35,360 gallons. The diesel generator is started and loaded to 2500 KWe. Assuming the load on the generator is not changed, which one of the following describes how long the diesel generator will run before the fuel oil storage tank level reaches the minimum Technical Specification limit of 88%?

a. 5 hours.

b. 7 hours.

c. 10 hours.

d. 14 hours.

DELETE

QUESTION: 041 (1.00)

Concerning the 125 VDC system, which one of the following operations is prevented by a Kirk-key interlock?

Parallel operation of:

a. DC busses 301A-1 and 301A-2

b. DC busses 301A-1 and 301B-1.

c. the swing chargers 301A-3 and 301B-3.

d. the normal chargers 301A-3 and 301A-2.

QUESTION: 042 (1.00)

The unit is at full power. Emergency diesel generator "A" is supplying all power to 4KV bus 34C with bus frequency maintaining at 59.3 Hz. An auxiliary operator taking readings on Diesel Generator "A" inadvertently moves the Mode Selector Switch from "UNIT" to the "PARALLEL" position. Which one of the following describes the affect this will have on the diesel generator operation?

a. The diesel engine will overspeed and the bus deenergizes.

b. The diesel engine speed will increase and bus frequency will increase to 60 Hz.

c. The generator output breaker opens and the bus deenergizes.

d. No affect, the parallel circuit is not active if bus 34C is not connected to offsite power.

QUESTION: 043 (1.00)

On the Fire Protection computer console are several indicator lights to aid in system operation. Which one of the following describes the significance when the "security" indicator is illuminated?

a. It indicates a fire detection zone is in alarm.

b. It indicates a priority one message has been received.

c. It indicates a system trouble message has been received.

d. It indicates the integrity of the system may be violated.

QUESTION: 044 (1.00)

A Loss of Site Power (LOP) occurs. The emergency diesel generators start and power the associated emergency busses.
Which one of the following describes the response of the Instrument Air System (IAS) following the LOP?

a. Only the "A" IAS compressor will auto start.

b. Only the "B" IAS compressor will auto start.

c. Both the "A" AND "B" IAS compressors will auto start.

d. Neither IAS compressors will auto starts.

QUESTION: 045 (1.00)

Shortly after an inadvertent reactor trip, the reactor operator reports PRT temperature and pressure increasing slowly. Which one of the following describes why PRT temperature and pressure are increasing?

a. RCP seal injection flow has been isolated.

b. The letdown orifice isolation valves are closed.

c. Letdown pressure control valve, PCV-131, is closed.

d. Excess letdown is in service using RCS loop one drain valve.

QUESTION: 046 (1.00)

One hour ago, Turbine Impulse Chamber Pressure transmitter, PT-506, failed high. No actions were taken in response to the failure. A reactor trip occurs from 100% power. RCS temperature is currently 590 degrees and increasing. RCS pressure is currently 2340 and holding with the pressurizer PORVs open.

The reactor operator notes the turbine bypass valves are NOT open and the Steam Dump System is not operating even though all controls are aligned correctly in the Tave Mode.

Which one of the following describes a reason why the steam dumps are NOT operating.

a. Train "B" of P-4 has not activated the steam dumps.

b. Reactor trip breaker "A" did not open.

c. P-12 is active preventing the steam dumps from arming.

d. The PT-506 failure is preventing the steam dumps from arming.

QUESTION: 047 (1.00)

Refer to supplied Figure 3, Integrated ECCS. The plant is in refueling mode with the reactor vessel head lifted about 2 feet off the flange for inspection prior to filling the refueling cavity. An operator inadvertently presses the control switch to open the RWST Supply To RHS Suction Valve, 3SIL*MV8812A.
Which one of the following describes the affects of the operator's action.

a. The RWST will drain into the refueling cavity.

b. The valve will open, but no flow will occur.

c. The valve will stroke open, then immediately stroke closed.

d. No affect, the valve will not open.

QUESTION: 048 (1.00)

Which one of the following completes the statement?

Annunciator RHR A SUCT VLV OPEN AND RCS PRESS HI (MB2C 1-6) will alarm when the RHR suction valves from the RCS are open and pressure transmitter PT-403/405 detects a RCS pressure greater than or equal to _____ psig.

a. 425

b. 440

c. 455

d. 470

QUESTION: 049 (1.00)

Which one of the following is a 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. Letdown heat exchanger.

c. RPCCW heat exchanger.

d. Seal water heat exchanger.

QUESTION: 050 (1.00)

Which one of the following describes the RPCCW system response to a "CDA" signal?

a. All pumps remain running, non-safety train headers isolate.

b. All pumps remain running, non-safety train headers isolate, containment supply and suction cross-connect valves close.

c. All running pumps trip to prevent runout and cavitation.

d. All running pumps trip due to loss of service water.

QUESTION: 051 (1.00)

The Service Water System is operating with the lead pump running and the follow pump in standby. Which of the following describes the complete response of the Service Water System to a Safety Injection Signal?

a. Emergency Diesel Generator cooling supply valves open.

b. Emergency Diesel Generator cooling supply valves open, the lead Service Water Pump stops, then starts.

c. Emergency Diesel Generator cooling supply valves open and the follow Service Water Pump starts.

d. Emergency Diesel Generator cooling supply valves open, the lead Service Water Pump stops, then the lead and the follow pumps start.

QUESTION: 052 (1.00)

A recently licensed Reactor Operator (RO) has performed the functions of an RO during one 8 hour shift since January 1, 1994.

In accordance with 10 CFR 55.53, which one of the following will maintain his RO license in an "active status"?

a. Two 8 hour shifts performing RO functions during February.
Four 8 hour shifts performing RO functions during March.

b. Five 8 hour shifts performing RO functions during March.
Three 12 hour shifts performing RO functions during April.

c. Three 8 hour shifts performing RO functions during January.
Two 12 hour shifts performing RO functions during March.

d. One 8 hour shifts performing RO functions during January.
Four 8 hour shifts performing RO functions during February.

QUESTION: 053 (1.00)

Which one of the following completes the statement?

On January 1, 1994, a Northeast Utilities (NU) employee who is 24 years old has a lifetime exposure of 27 rem. What is the maximum additional TEDE exposure that this individual may receive during 1994 in accordance with NU TEDE administrative limits?

a. 1 rem.

b. 3 rem.

c. 5 rem.

d. 7 rem.

QUESTION: 054 (1.00)

Given the following conditions:

-- An operator is performing a whole body frisk using a portable frisker, RM-14/HP 210.

-- Background radiation count rate in the contaminated area is at the MAXIMUM allowed for using the frisker.

Which one of the following is the count rate (background + actual) at which the operator is considered to be contaminated?

a. 100 counts per minute

b. 300 counts per minute

c. 400 counts per minute

d. 500 counts per minute

QUESTION: 055 (1.00)

The "A" RHR pump is properly red tagged for electrical trouble shooting. Electrical Maintenance has determined that the panel control switch requires replacement.
Which one of the following completes the following statement?

The red tag on the control switch:

a. is cleared before removal of the switch from the panel.

b. is removed from the switch and attached near the panel hole.

c. remains with the old switch until transferred to the new switch by the electricians.

d. is removed under a "temporary lift" until the new switch is installed.

DELETE

QUESTION: 056 (1.00)

Refer to the following list of safety requirements and protective equipment.

1. Stand clear of the cubicle
2. Stand to the side of the cubicle.
3. Hard hat with face shield
4. Switching Jacket.
5. Electrical safety gloves
6. Rubber mat to stand on
7. Safety glasses.

Using the list above, which one of the following describes the minimum required when performing a manual racking up of a 4160/6900 volt breaker.

a. 1, 5 and 6

b. 2, 3, 5 and 6

c. 2, 3, 4, 5, and 7.

d. 2, 3, 4, 5, 6 and 7

QUESTION: 057 (1.00)

Which one of the following describes how electrical fuses are controlled once they are removed for a station tagout?

a. The fuses are labelled and delivered to the clearance requester.

b. The fuses are bagged, labelled and placed in a drawer of the SCO's desk.

c. The fuses are bagged, labelled and placed in the panel near the fuse holder.

d. The fuses are labelled and stored in a cabinet in the Shift Supervisor's office.

QUESTION: 058 (1.00)

Which one of the following completes the following statement in accordance with Unit 3 operations philosophy?

If a Reactor Operator believes that a manual scram is required, they shall announce the pertinent plant conditions, their recommendation, then:

a. wait and perform the action when directed by the SCO.

b. wait and perform the action when concurrence is received by any other licensed operator.

c. wait until receiving a supervisory acknowledgement, then perform the action.

d. perform the required action without waiting for any supervisory acknowledgement or direction.

DELETE

QUESTION: 059 (1.00)

Which one of the following completes the statement?

Following the trip of a 480V circuit breaker an operator may attempt one reset:

a. without concurrence if the cause of the trip is understood.

b. without concurrence after explaining the cause to the Shift Supervisor and verifying no abnormal conditions exist.

c. without concurrence if the cause of the trip is understood and a second attempt after receiving permission from the Shift Supervisor.

d. only after receiving permission from the Shift Supervisor.

QUESTION: 060 (1.00)

Which one of the following conditions allow the "operator at the controls" to leave the Surveillance Area (as defined in ACP 6.01), unattended during normal plant operations?

a. To complete the Shift Surveillance Schedule logging.

b. To enter the Shift Supervisor's office to obtain a panel key.

c. To obtain a print from the outage office in order to verify a valve lineup.

d. To verify the receipt of an annunciator on a back panel.

QUESTION: 061 (1.00)

According to ACP 6.01, "Control Room Procedure", which one of the following is the MINIMUM EPIP 4701 Incident Classification meeting the definition of an ACCIDENT SITUATION?

a. General Emergency

b. Site Emergency

c. Alert

d. Unusual Event

QUESTION: 062 (1.00)

Which one of the following requirements describes the use and application of a CAUTION statement that precedes Step 22 of an Emergency Operating Procedure (EOP)?

a. Applies ONLY to Step 22 "Action/Expected Response" items.

b. Applies to Step 22 "Action/Expected Response" items AND "Response Not Obtained" items.

c. Applies to ALL future "Action/Expected Response" items of the current EOP.

d. Applies to ALL future "Action/Expected Response" items AND "Response Not Obtained" items of the current EOP.

QUESTION: 063 (1.00)

A fire alarm has been activated on UNIT TWO. Which one of the following describes the MINIMUM number of operators that must respond from each unit to compose the Fire Brigade team.?

