



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W., SUITE 2900
ATLANTA, GEORGIA 30323-0199

Docket No.: 50-250 and 50-251

License No.: DPR-31 and DPR-41

Report No.: 50-250/96-300 and 50-251/96-300

Licensee: Florida Power and Light Company

Facility: Turkey Point Plant Units 3 and 4

Location: P. O. Box 14000
Juno Beach, FL 33408-0420

Dates: June 14-21, 1996

Examiners: George T. Hopper, Chief License Examiner
Richard S. Baldwin, License Examiner
Edwin Lea, License Examiner
Paul Steiner, License Examiner
David Lane, Sonalysts
Keith Parkinson, Sonalysts

Thomas A. Peebles, Chief, Operator Licensing and Human
Performance Branch, Division of Reactor Safety

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EXECUTIVE SUMMARY

Turkey Point Nuclear Plant NRC Examination Report 50-250/96-300 and 50-251/96-300

Facility training personnel and NRC examiners conducted an announced operator licensing initial examination encompassing the period June 14-21, 1996. This examination implements the operator licensing requirements of 10 CFR §55.41, §55.43, and §55.45.

Operations

- Seven Senior Reactor Operator (SRO) and twelve Reactor Operator (RO) candidates received written and operating examinations.
- The facility administered the written examination on June 14, and NRC examiners administered operating examinations on June 17-21, 1996.
- Two SRO and Four RO candidates marginally passed the examination (Paragraph 01.4).
- The examiners identified generic performance discrepancies particularly in the area of diagnosis of events and conditions (Paragraph 01.4).
- Examiners noted Emergency Operating Procedure discrepancies during administration of the operating test (Paragraph 01.5).

Results:

Candidate Pass/Fail

	SRO	RO	Total	Percent
Pass	6	12	18	94.7 %
Fail	1	0	1	5.3 %

Report Details

Summary of Plant Status

During the period of the examinations both units were at 100 percent power.

I. Operations

01 Conduct of Operations

01.1 General Comments

NRC examiners conducted regular, announced operator licensing initial examinations during the period June 14-21, 1996. NRC examiners administered examinations under the guidelines of the Examiner Standards, NUREG-1021, Revision 7, Supplement I. Four SRO upgrade, three SRO instant, and twelve RO license applicants received written examinations and operating tests. One SRO candidate failed the written examination. Four ROs and two SROs exhibited marginal performance.

01.2 Examination Development

The facility pre-reviewed the written examinations prior to the preparation week under security agreement. This review was extensive, encompassing approximately 1.5 man-weeks of effort by the licensee. However, post exam analysis by the licensee resulted in examination comments on four questions. One post exam comment (SRO question #44) resulted in an additional correct answer that the chief examiner had questioned during the facility pre-review. The reviewers did not identify the distractor as being an immediate action to another procedure. With the advent of the new examination development process in the near future, greater effort will be required to ensure question accuracy and validity.

The examination team conducted the preparation visit during the week of June 3, 1996. During this period, six scenarios and three Job Performance Measure (JPM) sets were validated. The licensee also reviewed the administrative and JPM questions associated with each set.

01.3 Examination Administration

The licensee administered and proctored the RO and SRO written examinations on June 14, 1996. The examination was administered without difficulty. The NRC examiners administered the operating test to all candidates during the period of June 17-21, 1996. The schedule allowed each examiner to focus on one portion of the test (e.g., simulator JPMS or in-plant/control room JPMS) each day for all assigned candidates.

01.4 Candidate Performance and Results

Examinations were administered to 7 SRO and 12 RO candidates. One SRO candidate failed the written examination. All other candidates passed. Two RO candidates were evaluated as marginal passes on the written examination having received a score of ≤ 82 percent. One RO candidate marginally passed Section "A" (ADMIN) of the operating test. One other

RO candidate marginally passed the Section "B" (JPM) portion of the operating test. This candidate was graded satisfactory on only 8 out of 10 systems. A grade of satisfactory on 8 out of 10 systems is the minimum required to pass. Two SRO candidates were marginal passes on the simulator portion of the operating test. The simulator portion of the operating test is the most performance-based category and is used to evaluate a candidate's ability to safely operate plant systems under dynamic, integrated conditions. The licensee was provided with a copy of each candidate's examination to allow development of appropriate remedial training and to evaluate the initial operator training program for weaknesses.