	Unit 1	Unit 2	Unit 3
a.	2	2	3
b.	2	3	2
c.	3	1	3
d.	3	3	2

QUESTION: 064 (1.00)

You are the Independent Verifier for a valve lineup. You are currently checking a normally LOCKED OPEN manual valve. You observe the locking device is installed with sufficient slack in the wire to allow some valve movement.
Which one of the following is the proper method for verifying the position of the valve?

a. Check the operator in the open direction leaving the locking device installed.

b. Remove the locking device and check the operator in the open direction.

c. Observe the valve stem position and verify the locking device is installed.

d. Remove the locking device, check the operator in the open direction, then reinstall the locking device removing all slack.

QUESTION: 065 (1.00)

Given the following conditions:

- Operating at 87% power with Rod Control in automatic.
- Rod Control Banks Limit Lo annunciator is actuated.
- Rod Control Banks Limit Lo-Lo annunciator is actuated.
- No instrument are failed.

Which one of the following describes the actions that the operator should immediately perform?

a. Manually withdraw rods.

b. Reduce reactor power to 75%.

c. Initiate immediate boration.

d. Manually trip the reactor.

QUESTION: 066 (1.00)

The plant is at 65% power when annunciator RCP HI RANGE LKG FLOW HI alarms. RCP A seal leakoff flow is 6.5 gpm and increasing. It is determined the #1 seal has failed.

Which one of the following describes the MINIMUM required actions that must be taken in the next 30 minutes?

Close the seal leakoff valve,:

a. and reduce power < 37%.

b. reduce power <37%, and defeat loop temperature input.

c. reduce power <37%, defeat loop temperature input and stop the pump.

d. reduce power <37%, defeat loop temperature input, stop the pump and close the pressurizer spray valve.

QUESTION: 067 (1.00)

The plant is at a stable generated electric power output of 825 Mwe. The reactor operator reports condenser backpressure increasing, then oscillating between 5.2 and 6.8 inches of Hg absolute.
Which one of the following describes the actions to be taken based on the reactor operator's report?

a. Decrease turbine load at maximum rate to 360 Mwe, then trip the reactor if backpressure is still oscillating from 5.2 to 6.8 inches.

b. Decrease turbine load at maximum rate to less than 30% power, then trip the reactor if backpressure is still oscillating from 5.2 to 6.8 inches.

c. Decrease turbine load at maximum rate to less than 30%, then allow backpressure to stabilize if less than 6.5 inches Hg absolute.

d. Monitor condenser backpressure, immediately trip the reactor if condenser backpressure increases to greater than 5.0 inches Hg absolute.

QUESTION: 068 (1.00)

The reactor is at 100% power. It has been determined that RCS activity is increasing. The SRO instructs the reactor operator to check the Failed Fuel Monitor (3CHS-RE69) for indications of increasing gross RCS activity from noble gasses.
Which one of the following describes where the operator will find this information on the Failed Fuel Monitor?

a. Channels 1 or 2.

b. Average channels 1 and 2.

c. Channel 1.

d. Channel 2.

QUESTION: 069 (1.00)

The following table is a representation of the Table 2 located in Attachment C of EOP 3509, "Fire Emergency.

RESPONSE TO CO2 DISCHARGE
Table 2

Cable Spreading Area		
ADJACENT AREA	PREDICTED STATUS DURING DISCHARGE	REMARKS
East Switchgear	Clear	
West Swithgear	Clear	
Control Room	Slight	

Which one of the following describes the meaning of "slight" (column 2) as it pertains to the table and the Control Room (CR)?

a. Some CO2 will be present in the CR, required operators can stay with air packs available for use.

b. Some CO2 will be present in the CR, required operators can stay only if air packs are donned.

c. Some fogging will occur from CO2 discharge, operators will have a small amount of visual impairment.

d. Some fogging will occur from CO2 discharge, ventilation system should clear the CR within 15 minutes.

QUESTION: 070 (1.00)

The Control Room is evacuated with the reactor in Hot Standby. RCS temperature is being maintained at no-load Tavg with all RCPs running. A cooldown is ordered using EOP 3504, Cooldown Outside Control Room.

Which one of the following describes the actions to be taken for the cooldown in regards to the RCPs?

a. All four pump are left running until 250 degrees is achieved.

b. Two pumps are left running, preferably RCP 1 and 2.

c. One pump is left running, preferably RCP 1.

d. One pump is left running, preferably RCP 2.

QUESTION: 071 (1.00)

The Control Room is evacuated. Some equipment needed for plant control must be operated locally at the 4160 V switchgear. Which one of the following describes the impact of using local breaker control?

a. Purple train equipment will not receive a diesel generator sequencing signal.

b. Orange train equipment will not receive an SI sequencing signal.

c. Both Purple and Orange train equipment will not receive an SI or diesel generator sequencing signal.

d. Both Purple and Orange train equipment will respond to SI and diesel generator sequencing signals, but not to remote signals.

QUESTION: 072 (1.00)

The reactor is shutdown with Tavg at 225 degrees F. A loss of offsite power occurs and all diesel generators fail to start.
Which one of the following is the procedure usage hierarchy that is to be used for this situation?

a. EOP ECA-0.0 is used exclusive of all others.

b. EOP 3501 is used exclusive of all others.

c. EOP ECA-0.0 is used in parallel with EOP 3501.

d. EOP ECA-0.0 is used until directed to go to EOP 3501.

QUESTION: 073 (1.00)

Which one of the following satisfies the entry symptoms for AOP 3561, Loss of Reactor Plant Component Cooling Water?

a. RPCCW surge tank level A less than 90%.

b. Less than three RPCCW pumps running.

c. Loss of Service Water to ANY in-service RPCCW heat exchanger.

d. RPCCW surge tank level HIGH alarm.

QUESTION: 074 (1.00)

The reactor is at 100% power. Annunciator RPCCW PUMP AUTO TRIP/OVERCURRENT (MB1C 5-7) alarms. Investigation reveals only one RPCCW pump is running. Component temperatures are increasing but none are in alarm at this time. The SRO enters procedure AOP 3561, Loss of Reactor Plant Component Cooling Water at Step 1.

Which one of the following describes the procedural action required in this situation?

a. Trip the reactor, stop all RCPs, and go to E-0.

b. Perform AOP 3575, Rapid Downpower, then continue with AOP 3561.

c. Continue with AOP 3561 and isolate the RPCCW non-safety header.

d. Continue with AOP 3561 and try to start a second RPCCW pump.

QUESTION: 075 (1.00)

120 VAC Vital Instrumentation Bus VIAC-1 is de-energized from a fault in its associated inverter. 5 minutes after losing VIAC-1, site power is lost.
Which one of the following describes the expected response to the loss of site power in this situation?

a. Both emergency diesel generators will start but only Train B required loads will sequence on.

b. Both emergency diesel generators will start and sequence on required loads.

c. Only emergency diesel generator B will start and sequence on required loads.

d. Only emergency diesel generator A will start and sequence on required loads.

QUESTION: 076 (1.00)

The reactor is at 100% power steady state. Letdown is inservice with 2 orifice valves open and a charging flowrate of 130 gpm.

Failure of VCT instrumentation causes the following:

VCT outlet valves, 112B and C..... CLOSE
RWST to Charging pumps suction valves, 112D and E..... OPEN.

The valves are in this position for 4 minutes and 30 seconds before the they can be repositioned to their original condition.

Which one of the below describes the approximate amount of boric acid added to the RCS?

a. 10 ppm change.

b. 15 ppm change.

c. 120 pcm change.

d. 155 pcm change.

QUESTION: 077 (1.00)

An inadvertent safety injection and reactor trip occurs. The SRO enters E-0, Reactor Trip and Safety Injection. The reactor operator reports that three rods (1 from control bank C and 2 from bank B) did not insert. Which one of the following describes the actions required by this situation?

a. Continue with E-0 without consideration for the rods.

b. Emergency borate 200 ppm.

c. Emergency borate 600 ppm.

d. Initiate emergency boration until directed to stop by the SRO.

QUESTION: 078 (1.00)

A safety injection has occurred. The SRO has entered EOP E-0, Reactor Trip or Safety Injection and is currently on Step 3. The reactor operator reports Containment temperature is 195 degrees F and RCS pressure is 1515 psia. Which one of the following actions should be taken in this situation?

a. Immediately trip all RCPs.

b. Complete the immediate actions of E-0, then trip all RCPs.

c. Verify at least one Charging or Safety Injection pump running and then trip all RCPs.

d. No specific actions are required, continue in E-0.

QUESTION: 079 (1.00)

An Anticipated Transient Without Scram (ATWS) situation has occurred from 50% power level. EOP FR-S.1 is entered. In performing immediate action Step 4. the reactor operator reports boration flow at 30 gpm.

Which one of the following describes the response to this report?

a. Manually shift Charging pump suction to the RWST.

b. Refer to AOP-3566, Immediate Boration while continuing with Step 5 of FR-S.1

c. Manually align the makeup system for maximum boration flow.

d. Acknowledge the report and continue with Step 5 of FR-S.1.

QUESTION: 080 (1.00)

The following plant conditions exist with the reactor tripped:

RCS Pressure	1500 psig and decreasing.
RCS Tavg	470 degrees F and decreasing.
Pressurizer level	10% and decreasing.
Steam Generator Levels	A-0%, B-10%, C-15%, D-5%
Steam Generator Pressure ...	A- 200 psig B, C & D - 1000 psig.
Aux. Feedflow	All pumps running with full flow.
Containment Pressure	5 psig and increasing.
ECCS equipment	All operating at normal flows.

Which one of the following describes the cause of the transient?

a. Loss of coolant accident.

b. Steam break outside containment.

c. Steam break inside containment.

d. Steam Generator Tube Rupture.

QUESTION: 081 (1.00)

Which one of the following describes the reason all Reactor Coolant Pumps are tripped when performing Step 3 of FR-H.1 "Response to Loss of Heat Sink"?

a. Conserve Steam Generator secondary inventory by reducing heat input to the RCS.

b. Increase Safety Injection flow by decreasing RCS Cold Leg pressure.

c. Establish natural circulation conditions and extend the time before bleed and feed is initiated.

d. Establish natural circulation conditions and decrease heat transfer rate into the steam generators.

QUESTION: 082 (1.00)

Which one of the following describes when procedural compliance directs starting RCPs even though RCP damaged may result?

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: 083 (1.00)

With the reactor at 100%, an inadvertent safety injection signal has generated a reactor trip signal. The following plant conditions exist:

Reactor power	Decreasing.
Rod Bottom Lights	All on.
Reactor Trip Breaker A	Open.
Reactor Trip Breaker B	Closed.
Safety Injection Alarm	On
Turbine Stop Valves	Closed.
Emergency Bus 34C	Energized.
Emergency Bus 34D	De-energized.

Which one of the following describes the procedural action for the first 4 steps of EOP E-0, Reactor Trip or Safety Injection, as dictated by these conditions?

a. Verify expected actions of Steps 1, 2, 3 and 4.

b. Perform RNO actions of Step 1, verify expected actions of Steps 2, 3 and 4.

c. Verify expected actions of Steps 1 and 2, perform RNO actions Step 3, then verify expected actions of Step 4.

d. Perform RNO actions of Step 1, verify expected actions of Step 2, perform RNO actions of Step 3, verify expected actions of Step 4.

QUESTION: 084 (1.00)

The following plant conditions exist after a reactor trip from 100% power:

Reactor power	0% and flux decreasing.
Rod Bottom lights	One DARK, Remainder LIT
Reactor Trip Breaker	RTA and RTB open
RCS Temperature	547 degrees F and stable.
RCS Pressure	1900 psig and stable.
RCS Subcooling	80 degrees F.
Containment Pressure	0 psig.
Containment Temperature	Ambient
Containment Radiation Levels	Normal.
Pressurizer Level	10% and slowly decreasing.
SG Pressure	All SGs 1000 psig and stable.
SG Level	15% and increasing slowly.
AFW System	Greater than 600 gpm.
All Secondary Radiation Levels	Normal.

Based on the above data, which one of the following describes when monitoring of the critical safety functions will begin?

a. After completing procedure FR-S.1, Response to Nuclear Power Generation/ATWS.

b. After manual initiation of safety injection at Step 4 of E-0.

c. After transitioning to procedure ES-0.1, Reactor Trip Response.

d. After transitioning to ES-1.1, SI Termination.

QUESTION: 085 (1.00)

Step 13 of EOP E-3, Steam Generator Tube Rupture, 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. Reactor vessel Pressurized Thermal Shock considerations.

b. S/G tube integrity considerations.

c. Mainsteam line isolation ccnsiderations.

d. Rapid cooldown return to criticality considerations.

QUESTION: 086 (1.00)

A NOTE prior to Step 14 of E-3, Steam Generator Tube Rupture, states:

The RCP trip criteria does not apply once a controlled cooldown is initiated.

Millstone lists four basis statements associated with this NOTE. Which one of the following is NOT one of the basis statements for this NOTE?

a. Allows cooldown rate to exceed 100 degrees F per hour.

b. Maintains normal RCS pressure control.

c. Minimizes Pressurized Thermal Shock considerations.

d. Prevents vessel upper head voiding when RCS is depressurized.

QUESTION: 087 (1.00)

The RCS is aligned for reduced inventory operation (RIO). It is determined that the RCS is losing inventory and EOP 3505, Loss of Shutdown Cooling and/or RCS Inventory is entered.

Which one of the following describes the RCS level at which the RHR pump(s) must be stopped?

a. No level criteria applies, only RHR pump current/flow.

b. RVLMS plenum level 64%.

c. Tygon tube level indicates 1 inch below centerline of hot leg.

d. RHR/Letdown line level transmitters indicator 6 feet below reactor vessel flange.

QUESTION: 088 (1.00)

The following plant conditions exist:

Mode..... 6
RCS Inventory..... Mid-Loop, Level decreasing.
RHR pumps..... Both Stopped.
RCS configuration..... Cold Leg openings exist.

In response to the loss of inventory, the SRO has entered EOP-3505, Loss of Shutdown Cooling and/or RCS Inventory. It is determined that the RCS must be refilled using forced feed (EOP 3505, Attachment A, Step 7).

Which one of the following describes the order of priority that applies in this situation?

a. Charging Pump, Safety Injection Pump, Recirculation Spray Pump.

b. Safety Injection Pump, Recirculation Spray Pump, Charging Pump.

c. Safety Injection Pump, Charging Pump, Recirculation Spray Pump.

d. Recirculation Spray Pump, Charging Pump, Safety Injection Pump.

QUESTION: 089 (1.00)

If RHR or RCS inventory is lost while the RCS is in reduced inventory operations (RIO), EOP-3505, "Loss of Shutdown Cooling and/or RCS Inventory", imposes flow limitations on the RHR system.
Which one of the following describes the flow limitations EOP 3505 places on the RHR system while in RIO?

a. Maximum flow of 1000 gpm under all conditions.

b. Maximum flow of 2000 gpm while venting and 1000 gpm all other times.

c. Maximum flow of 4600 gpm while venting and 1000 gpm all other times.

d. Maximum flow of 4600 gpm for one hour while venting and 1000 gpm all other times.

QUESTION: 090 (1.00)

Which one of the following DC buses DOES NOT require tripping the reactor if it is de-energized?

a. 301A-1

b. 301B-1

c. 301D-1

d. 301A-2

QUESTION: 091 (1.00)

The reactor is operating at 100% power when a small loss of RCS inventory is detected. AOP 3555, "Reactor Coolant Leak", is entered. Which one of the following describes the preferred order of detecting the leak location?

a. No preferred order exists.

b. Steam Generator tubes intact, charging/letdown, RPCCW intact, Pressurizer PORVs.

c. Charging/letdown, Pressurizer PORVs, RPCCW intact, Steam Generator tubes intact.

d. Pressurizer PORVs, charging/letdown, Steam Generator tubes intact, RPCCW intact.

QUESTION: 092 (1.00)

The reactor is operating at 100% power when a small loss of RCS inventory is detected. The following plant conditions exist:

Reactor Power	100%
RCS Tavg	On program and stable
Pzr. Pressure	2225 psig and stable
Pzr. Heaters	All energized
Pzr. Level	60% and decreasing 1%/minute
Letdown	One letdown orifice in service.
Charging	FCV-121 full open, 2 charging pumps running.

Which one of the following describes the actions required based on this situation?

a. Trip the reactor.

b. Trip the reactor and manually activate safety injection.

c. Perform AOP 3555 until pressurizer level decreases to 25%, then trip the reactor.

d. Isolate letdown, if pressurizer level continues to decrease then trip the reactor.

QUESTION: 093 (1.00)

With the reactor power at 100%, DC bus 301C-1 deenergizes. The reactor is manually tripped and E-0, "Reactor Trip or Safety Injection", is entered. Which one of the following will be necessary if the DC bus remains deenergized for 60 minutes? (Assume no safety injection occurs.)

a. Declare a Site Area Emergency.

b. Locally open Reactor Trip Breaker "A" (RTA).

c. Locally open Reactor Trip Breaker "B" (RTB).

d. Perform AOP 3561, Loss of RPCCW in parallel with E-0.

QUESTION: 094 (1.00)

The reactor is at 100% power with rod control selected to "automatic" when Power Range Channel N-41 lower detector fails "high."
Which one of the following describes the actions that should be performed because of this failure?

a. Verify no turbine runback, place rod control to "manual", then diagnose the NI channel failure.

b. Verify no turbine runback, diagnose the failed NI channel, then place rod control to "manual."

c. Verify turbine runback, allow rods to auto insert, diagnose the NI channel failure, then place rod control to "manual."

d. Verify turbine runback, allow rods to auto insert until rod speed decays to 48 spm, then place rod control to "manual."

QUESTION: 095 (1.00)

A reactor startup is in progress with both Intermediate Power (IR) ranges reading 5.5 X 10E-6 amps. IR Channel N-35 fails "low." Which one of the following describes the actions required because of this failure.

a. Place IR Channel 35 level trip bypass to BYPASS and actuate both IR block pushbuttons.

b. Restore IR-35 to operable status prior to exceeding 10% power.

c. Restore IR-35 to operable status prior to exceeding 5% power.

d. Restore IR-35 to operable status prior to exceeding P-6.

QUESTION: 096 (1.00)

Which one of the following instrument failures DOES NOT require placing Main Feed Pump speed control in MANUAL?

a. Narrow Range Steam Generator Level.

b. Feed Pressure Channel.

c. Steam Flow Channel.

d. Feed Flow Channel.

QUESTION: 097 (1.00)

Given the following containment history with a small LOCA in progress:

Time	Cnmt Temp.	Cnmt Press	Cnmt. Humidity	Cnmt Radiation
0815	178 Deg F	14 psia	90%	9.0 X 10E2 R/Hr
0830	180 Deg F	16 psia	100%	7.3 X 10E3 R/Hr
0845	183 Deg F	20 psia	100%	9.5 X 10E4 R/Hr
0900	185 Deg F	25 psia	100%	2.0 X 10E5 R/Hr

Which one of the following describes the FIRST time that adverse containment should have been declared?

a. 0815

b. 0830

c. 0845

d. 0900

QUESTION: 098 (1.00)

Given the following:

Unit 3 is at 100% power.
All automatic control systems are in their normal lineup.
Loop 2 Tavg fails as is.
ASSUME no operator action is taken.

Which one of the following describes the effect on Pressurizer level when the plant load is changed to 20% power?

a. Charging flow increases and actual PZR level remains constant.

b. Charging flow decreases and actual PZR level decreases.

c. Charging flow increases and actual PZR level increases.

d. Charging flow remains constant and actual PZR level decreases.

QUESTION: 099 (1.00)

Given the following:

The plant is in Mode 6.
A failure of the refueling cavity seal has occurred.
AOP 3572, Failure of Refueling Cavity Seal, is implemented to re-fill the Spent Fuel Pool.

Which one of the following Spent Fuel Pool emergency makeup sources has FIRST priority in providing makeup flow to the Spent Fuel Pool if it is rapidly losing inventory?

a. Fire Protection Water System.

b. Refueling Water Storage Tank.

c. Primary Grade Water System.

d. Spent Fuel Pool Purification.

QUESTION: 100 (1.00)

Given the following:

A loss of offsite power has occurred.
Steps 1-5 of ES-0.2, Natural Circulation Cooldown, have been completed.
The following parameters have been established as directed by the NOTE preceding Step 6:

- RCS wide range temperature is 385 degrees F.
- RCS pressure is 900 psig.
- SI accumulator isolation valves are all OPEN.

Which one of the following describes the reason for establishing these plant conditions prior to RCS cooldown?

a. To reduce the possibility of void formation in the vessel head.

b. To establish conditions that will allow SI accumulator injection.

c. To minimize pressurized thermal shock (PTS) considerations.

d. To minimize chances of a RCP seal failure.