The examiners documented a significant number of deficiencies as a result of poor candidate performance which were evaluated to determine generic training weaknesses. Reactor Operator and Senior Reactor Operator written examination results were evaluated. Numerous questions were identified where more than 50 percent of the candidates selected an incorrect answer. This indicated a generic weakness in the subject matter tested. The questions missed are listed below together with the number of candidates that selected the wrong answer.

<u>SRO Question</u>	<u>RO Question</u>
#24 5/7	#4 6/12
#47 5/7	#16 6/12
#76 5/7	#54 7/12
#90 4/7	#58 9/12
#91 4/7	#73 11/12
	#78 6/12
	#80 6/12

The examiners identified several generic weaknesses from the results of the operating test. The examiners noted a generic weakness in diagnostic skills during the simulator examinations. Candidates were slow or exhibited errors in the diagnosis of events and conditions. This was a weakness noted in the previous examination report (95-300). The examiners noted problems such as; candidate's were slow to recognize failed open steam dumps; incorrectly identified steam generators as being ruptured; interpreted the effects of a dropped rod at power as an RCS leak; and failed to note a stuck rod during a reactor trip while performing immediate actions. In particular, the SRO instant candidates exhibited difficulty in this area. One RO and two SRO candidates failed a JPM because they did not notice that a misaligned control rod had stopped moving during the realignment process. Candidate responses to the JPM questions and scenario follow-up questions also indicated that candidates had difficulty understanding integrated plant response to instrument malfunctions or events. The examiners also noted that communications between crew members lacked repeat backs and was often informal. These and other deficiencies noted in the comments sections of the individual examination reports should be evaluated to assess weaknesses in the training program.

01.5 Procedure Discrepancies (42001)

The examiners noted several procedural problems during the administration of the examination covering ten different procedures. Most of the comments were minor in nature, i.e., Writer's Guide discrepancies or clarification issues. The licensee consolidated the comments into two Plant Management Action Items, PM96-06-232 & 233. These procedures will be reviewed and changed as necessary. Two comments concerned the Emergency Operating Procedures and are discussed below.

- a. The Emergency Containment Filtration system consists of three trains of HEPA and charcoal filters designed to remove Iodine during an accident. The system is designed to automatically initiate a water dousing system which keeps the charcoal beds cool in the event of a fan failure. This dousing system requires containment spray pump operation to supply the borated water which cools the beds. If the spray pumps are not operating, operators are required to manually initiate containment spray if charcoal bed temperature exceeds 325 deg F (Ref SD-029 pg 4). The examiners could find no procedural guidance within the EOPs which cautions or directs the operators to perform this action nor were there any alarm functions associated with these thermocouples.
- b. EOP E-3, "Steam Generator Tube Rupture," Step 2, lists the methods used to identify the ruptured steam generator. Examiners observed several groups of candidates use a steam flow/feed flow mismatch to identify a ruptured steam generator. This method, however, is not listed in step 2 of the licensee's E-3 procedure nor is it specifically delineated in the Westinghouse Owner's Group (WOG) Emergency Response Guideline for step 2 of E-3. However, the WOG Background document for this procedure contains a discussion on the use of a steam flow/feed flow mismatch as a viable means of identifying a ruptured steam generator. The candidates have been trained on this technique, but it is not included in the procedure. In addition, the licensee's procedure directs the operators to have chemistry check the DAM-1 activity monitor reading to identify the ruptured generator. This monitor samples a common line and provides no useful information for identifying a specific ruptured generator.

The procedural problems noted above will be tracked as Inspector Follow-up Item 50-250/96-300-01 and 50-251/96-300-01, "EOP Discrepancies regarding E-3 and ECF System."

01.6 Control Room Observations (71715)

During validation and administration of the examination, the examiners observed the conduct of operations by currently licensed operators in the control room. The ROs were attentive to the evolutions in progress. The SRO supervising control room operations, limited personnel access for official business only, which contributed to a quiet, professional atmosphere.