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

CONTROLLED LEAKAGE SHIFT SEAL
(EXAGGERATED)

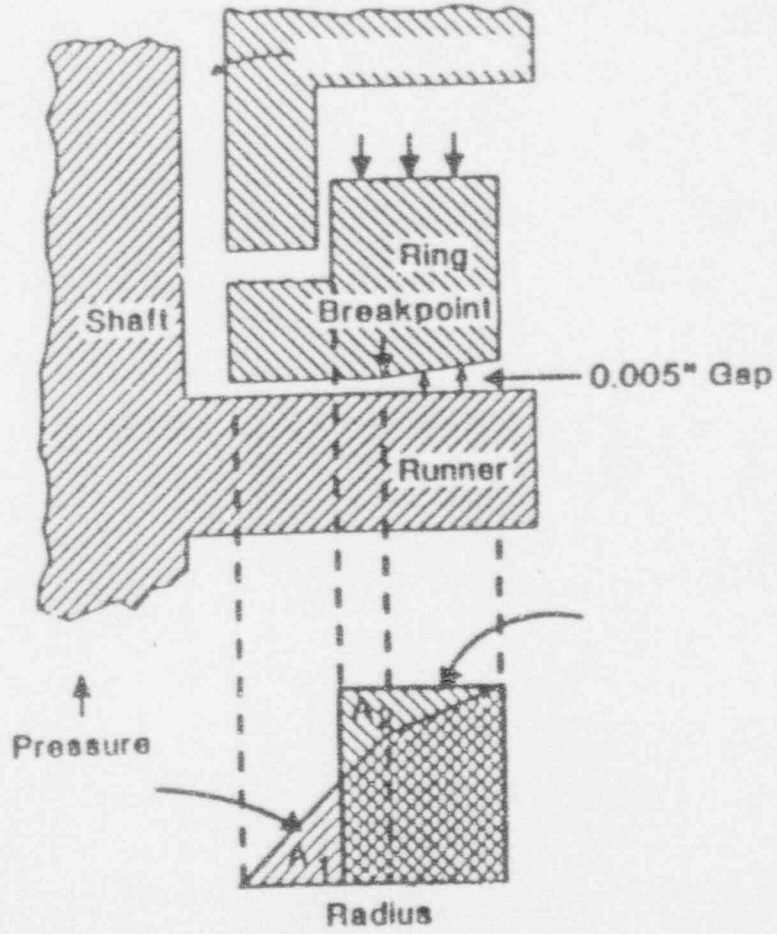

FIGURE 1

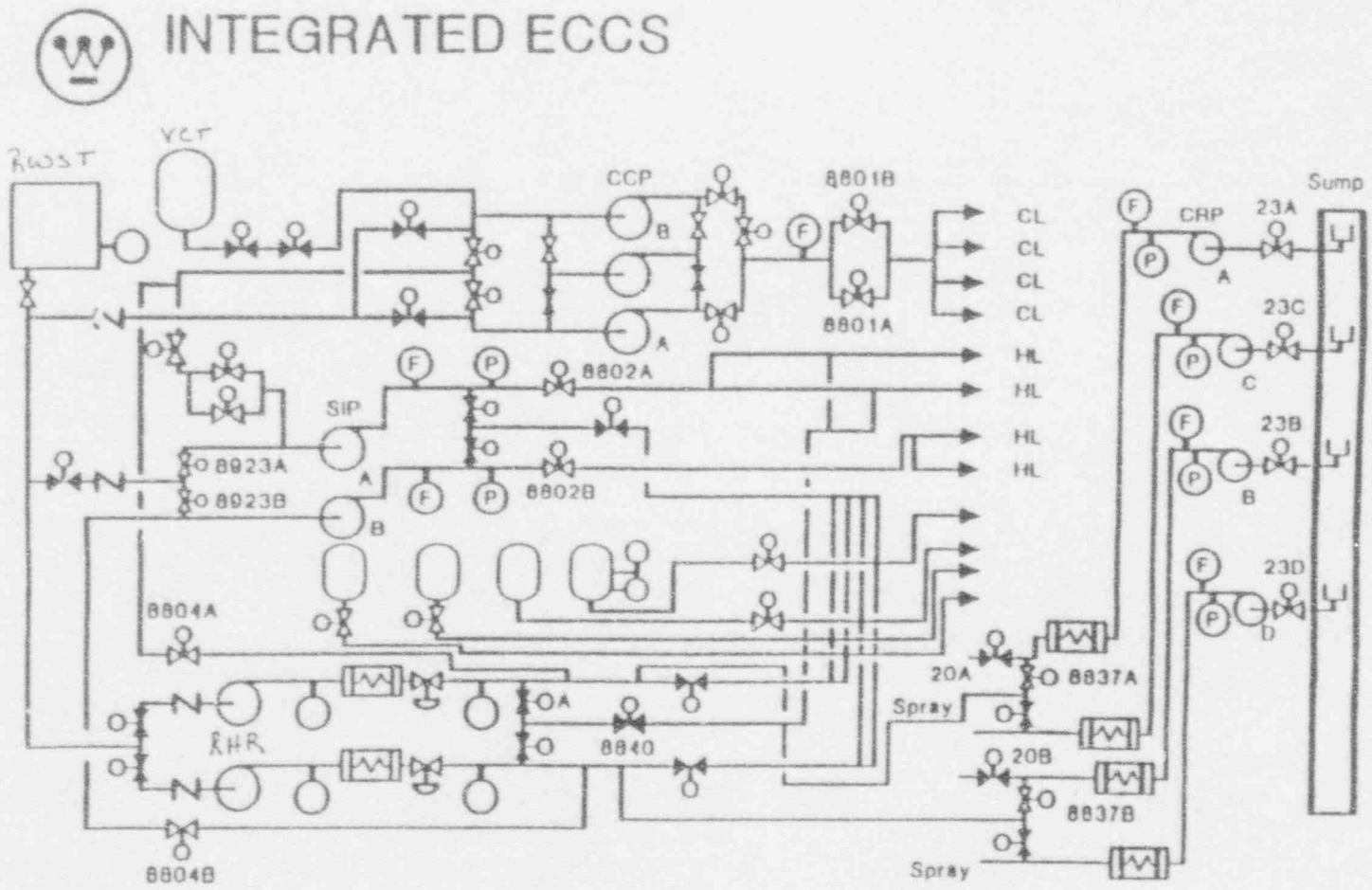
INTEGRATED ECCS
RWST
VCT
CCP
B
A
8801B
8801A
CL
CL
CL
CL
HL
HL
HL
HL
8802A
8802B
SIP
A
B
8923A
8923B
8804A
8804B
RHR
8840
20A
20B
8837A
8837B
Spray
Spray
CRP
A
C
B
D
23A
23C
23B
23D
Sump

FIGURE 2

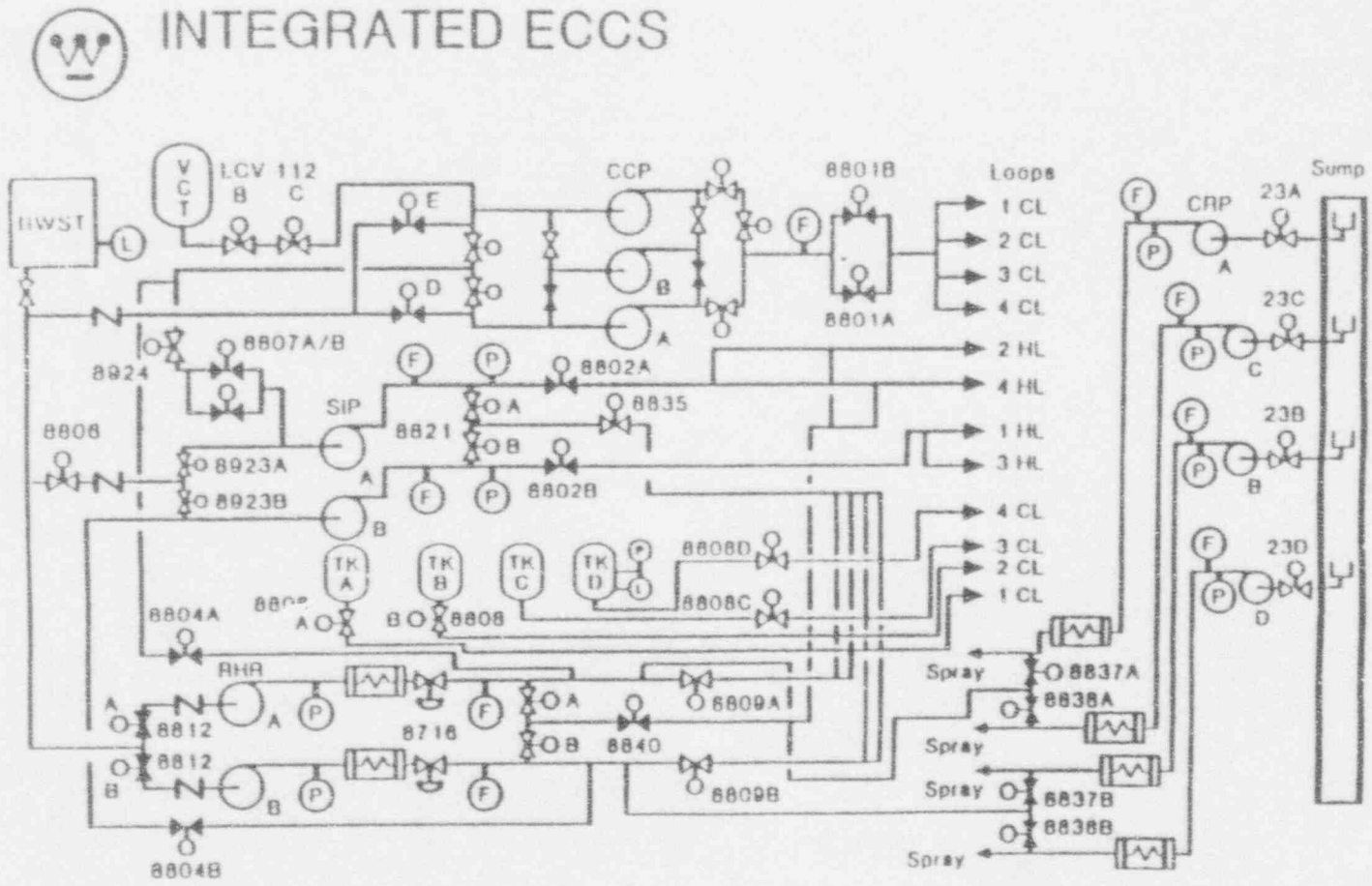
INTEGRATED ECCS
RWST
VCT
LCV 112
B
C
E
D
CCP
B
A
8801B
8801A
Loops
1 CL
2 CL
3 CL
4 CL
2 HL
4 HL
1 HL
3 HL
4 CL
3 CL
2 CL
1 CL
Sump
CRP
A
23A
C
23C
B
23B
D
23D
8807A/B
8824
8802A
8835
SIP
8821
8808
8923A
8923B
8802B
8808D
8808C
TK A
TK B
TK C
TK D
8804A
8808
RHR
8812
8716
8809A
8840
8809B
8804B
Spray
8837A
8838A
8837B
8838B

FIGURE 3

CONTROLLED LEAKAGE SHIFT SEAL
(EXAGGERATED)

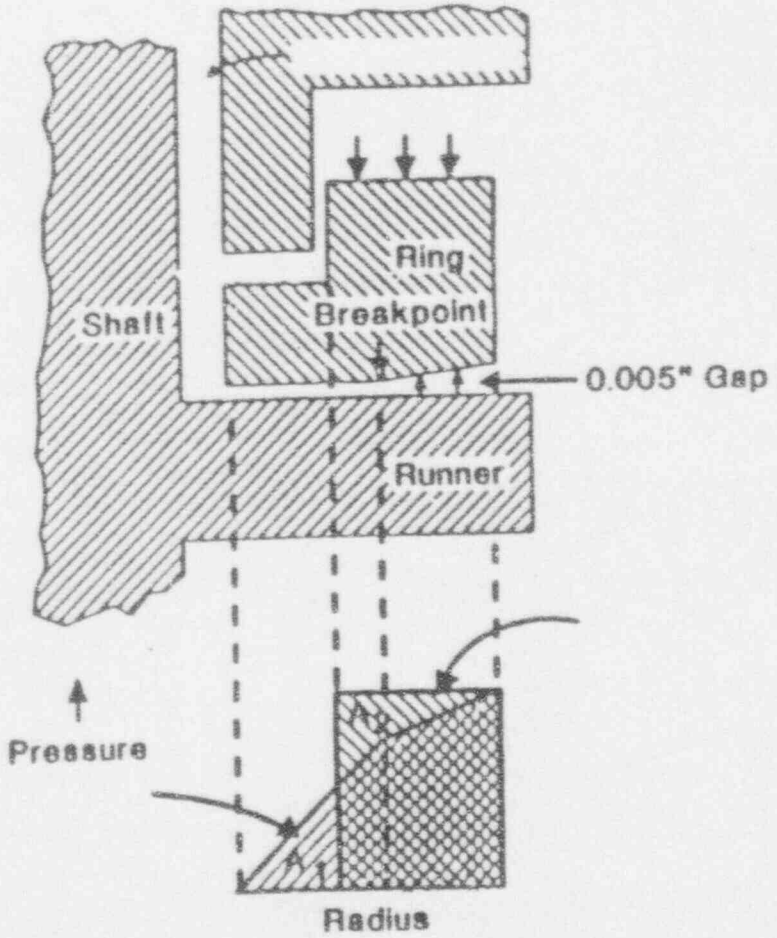

FIGURE 1

ANSWER: 001 (1.00)

a.

REFERENCE:

RCP-02-C, Reactor Coolant Pump, Rev. 3, Pages 10 & 11, Obj 2150

003000K103 3.3/3.6

003000K103 ..(KA's)

ANSWER: 002 (1.00)

c.

REFERENCE:

MP3, Emergency Core Cooling System, page 40 and ECC-01-C-021 Obj. 2267

006000K602 3.4/3.9

006000K602 ..(KA's)

ANSWER: 003 (1.00)

a.

REFERENCE:

MP3 NSSS CVCS, pp. 8 & 9. Obj. PMU-01-C 410
1992 MILLSTONE EXAM HNUM 35182
KA 004010A211 3.1/3.1

004010A211 ..(KA's)

ANSWER: 004 (1.00)

b.

REFERENCE:

Millstone, NSSS Vol 4, Rod Control, pages 26-28. Obj. 2060

001050K401 3.4/3.8

001050K401 ..(KA's)

ANSWER: 005 (1.00)

d.

REFERENCE:

Millstone, NSSS Vol 4, Rod Control, pages 26-28. Obj. 2046

001050A201 3.7/3.9
001050A201 ..(KA's)

~~ANSWER: 006 (1.00)~~

~~b.~~ DELETE

~~REFERENCE:~~

Millstone, NSSS Vol 4, Incore Thermocouple System, Section 2.2, page 4. Obj. ICC-01-J 4201

017020K101 3.2/3.2
017020K101 ..(KA's)

ANSWER: 007 (1.00)

a.

REFERENCE:

MP3, NSSS Vol 4, SGWLC, page 11-14. Obj. 3520

059000A211 3.1/3.4
059000A211 ..(KA's)

ANSWER: 008 (1.00)

c.

REFERENCE:

MP3, NSSS Vol 4, SGWLC, page 5. Obj. 2558.

059000G007 3.1/3.2
059000G007 ..(KA's)

ANSWER: 009 (1.00)

d.

REFERENCE:

MP3, OP 3301D, step 7.4.10, page 18. Obj. 2159

003000K201 3.1/3.1
003000K201 ..(KA's)

ANSWER: 010 (1.00)

d.

REFERENCE:

MP3, NSSS Vol 1, Reactor Coolant Pump, Figure RCP-6. Obj. 2145.

003000K103 3.3/3.6
003000K103 ..(KA's)

ANSWER: 011 (1.00)

d.

REFERENCE:

Millstone Exam Bank Item # 000004 Modified. Obj. PMU-01-C 3C86.
Changed distractor "d" in accordance at facility request.
004000A206 4.2/4.3

004000A201 ..(KA's)

ANSWER: 012 (1.00)

b.

REFERENCE:

MP3, Lesson Plan ESF-01-C, Rev. 2, p. 8
MP3, NSSS Vol 2, Containment Rev. 0, page 3. Obj. 3617.

013000A102 3.9/4.2
013000A102 ..(KA's)

ANSWER: 013 (1.00)

a.

REFERENCE:

MP3 AMSAC System, page 7. Obj. 2832.

013000K404 4.3/4.5

013000K404 ..(KA's)

~~ANSWER: 014 (1.00)~~

~~b.~~ DELETE

~~REFERENCE:~~

MP3, NSSS Vol 2, Intro to ESF Rev 2, page 17. Obj. ESF-01-C 3608.

013000K408 3.1/3.4

013000K408 ..(KA's)

ANSWER: 015 (1.00)

a.

REFERENCE:

MP3, AMSAC Lesson Plan AMS-01-C, Rev 0, page 7. Obj. 2832.
MP3, NSSS Vol 3, AMSAC Rev 2, page 8 and Figure 003.

061000K406 4.0/4.2

061000K406 ..(KA's)

ANSWER: 016 (1.00)

a.

REFERENCE:

MP3, NSSS Vol. 3, AFW, p. 11, Section 2.8. Obj. 2828.

061000K404 3.1/3.4

061000K404 ..(KA's)

ANSWER: 017 (1.00)

b.

REFERENCE:

MP3, NSSS Vol 3, Auxiliary Feedwater Rev 1, Page 6. Obj. 2821

061000K402 4.4/4.6
061000K402 ..(KA's)

ANSWER: 018 (1.00)

c.

REFERENCE:

MP3, BOP Vol4, Radiation Monitoring, Rev 2, pages 6-7, Obj. 2928.
Facility stated that lesson text incorrect.

072000K401 3.3/3.6
072000K401 ..(KA's)

ANSWER: 019 (1.00)

a.

REFERENCE:

NIS-02-C, Excore Nuclear Instr, Rev. 3, Page 62, Para N.2, Obj. 2418

015000K101 4.1/4.2

015000K101 ..(KA's)

ANSWER: 020 (1.00)

b.

REFERENCE:

MP3, NSSS Vol 5, RPSAS Rev 2, page 49,
MP3, NSSS Vol 3, Excore NI, Rev 1, page 19. Obj. 2425

015000K101 4.1/4.2

015000K101 ..(KA's)

ANSWER: 021 (1.00)

c.

REFERENCE:

MP3, NSSS Vol 3, Excore NIs, Rev 1, page 24. Obj. 2416

015000K302 3.3/3.5

015000K302 ..(KA's)

ANSWER: 022 (1.00)

b.

REFERENCE:

MP3, Lesson Plan G09-C1-C, Estimated Critical Condition, pages 2-3.
No Facility Learning Objectives.

001000K518 4.2/4.3

001000K518 ..(KA's)

ANSWER: 023 (1.00)

b.

REFERENCE:

MP3, NSSS Vol 4, Rod Control, Rev.2, page 29. Obj. 2046

001000K403 3.5/3.8

001000K403 ..(KA's)

ANSWER: 024 (1.00)

b.

REFERENCE:

MP3, Rod Position Indicating System, Rev 2, page 2. Obj. 2406.

014000A202 [3.1/3.6]

014000A202 ..(KA's)

ANSWER: 025 (1.00)

d.

REFERENCE:

MP3, BOP Vol 4, Radiation Monitoring, Rev.2, page 9-10. Obj. 2928

073000K401 4.0/4.3

073000K401 ..(KA's)

ANSWER: 026 (1.00)

c.

REFERENCE:

MP3 ECCS, pages 64 & 65 and ECC-01-C-010, Obj. 2246

013000A403 4.5/4.7

013000A403 ..(KA's)

ANSWER: 027 (1.00)

d.

REFERENCE:

MP3, NSSS Vol 1, RCS, Rev 1, page 4. Obj. 326 and 3598.

035010G010 3.2/3.4

035000G010 ..(KA's)

ANSWER: 028 (1.00)

a.

REFERENCE:

MP3, NSSS Vol 1, Rev 1, page 19. Obj. 3635.

002000A301 4.4/4.6

002000A301 ..(KA's)

ANSWER: 029 (1.00)

b.

REFERENCE:

MP3, NSSS Vol 1, Reactor Vessel, Rev 1, pages 29-30. Obj. 3678

002000K518 3.3/3.6

002000K518 ..(KA's)

ANSWER: 030 (1.00)

d.

REFERENCE:

MP3, NSSS Vol 2, ECCS, Rev 2, Figure ECC-018. Obj. 2382.

006030A402 4.4/4.4

006030A402 ..(KA's)

ANSWER: 031 (1.00)

b. or C.

REFERENCE:

MP3, NSSS Vol 2, Rev. 1, pages 5 and 7. T.S. 3.9..11 and 13.
Obj. 2516, 2525,

033000A203 3.1/3.5

033000A203 ..(KA's)

ANSWER: 032 (1.00)

a.

REFERENCE:

MP3, NSSS Vol 4, Pzr Press and Level Cntrl, Rev. 1, pages 6 and 20.
Obj 2346

011000K604 3.1/3.1

011000K604 ..(KA's)

ANSWER: 033 (1.00)

c.