01.7 Review of Updated Final Safety Analysis Report (UFSAR) Commitments

A recent discovery of a licensee operating their facility in a manner contrary to the UFSAR description, highlighted the need for a special focused review that compares plant practices, procedures, and/or parameters to the UFSAR descriptions. While performing the examinations discussed in this report, the examiners reviewed the facility's UFSAR regarding the Steam Generator Tube Rupture. During the examination, the examiners identified a difference between the plant operating practices and the description contained in the UFSAR. Chapter 14.2.4 described that the steam generator liquid sample monitor (R-19) as the means by which the affected steam generator is identified. Chapter 11.2 further stated that "Each steam generator is individually sampled in order to determine the source. This sampling sequence is achieved by manually selecting the desired unit to be monitored and allotting sufficient time for sample equilibrium to be established (approximately 1 minute)." The examiner determined from interviews with licensee personnel that the sample purge for each generator would take approximately 10 minutes. In addition, grab samples would be taken vice using this monitor to identify the generator with the tube leak. The examiners noted that a potential for negative training exists if, during simulator training, operators are provided feedback of chemistry results in less than ten minutes.

V. Management Meetings

X1 Exit Meeting Summary

At the conclusion of the site visit, the examiners met with representatives of the plant staff listed in paragraph 1 to discuss the results of the examinations.

The examiners asked the licensee whether any materials examined should be considered proprietary. No proprietary information was identified.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

T. Abbatiello, Site Quality Manager
K. Beatty, Manager Nuclear Training, Juno Beach
O. Hanck, Licensing Engineer
D. Jernigan, Plant General Manager
T. Jones, Operations Supervisor
V. Kaminskis, Services Manager
C. Kelly, Training Manager (Acting)
J. Knorr, Licensing Engineer
R. Lindsey, Initial License Training Supervisor

NRC

T. Johnson, Senior Resident Inspector
B. Desai, Resident Inspector
J. Munro, NRR

INSPECTION PROCEDURE(S) USED

IP 71715: Control Room Observations
IP 42001 Emergency Operating Procedures

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

50-250,251/96-300-01 IFI EOP Discrepancies regarding E-3 and ECF System.

Closed

NONE

Discussed

Procedural problems noted in PM96-06-232 and 233

LIST OF ACRONYMS USED

ECF Emergency Containment Filters
EOP Emergency Operating Procedure
HEPA High Efficiency Particulate Air
JPM Job Performance Measure
NRC Nuclear Regulatory Commission
RCS Reactor Coolant System
RO Reactor Operator
SRO Senior Reactor Operator
UFSAR Updated Final Safety Analysis Report
WOG Westinghouse Owner's Group

SIMULATOR FACILITY REPORT

Facility Licensee: Turkey Point Nuclear Station Units 1 and 2

Facility Docket Nos.: 50-250 and 50-251

Operating Tests Administered On: June 17-21, 1996

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

During the conduct of the simulator portion of the operating tests the following items were observed:

<u>Item</u>	<u>Description</u>
Pressurizer Loop Seal Line	The simulator model does not incorporate the loop seal. Consequently, expected plant response for some procedures will deviate from actual plant response.



JUN 28 1996

L-96-171

96 JUN -8 P1:26

Mr. Stewart D. Ebnetter
Regional Administrator, Region II
U. S. Nuclear Regulatory Commission
101 Marietta St., N.W., Suite 2900
Atlanta, GA 30323

Dear Mr. Ebnetter:

Re: Turkey Point Units 3 and 4
Docket Nos. 50-250 and 50-251
SRO/RO License Examination Comments

In accordance with the provisions of NUREG-1021, Operator Licensing Examiner Standards, Examiner Standards ES-402, Attachment 3, Policies for Facility Review of Written Examinations, enclosed are Florida Power and Light Co. (FPL) comments on four of the questions which were part of the NRC site-specific written examination administered at Turkey Point on June 14, 1996. These comments and recommendations were discussed with the NRC Chief Examiner and are being submitted for your review.

Should there be any questions, please contact R. W. Lindsey at (305) 246-6649.

Very truly yours,

A handwritten signature in black ink, appearing to read 'R. J. Hovey', with a horizontal line extending to the right.

R. J. Hovey
Vice President
Turkey Point Plant

OIH

Enclosure

cc: T. A. Peebles, Chief, Operations Branch, Region II, USNRC
G. T. Hopper, Chief Examiner, Region II, USNRC
T. P. Johnson, Senior Resident Inspector, USNRC, Turkey Point Plant
Document Control Desk, USNRC, Washington, D.C.