REFERENCE:

MP3, Exam Bank Question 2364 (Modified). Obj. 2346

011000K604 3.1/3.1

011000K604 ..(KA's)

ANSWER: 034 (1.00)

a. or d.

REFERENCE:

MP3, NSSS Vol 4, Pzr. Press & Level Cntrl, Rev. 1, pg 7 and Fig PPL-02.

010000K403 3.8/4.1

010000K403 ..(KA's)

ANSWER: 035 (1.00)

b.

REFERENCE:

MP3, NSSS Vol 5, RPSAS, Rev 2, page 48. Obj. 2377

012000K604 3.3/3.6

012000K604 ..(KA's)

ANSWER: 036 (1.00)

a.

REFERENCE:

MP3, NSSS Vol 5, RPSAS, Rev 2., Page 14. Obj. 2064/2065

012000K603 3.1/3.5

012000K603 ..(KA's)

ANSWER: 037 (1.00)

c.

REFERENCE:

MP3, NSSS Vol 5, SPDS, Rev 0, page 4. Obj. 2982

016000a203 3.0/3.3

016000A203 ..(KA's)

~~ANSWER: 038 (1.00)~~

DELETE

~~c.~~

~~REFERENCE~~:

MP3, NSSS Vol 5, SPDS, Rev 0, page 3. Obj. 2984

016000G008 3.2/3.2

016000G008 ..(KA's)

ANSWER: 039 (1.00)

b.

REFERENCE:

MP3, BOP Vol 1, Diesel Generator, Rev. 1, page 21. Obj. 943
MP3 question bank #377 (modified).

064000A406 3.9/3.9

064000A406 ..(KA's)

~~ANSWER: 040 (1.00)~~

~~b.~~ DELETE

~~REFERENCE:~~

MP3, OP 3346A, page 4, Prerequisite 5.7. and T.S. 3.8.1.1. Obj. 2874.
MP3 Exam Bank question #701 (modified)
064000G005 3.4/3.9

35,360 gallons - 32758 gallons = 2602 gallons.

2602gallons/372 per hour consumed = 7 hours

OR

95 percent - 88% = 7%/1 percent per hour consumption = 7 hours

064000G005 ..(KA's)

ANSWER: 041 (1.00)

a.

REFERENCE:

MP3 question bank #1325. OP 3344B and 3345B. Obj. 2864.

063000G007 3.0/3.2

063000G007 ..(KA's)

ANSWER: 042 (1.00)

c.

REFERENCE:

MP3, OP 3346, Caution Step 7.6.1. Obj. 2845
MP3 examination bank question #2847 (modified).

062000A407 3.1/3.1

062000A407 ..(KA's)

ANSWER: 043 (1.00)

c.

REFERENCE:

MP3, BOP Vol 6, Fire Protection, Rev.1, Page 6. Obj. 2999

086000A402 3.5/3.5
086000A402 ..(KA's)

ANSWER: 044 (1.00)

b.

REFERENCE:

MP3, BOP Vol. 6, IAS, Rev. 1, pages 7, 8, and data sheet. Obj. 3072. Changed at facility request to reflect normal IAS because shutdown IAS is in PTL.

078000K402 3.2/3.5

078000K402 ..(KA's)

ANSWER: 045 (1.00)

c.

REFERENCE:

MP3, NSSS Vol 1, Pressurizer and PRT, Rev. 1, page 12. Obj. 3239
007000K103 3.0/3.2

007000K103 ..(KA's)

ANSWER: 046 (1.00)

b.

REFERENCE:

MP3, Lesson Plan . 1-C, Rev. 1, pages 18-23 and PID 108D684 Sheet 10.
Obj. 2605.

041020K417 3.7/3.9

041020K417 ..(KA's)

ANSWER: 047 (1.00)

a.

REFERENCE:

MP3, NSSS Vol 1, RHR System, Rev. 2, Data Sheet Section II.
Obj. 2227 and 365.
MP3 examination bank question #962 (modified)

005000K109 3.6/3.9

005000K109 ..(KA's)

ANSWER: 048 (1.00)

a .

REFERENCE:

MP3 examination question bank #1901. Obj. 2241.

005000G008 3.3/3.1

005000G008 ..(KA's)

ANSWER: 049 (1.00)

b.

REFERENCE:

MP3, NSSS Vol 3, RPCCW System, Rev. 1, pages 2-3. Obj. 384.

008000K102 3.3/3.4

008000K102 ..(KA's)

ANSWER: 050 (1.00)

d.

REFERENCE:

MP3, NSSS Vol 3, RPCCW, Rev. 1, pages 21-22. Obj. 2289.
MP3 examination question bank #2734 (modified)

008000A301 3.2/3.0

008000A301 ..(KA's)

ANSWER: 051 (1.00)

a.

REFERENCE:

MP3, Lesson Plan SWP-01-C, Rev 2, page 45. Obj. 2978 and 2973.

Facility indicated that lesson plan was incorrect.

076000K116 3.6/3.8

076000K116 ..(KA's)

ANSWER: 052 (1.00)

a.

REFERENCE:

10 CFR 55.53 No Facility Objective

194001A103 2.5/3.4

194001A103 ..(KA's)

ANSWER: 053 (1.00)

a.

REFERENCE:

MP3, RPM 1.3.1, Rev 0, page 3.

New 10CFR20 Requirements. 10CFR20.1201(ii)

No facility objective.

194001K103 2.8/3.4

194001K103 ..(KA's)

ANSWER: 054 (1.00)

c. or b.

REFERENCE:

MP3, SHP 4909A, Rev. 0, page 2. HPR-01-C, page 29. Obj. 3665.

194001K103 2.8/3.4

194001K103 ..(KA's)

~~ANSWER: 055 (1.00)~~

~~b.~~ DELETE

~~REFERENCE:~~

MP3, ACP-QA-2.06A, Rev 21, page 3. No Facility Objective.

194001K102 3.7/4.1

194001K102 ..(KA's)

ANSWER: 056 (1.00)

c.

REFERENCE:

MP3, OP 3342, Rev 4, page 17. No Facility Objective.

194001K107 3.6/3.7

194001K107 ..(KA's)

ANSWER: 057 (1.00)

c.

REFERENCE:

3-OPS-6.04, Rev. 1, Fuse Control, Discussion 1, page 1.
No Facility Objective.

194001K102 3.7/4.1

194001K102 ..(KA's)

~~ANSWER: 058 (1.00)~~

~~a.~~ DELETE

REFERENCE:

MP3, OP 276/2276/3276, page 12. Obj. 3381

Changed at facility request based on verbal direction from Operations Manager.

194001A102 4.1/3.9

194001A102 ..(KA's)

ANSWER: 059 (1.00)

d.

REFERENCE:

MP3, OP 276/2276/3276, Rev. 1, page 19. Obj. 3387

194001K107 3.6/3.7

194001K107 ..(KA's)

ANSWER: 060 (1.00)

d.

REFERENCE:

MP3, ACP 6.01 Rev. 23, Section 6.1.1.4, page 5. No Facility Objective.

194001K105 3.1/3.4

194001K105 ..(KA's)

ANSWER: 061 (1.00)

c.

REFERENCE:

MP3, ACP 6.01 Rev. 23, Section 4.4, page 3. No Facility Objective

194001A116 3.1/4.4

194001A116 ..(KA's)

ANSWER: 062 (1.00)

b.

REFERENCE:

MP3, OP 3272, Rev. 4, EOP Users Guide, p. 13.
MP3, Lesson Plan EOU-01-C, Rev. 3, p. 11. Obj. 1721

194001A102 4.1/3.9

194001A102 ..(KA's)

ANSWER: 063 (1.00)

b.

REFERENCE:

MP3, EOP 3509, Fire Emergency, Rev. 9, Attachment A, p. 1.

194001K116 3.5/4.2

194001K116 ..(KA's)

ANSWER: 064 (1.00)

~~a.~~ C.

REFERENCE:

MP3, 3-OPS-3.07, Valve Operation, Rev. 6, Table 1, p. 7.
No Facility Objective.

194001K101 3.6/3.7

194001K101 ..(KA's)

ANSWER: 065 (1.00)

c.

REFERENCE:

MP3 AOP 3566, Rev. 4, page 2.

Replaced at facility review.

000005K301 4.0/4.3

000005K301 ..(KA's)

ANSWER: 066 (1.00)

d. or C.

REFERENCE:

MP3, OP3301D, Rev. 6, page 36.
MP3, AOP 3554, Rev. 4, pages 4-6. Obj. 3433, 3434, 3435.

000015K303 3.7/4.0

000015K303 ..(KA's)

ANSWER: 067 (1.00)

a.

REFERENCE:

MP3, AOP 3559, Rev 3, Foldout page. Obj. 3454 and 3455.

000051A202 3.9/4.1

000051A202 ..(KA's)

ANSWER: 068 (1.00)

c.

REFERENCE:

MP3, AOP 3553, Rev. 4, page 3. No Facility Objective.

000076G006 3.0/3.3

000076G006 ..(KA's)

ANSWER: 069 (1.00)

a.

REFERENCE:

MP3, EOP 3509, Rev. 9, Attachment C, p. 1 and 2. No Facility Objective.
000067A214 3.2/4.3

000067A214 ..(KA's)

ANSWER: 070 (1.00)

d.

REFERENCE:

MP3, EOP 3504, Rev. 4, pages 3 and 4. No Facility Objective.

000068K318 4.2/4.5

000068K318 ..(KA's)

ANSWER: 071 (1.00)

b.

REFERENCE:

MP3, EOP 3503, Rev. 9, page 4. Obj. 3555

000068A121 3.9/4.1

000068A121 ..(KA's)

ANSWER: 072 (1.00)

a.

REFERENCE:

MP3, EOP ECA-0.0, Rev. 9, page 2. No Facility Objective.

000055K302 4.3/4.6

000055K302 ..(KA's)

ANSWER: 073 (1.00)

c.

REFERENCE:

MP3, AOP 3561, Rev. 4. page 2. No Facility Objective.

000026G011 3.4/3.7

000026G011 ..(KA's)

ANSWER: 074 (1.00)

d.

REFERENCE:

MP3, AOP 3561, Rev. 4, page 3 and 4. No Facility Objective.

000026K303 4.0/4.2

000026K303 ..(KA's)

ANSWER: 075 (1.00)

a.

REFERENCE:

MP3, AOP 3564, Rev. 3, page 4. Obj. 3476.

000057A214 3.2/3.6

000057A214 ..(KA's)

ANSWER: 076 (1.00)

d.