COMMENTS FROM
U.S. NUCLEAR REGULATORY COMMISSION SITE-SPECIFIC WRITTEN EXAM

EXAM DATE: June 14, 1996

LICENSE LEVEL: SRO (RO)

FACILITY: Turkey Point

We respectfully request you review the following written exam questions:

43 (69),

44 (70),

68 (94),

95,

[please see attached].

SRO QUESTION 43 (69)

Which ONE of the following conditions will sound an audible alarm on the main fire panel in the control room?

ANSWER:

C. - Any red fire alarm lamp or yellow trouble lamp lights.

REFERENCE:

SD-153 Fire Protection, Alternate Safe Shutdown and Safe Shutdown Systems, page 39.
E.O. 6 of LP 6902143

COMMENT:

An Audible Alarm is also caused by improper condition of battery or charger, please see Pyrotronics vendor material (attached).

RECOMMENDATION:

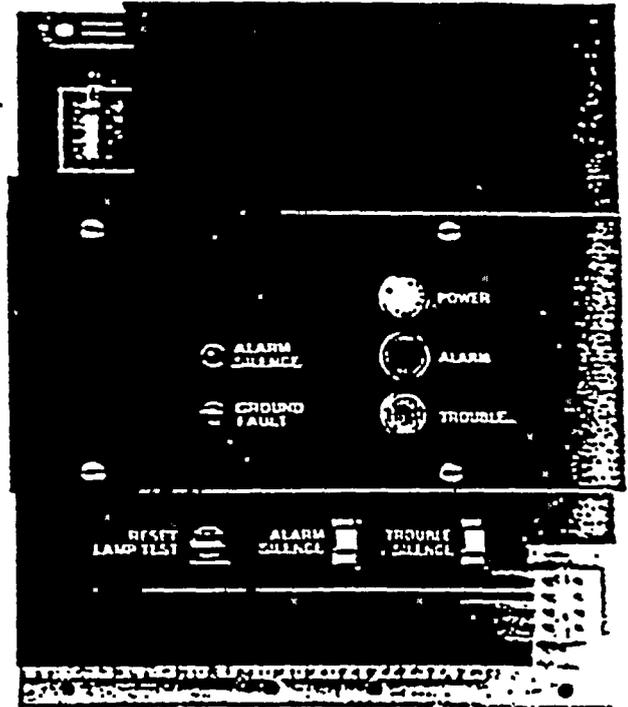
Accept answer A as an additional correct answer.

A. - The battery power supply to the panel fails.

Pyr-A-Larm

System 3

Universal Alarm Control



MODEL CP-31 CONTROL PANEL

INSTALLATION AND MAINTENANCE INSTRUCTIONS



Pyrotronics

A Baker Industries Company

8 Ridgedale Avenue, Cedar Knolls, New Jersey 07927

practically any size and type system demand. A wide variety of input, output, and control modules are available to satisfy the most exacting and meticulous building control, security, and alarm specifications.

Three (3) main visual system indicators are mounted on the face of the CP-31, a white "Power" lamp, a red "Alarm" lamp, and a yellow "Trouble" lamp. A red LED "Alarm Silence" indicator and a yellow LED "Ground Fault" indicator are also supplied.

Three (3) momentary contact manual switches are mounted on the CP-31, one serving as a combination "Reset/Lamp Test" function, a second permits "Trouble Silence" and a third permits "Alarm Silence".

Note: When battery standby is used, audible power is 24 Vdc.

Four (4) receptacles are provided, one for the system module bus system, a second for the input power from the power supply. The third accommodates a battery charger/transfer module or a program plug, while the fourth provides chassis ground disconnect.

Power

The Model CP-31 operates from a three-wire, 120 V, 60 Hz. supply consisting of a main power phase, a trouble-phase, and a common neutral. Low voltage system power is provided by the PS-31 power supply module via a pin type connector. Battery standby is available as an option. A white system power lamp is illuminated to show that power is normal.

Loss of the main operating power on Line 1 is signaled by the system audible and yellow visual trouble indicators. Restoration of main operating power returns the panel to normal condition. When battery standby is specified, loss of main operating power results in a visual trouble signal, and the batteries provide power to the system.