REFERENCE:

MP3, AOP 3566, Rev. 4, page 4. Obj. 3482.

100 gpm RWST flow = 33 gpm 4% boration flow.
130 gpm RWST flow = 43 gpm 4% boration flow.
4.5 minutes X 43 gpm = 193.5 gallons 4% boric flow.
10 gallons 4% boric acid = 8 PCM = 1 PPM
193.50 / 10 X 8 pcm = 155 PCM

000024G007 3.6/3.7

000024G007 ..(KA's)

ANSWER: 077 (1.00)

a.

REFERENCE:

MP3, AOP 3566, Rev. 4, page 2 (Entry Conditions). Obj. 3480

000024G011 3.8/3.9

000024G011 ..(KA's)

ANSWER: 078 (1.00)

c.

REFERENCE:

MP3, EOP E-0, Foldout page. Obj. 1752.

000011A103 4.0/4.0

000011A103 ..(KA's)

REFERENCE:

MP3, E-0, Rev. 13, pages 1-4, 19-22. Obj. 1759, 1768, 1769.

000007G011 4.1/4.3

000007G011 ..(KA's)

ANSWER: 085 (1.00)

a.

REFERENCE:

MP3, E30-01-C Rev. 2, page 19. No Facility Objective.

000038G007 3.6/3.8

000038G007 ..(KA's)

ANSWER: 086 (1.00)

a.

REFERENCE:

MP3, E30-01-C, Rev. 2, page 20. Obj. 1855.

000038K308 4.1/4.2

000038K308 ..(KA's)

ANSWER: 087 (1.00)

c.

REFERENCE:

MP3, EOP 3503, Rev. 5, Attachment A, Page 2. Obj. 3583.

000025G010 3.9/3.9

000025G010 ..(KA's)

ANSWER: 088 (1.00)

c. or a.

REFERENCE:

MP3, EOP 3505, Attachment A, Rev. 5, Page 7. No Facility Objective.

000009K321 4.2/4.5

000009K321 ..(KA's)

ANSWER: 089 (1.00)

b.

REFERENCE:

MP3, EOP-3505, Attachment A, Rev. 5, pages 2 and 12. Obj 3585.

000025G007 3.4/3.6

000025G007 ..(KA's)

ANSWER: 090 (1.00)

d.

ANSWER: 079 (1.00)

a.

REFERENCE:

MP3, FR-S.1 Rev. 8, Step 4, page 4 and 5. Obj. 307

000029K311 4.2/4.3

000029K311 ..(KA's)

ANSWER: 080 (1.00)

c.

REFERENCE:

MP3, EOP E-0, Rev. 13, page 20, 21. Obj. 1767.

000040A201 4.2/4.7

000040A201 ..(KA's)

ANSWER: 081 (1.00)

a.

REFERENCE:

Millstone Exam Bank Item # 000048. FR-H.1 Obj 1961

000074K308 4.1/4.2

000074K308 ..(KA's)

ANSWER: 082 (1.00)

c.

REFERENCE:

MP3, FC1-01-C, FR-C.1 Response To Inadequate Core Cooling, Page 19-20. Obj. 1946.

000074A106 3.6/3.9
000074A106 ..(KA's)

ANSWER: 083 (1.00)

c.

REFERENCE:

MP3, E-0 Rev. 13, pages 5 and 6. Obj. 1756.

000007G010 4.2/4.1

000007G010 ..(KA's)

ANSWER: 084 (1.00)

d.

REFERENCE:

MP3, AOP 3563, Rev. 3, NOTE page 3. No Facility Objective.

000058A103 3.1/3.3

000058A103 ..(KA's)

ANSWER: 091 (1.00)

a.

REFERENCE:

MP3, AOP 3555, Rev. 4, NOTE page 4. 3444.

000009K321 4.2/4.5

000009K321 ..(KA's)

ANSWER: 092 (1.00)

a.

REFERENCE:

MP3, AOP 3555, Rev. 4, page 3. 3446

000009K303 4.1/4.4

000009K303 ..(KA's)

ANSWER: 093 (1.00)

a.

REFERENCE:

MP3, AOP 3563, Rev. 3, Attachment E, page 1. Obj. 3472

NOTE: This question is not answered using the EPIPs. It is depicted in a NOTE at the beginning of the procedure. This decision has a 15 minute time limit on it.

000058A203 3.5/3.9

000058A203 ..(KA's)

ANSWER: 094 (1.00)

a.

REFERENCE:

MP3, AOP 3571, Rev. 3, CAUTION page 3. Obj. 3504

000033G010 3.1/3.3

000033G010 ..(KA's)

ANSWER: 095 (1.00)

c.

REFERENCE:

MP3, NSSS Vol 3, Excore NIS, Figure NIS-1.
MP3, AOP 3571, Rev. 3, Attachment 1 page 1. Obj. 3529.

000033A209 3.4/3.7

000033A209 ..(KA's)

ANSWER: 096 (1.00)

d. or a.

REFERENCE:

MP3, AOP 3571, Rev. 3, Attachments K, L, M, N. No Facility Objective.
000054A205 3.5/3.7

000054A205 ..(KA's)

ANSWER: 097 (1.00)

c.

REFERENCE:

MP3, EOP E-0, Rev. 13, page 11. Obj. 1767
000009A211 3.8/4.1

000009A211 ..(KA's)

ANSWER: 098 (1.00)

a.

REFERENCE:

MP3, PID 108D684. No Facility Objective.
000028A202 3.4/3.8

000028A202 ..(KA's)

ANSWER: 099 (1.00)

b.

REFERENCE:

MP3, AOP3572, Rev. 3, page 7.
MP3, OP 3505, Rev. 10, Section 7.3.2, page 12. Obj. 3536.

000036K303 3.7/4.1

000036K303 ..(KA's)

ANSWER: 100 (1.00)

d.

REFERENCE:

MP3, Lesson Plan SO2-01-C, page 5. No Facility Objective.

000056G007 3.3/3.4

000056G007 ..(KA's)

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

A N S W E R K E Y

MULTIPLE CHOICE

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

A N S W E R K E Y

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

A N S W E R K E Y

092 a

093 a

094 a

095 c

096 d or a

097 c

098 a

099 b

100 d

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

RO Exam PWR Reactor
Organized by Question Number

QUESTION	VALUE	REFERENCE	
001	1.00	21902	
002	1.00	35158	
003	1.00	35182	
004	1.00	9000305	
005	1.00	9000306	
~~006~~	~~1.00~~	~~9000307~~	DELETE
007	1.00	9000308	
008	1.00	9000309	
009	1.00	9000310	
010	1.00	9000311	
011	1.00	9000313	
012	1.00	9000314	
013	1.00	9000315	
~~014~~	~~1.00~~	~~9000316~~	DELETE
015	1.00	9000317	
016	1.00	9000318	
017	1.00	9000319	
018	1.00	9000320	
019	1.00	9000321	
020	1.00	9000322	
021	1.00	9000323	
022	1.00	9000324	
023	1.00	9000325	
024	1.00	9000326	
025	1.00	9000327	
026	1.00	9000328	
027	1.00	9000330	
028	1.00	9000331	
029	1.00	9000332	
030	1.00	9000334	
031	1.00	9000335	
032	1.00	9000336	
033	1.00	9000337	
034	1.00	9000338	
035	1.00	9000339	
036	1.00	9000340	
037	1.00	9000341	
~~038~~	~~1.00~~	~~9000342~~	DELETE
039	1.00	9000343	
~~040~~	~~1.00~~	~~9000344~~	DELETE
041	1.00	9000345	
042	1.00	9000346	
043	1.00	9000347	
044	1.00	9000348	
045	1.00	9000349	
046	1.00	9000350	
047	1.00	9000351	
048	1.00	9000352	
049	1.00	9000353	

QUESTION	VALUE	REFERENCE	
050	1.00	9000354	
051	1.00	9000355	
052	1.00	9000356	
053	1.00	9000357	
054	1.00	9000358	
~~055~~	~~1.00~~	~~9000359~~	DELETE
056	1.00	9000360	
057	1.00	9000361	
058	1.00	9000362	
059	1.00	9000363	
060	1.00	9000364	
061	1.00	9000365	
062	1.00	9000366	
063	1.00	9000367	
064	1.00	9000368	
065	1.00	9000369	
066	1.00	9000370	
067	1.00	9000371	
068	1.00	9000372	
069	1.00	9000373	
070	1.00	9000374	
071	1.00	9000375	
072	1.00	9000376	
073	1.00	9000377	
074	1.00	9000378	
075	1.00	9000379	
076	1.00	9000380	
077	1.00	9000381	
078	1.00	9000382	
079	1.00	9000383	
080	1.00	9000384	
081	1.00	9000385	
082	1.00	9000386	
083	1.00	9000387	
084	1.00	9000388	
085	1.00	9000389	
086	1.00	9000390	
087	1.00	9000391	
088	1.00	9000392	
089	1.00	9000393	
090	1.00	9000394	
091	1.00	9000395	
092	1.00	9000396	
093	1.00	9000397	
094	1.00	9000398	
095	1.00	9000399	
096	1.00	9000400	
097	1.00	9000401	
098	1.00	9000402	

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
099	1.00	9000403
100	1.00	9000404
	100.00	
	100.00	

RO Exam PWR Reactor
Organized by KA Group

PLANT WIDE GENERICS

QUESTION	VALUE	KA
062	1.00	194001A102
058	1.00	194001A102
052	1.00	194001A103
061	1.00	194001A116
064	1.00	194001K101
055	1.00	194001K102
057	1.00	194001K102
053	1.00	194001K103
054	1.00	194001K103
060	1.00	194001K105
056	1.00	194001K107
059	1.00	194001K107
063	1.00	194001K116
PWG Total	13.00	

PLANT SYSTEMS

Group I

QUESTION	VALUE	KA
023	1.00	001000K403
022	1.00	001000K518
005	1.00	001050A201
004	1.00	001050K401
010	1.00	003000K103
001	1.00	003000K103
009	1.00	003000K201
011	1.00	004000A201
003	1.00	004010A211
012	1.00	013000A102
026	1.00	013000A403
013	1.00	013000K404
014	1.00	013000K408
020	1.00	015000K101
019	1.00	015000K101
021	1.00	015000K302
006	1.00	017020K101
007	1.00	059000A211
008	1.00	059000G007
017	1.00	061000K402
016	1.00	061000K404
015	1.00	061000K406
018	1.00	072000K401

PLANT SYSTEMS

Group I

QUESTION	VALUE	KA
PS-I Total	23.00	

Group II

QUESTION	VALUE	KA
028	1.00	002000A301
029	1.00	002000K518
002	1.00	006000K602
030	1.00	006030A402
034	1.00	010000K403
032	1.00	011000K604
033	1.00	011000K604
036	1.00	012000K603
035	1.00	012000K604
024	1.00	014000A202
037	1.00	016000A203
038	1.00	016000G008
031	1.00	033000A203
027	1.00	035000G010
042	1.00	062000A407
041	1.00	063000G007
039	1.00	064000A406
040	1.00	064000G005
025	1.00	073000K401
043	1.00	086000A402
PS-II Total	20.00	

Group III

QUESTION	VALUE	KA
048	1.00	005000G008
047	1.00	005000K109
045	1.00	007000K103
050	1.00	008000A301
049	1.00	008000K102
046	1.00	041020K417
051	1.00	076000K116
044	1.00	078000K402
PS-III Total	8.00	

R O Exam PWR Reactor
Organized by KA Group

PLANT SYSTEMS

QUESTION	VALUE	KA
PS Total	51.00	

EMERGENCY PLANT EVOLUTIONS
Group I

QUESTION	VALUE	KA
065	1.00	000005K301
066	1.00	000015K303
076	1.00	000024G007
077	1.00	000024G011
073	1.00	000026G011
074	1.00	000026K303
080	1.00	000040A201
067	1.00	000051A202
072	1.00	000055K302
075	1.00	000057A214
069	1.00	000067A214
071	1.00	000068A121
070	1.00	000068K318
082	1.00	000074A106
081	1.00	000074K308
068	1.00	000076G006
EPE-I Total	16.00	

Group II

QUESTION	VALUE	KA
083	1.00	000007C010
084	1.00	000007G011
097	1.00	000009A211
092	1.00	000009K303
088	1.00	000009K321
091	1.00	000009K321
078	1.00	000011A103
089	1.00	000025G007
087	1.00	000025G010
079	1.00	000029K311
095	1.00	000033A209
094	1.00	000033G010
085	1.00	000038G007
086	1.00	000038K308
096	1.00	000054A205

RO Exam PWR Reactor

Organized by KA Group

EMERGENCY PLANT EVOLUTIONS

Group II

QUESTION	VALUE	KA
090	1.00	000058A103
093	1.00	000058A203
EPE-II Total	17.00	

Group III

QUESTION	VALUE	KA
098	1.00	000028A202
099	1.00	000036K303
100	1.00	000056G007
EPE-III Total	3.00	
EPE Total	36.00	
Test Total	100.00	

A N S W E R K E Y

92/Q

MULTIPLE CHOICE

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

A N S W E R K E Y

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

A N S W E R K E Y

092 a

093 a

094 a

095 c

096 d or a

097 c

098 a

099 b

100 d

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

ATTACHMENT 2

WRITTEN EXAMINATION COMMENT RESOLUTION

Facility comments in regard to 15 questions were submitted to the NRC Region I office on March 11, 1994. These comments are included herein as Attachment 3 to this report. The following is a summary of each of those comments along with its respective resolution by the NRC.

Question #6

Facility Comment: The term "impedance" is used incorrectly in what was designated as the correct answer. Also, the knowledge required to answer the question goes beyond the intent of the learning objective.

Recommendation: Credit be given for answers "a" and "b" or delete question from examination.

NRC Resolution: Agreed with facility, in that, the term "impedance" was used incorrectly; and, thus, there is no correct answer. Question #6 was deleted from the examination.

Question #14

Facility Comment: Question requires knowledge level that goes beyond that typically required at the RO level and is not a performance based question.

Recommendation: Delete question from the examination.

NRC Resolution: Agreed with the facility. Question #14 was deleted from the examination.

Question #15

Facility Comment: Both answers "a" and "b" are correct since the AMSAC circuitry results in a sequence denoted in answer "b," should an ATWS occur. AMSAC actuation signals will be initiated because of turbine power signal and low SG levels.

Recommendation: Credit be given for both answers "a" or "b."

NRC Resolution: Disagreed with facility in that there is no mention of an ATWS occurring in the stem of the question. Candidates were cautioned prior to the beginning of the test about making assumptions. Question stayed as is with the only correct answer being "a."

Question #16

Facility Comment: The answer is misleading in that it describes a "feedwater" phase change instead of an "AFW" phase change.

Recommendation: Credit be given for both answers "a" or "d."

NRC Resolution: Disagreed with facility. The stem of the question clearly addresses AFW flow out the break. Questions stayed as is with the only correct answer being "a."

Question #31

Facility Comment: The question requires the candidate to determine if three given spent fuel pool parameters are in compliance with limits; however, the question does not specify what limits, i.e., Tech Spec limits, normal operating limits or alarm limits. Answer "a" is correct for T.S. limits and answer "b" is correct for normal operating limits.

Recommendation: Credit be given for both answers "a" and "b."

NRC Resolution: Agreed with facility. The question did not specify what limits; therefore, credit was given for both answers "a" and "b" as correct.

Question #34

Facility Comment: The question requires the candidate to describe the effect of the pressurizer master controller failing high. The question did not specify what component (i.e., output, input or setpoint) of the master controller that failed. Clarification was asked by several candidates; however, additional detail was not provided. Based upon the above, and depending on what component is considered to have failed high, it is feasible that both answers "a" and "d" are correct.

Recommendation: Credit be given for both answers "a" or "d."

NRC Resolution: In light of the fact that further clarification was not given to the candidates, it is concluded that there are two possible correct answers. Credit was given for answers "a" or "d."

Question #38

Facility Comment: The color BLUE has no fixed priority in the hierarchy of colors for the Critical Safety Function Status Trees, thus the question, as stated, is not valid. Also, as a result, there is no correct answer.

Recommendation: Delete question from the examination since there is no correct answer.

NRC Resolution: Agreed with the facility. There was no correct answer. Question was deleted from the examination.

Question #40

Facility Comment: The question requires a calculation of the time it would take for the diesel generator fuel oil storage tank to reach a predetermined level. Since the tank is rounded at the top and bottom,

Question #40

Facility Comment: The question requires a calculation of the time it would take for the diesel generator fuel oil storage tank to reach a predetermined level. Since the tank is rounded at the top and bottom, Figure 10.1 of OP3346B would be needed in order to accurately determine the correct amount of time. Figure 10.1 of OP3346B was, however, not provided to the candidates, thus the candidates had to make their own assumptions.

Recommendation: Delete the question from the examination.

NRC Resolution: Agreed with the facility. Since Figure 10.1 of OP3346B was not provided to the candidates and the fact that all four available answers were chosen at least once by one or more of the candidates, this question was deleted from the examination.

Question #54

Facility Comment: The question requires the candidate to determine the count rate at which an individual is considered to be contaminated (100 counts above background). It was necessary for the candidate to determine what background level was acceptable to make this determination. Also, it was not evident from the stem of the question, what the purpose of the frisk was for, i.e., exit an RCA or a "gross contamination" check while within the RCA. The total count rate can be different based upon the purpose of the frisk, which is allowed by procedure. Thus, there are two possible answers, dependent upon how the candidate addressed the purpose of the frisk.

Recommendation: Credit be given for both answers "b" or "c."

NRC Resolution: Agreed with the facility. Credit was given for both answers "b" or "c."

Question #55

Facility Comment: The question dealt with the placement of tags on a switch if the switch is to be removed. The correct answer is supported by a procedure that was written, but had not been implemented, due to the issuance of a station management memo which delayed implementation. As a result, there is currently no correct answer, since the decision would be decided upon by the SS and the Job leader and could include a number of decisions, all of which would be correct.

Recommendation: Delete the question from the examination.

NRC Resolution: Since there was no current procedure that supported the correct answer, this question was deleted from the examination.

procedures support the RO taking whatever action is necessary to place the plant in a required safe condition without SCO or SS direction. The Operations Manager has stated that it is his preference that the RO report the automatic actuation failure to the SCO, and that the SCO direct the actuation of the RPS. It is felt this direction does not contradict the guidance provided in the two operating procedures, and therefore answer "d" is also correct.

Recommendation: Credit be given for answers "a" or "d."

NRC Resolution: Disagreed with the facility. The question was deleted. A condition of an operating license is to operate and maintain the reactor plant in safe operating condition. It is felt that this responsibility should be paramount in any situation. Although it is prudent to keep the SCO informed as best one can, it should never prevent or deter a licensed operator from performing actions he feels necessary to maintain the safe operation of the reactor plant.

Question #64

Facility Comment: ACP-QA-2.20, "Methods of Performing Verifications," ...section 3.1.3 states that one should check the valve stem position or mechanical position indicator and determine if the valve is in the required position, which would make answer "c" the correct answer. Answer "a" is contrary to guidance provided in 3-OPS-3.07, page 7 of 7, column 2, item 3.

Recommendation: Change the correct answer from "a" to "c."

NRC Resolution: Agree with the facility. The correct answer was changed from "a" to "c."

Question #66

Facility Comment: Question requires selecting the minimum actions to be taken in the next 30 minutes upon identification of a #1 RCP seal failure. It is believed that both answers "c" and "d" are correct, the only difference being is that distractor "d" includes closing the pressurizer spray valve. Other than that, these two answers are identical. Since a major action in response to this failure requires the feeding up of the affected steam generator, but was not listed in any of the answers, confusion resulted among several of the candidates as to what constituted MINIMUM actions as requested in the question stem. Also, candidates are not required to memorize abnormal operating procedure steps and substeps.

Recommendation: Credit be given for answers "c" or "d" or delete the question.

Recommendation: Credit be given for answers "c" or "d" or delete the question.

NRC Resolution: Agreed with the facility. Both answers "c" and "d" were accepted.

Question #88

Facility Comment: The question stem provides conflicting initial conditions, in that it provides for a Mode 6 condition simultaneous with a Reduced Inventory Operation (RIO) condition; however, RIO may be conducted only in Mode 5. There are two correct answers based upon what mode of operation you are in. For Mode 6, answer "a" is correct; for Mode 5, RIO conditions, answer "c" is correct.

Recommendation: Credit be given for answers "a" or "c" or delete the question.

NRC Resolution: Agreed with the facility that there are two correct answers depending upon the MODE of operation. Credit was given for answers "a" or "c."

Question #96

Facility Comment: The stem of the question did not indicate that the source of the answer was to be in accordance with an operating procedure or in accordance with the system/component design. As a result there are two correct answers, depending on how the candidate interpreted the stem of the question.

Recommendation: Credit be given for answers "a" or "d."

NRC Resolution: Agreed with the facility. Credit was given for answers "a" or "d."

ATTACHMENT 3

MILLSTONE 3 WRITTEN EXAMINATION COMMENTS