The CP-31 provides terminals for either 120 Vac or 24 Vdc audible alarm device power. The choice of power is determined by a program plug supplied with the control panel.

Alarm

An alarm signal at the CP-31 panel is initiated by any system module designed for alarm monitoring functions (such as a Model ZN-30, ZN-31, or ZA-30 Zone Module). The alarm signal is triggered via the alarm circuit of the module bus system. When this occurs, the red system "Alarm" lamp is illuminated and two alarm output circuits (one silenceable and one non-silenceable) are energized.

The silenceable alarm output circuit can be opened (silenced) by operating the momentary "Alarm Silence" switch. A red "Alarm Silence" LED is then illuminated and remains lit until the Model CP-31 is reset by operating the momentary "Reset/Lamp Test" switch.

Terminals for remote control of alarm silencing are provided in addition to a set of alarm operated SPDT contacts (rated 120 Vac, 3 amp).

An alarm signal will override a trouble condition.

Trouble

A trouble condition, which will illuminate the yellow system "Trouble" lamp and sound the built-in audible trouble signal will be caused by any of the following:

- removal of or trouble associated with a system bus connected module
- an open in the CP-31 alarm relay coil
- loss of main operating power
- a ground fault on any external line or dc power
- improper condition of battery or charger

A ground fault condition is additionally indicated by a yellow "Ground Fault" LED.

Terminals for 24 Vdc connection to a remote visual annunciator are provided together with a set of trouble operated SPDT contacts (rated 120 Vac, 3 amp).

Note: When the panel is on emergency battery operation, the individual module and ground fault indicators are inoperative.

Flexibility

The use of the Pyr-A-Larm Control Panel, Model CP-31 (with power supply PS-31) provides the basis of a control system that can meet a wide variety of functional demands. Implementing the modular building block concept, a multiple-operation system can be supplied that will accommodate a combination of any of the following options, provided the total current demand does not exceed 10 amp. in alarm condition. (Refer to the applicable module catalog sheet to determine exact requirements.) For systems with greater current demands, alternate or additional power supplies are available.

- 2-stage alarm
- Multiple alarm priorities
- Master code
- Municipal tie with disconnect light and switch
- Remote station connection with disconnect light and switch
- Time limit cutout with indicator
- Supplementary relays
- Battery standby
- Double supervision, power failure annunciation
- Security circuits
- Non-fire monitoring
- Subsequent alarm
- Confirmation
- Class A detector and audible signal circuits
- Disconnect switch
- Selective manual audible signal silence
- Multiple zones
- Extinguishing system release

Architect's Specifications

The control panel for the alarm system shall be a Pyr-A-Larm Model CP-31. It shall be listed by Underwriters Laboratories Inc. for service in accordance with NFPA Standards 72, 72B, 72C, and 72D.

It shall include lamps for system alarm, trouble, and ground detection. Momentary contact switches shall be provided for "Reset/Lamp Test", "Trouble Silence", and "Alarm Silence". The trouble silence switch shall silence the internal trouble signal sounding device. The alarm silence switch shall silence audible signal appliances connected to supervised audible signal circuits. The ground detection light shall be illuminated by a single ground fault on any detector circuit, audible signal circuit, or DC power line within the system. A single ground fault shall not prevent proper operation of the system. A means to conveniently isolate the ground detection circuit from ground shall be provided for ease of trouble shooting.

Alarm receipt shall override trouble indications. Troubled indications shall reappear upon resetting of the alarm condition. Trouble indications shall be self-restoring upon correction of the fault condition.

The Pyr-A-Larm Model CP-31 shall control any quantity of detection devices, audible signal appliances, input modules, and output modules. It shall be compatible with any combination of system control modules. It shall not be necessary to remove or exchange the control panel in order to expand the system or add functions such as, but not limited to:

- multi-stage alarm
- multiple alarm priorities
- coding
- time-in or time-out control
- confirmation of alarm
- double supervision, power failure annunciation
- disconnect switches
- remote annunciation
- security circuits
- battery standby power

The control panel shall have one set of SPDT alarm operated relay contacts and one set of SPDT trouble operated relay contacts. All contacts shall be rated at 120 Vac, 3 amp.

Terminals shall be provided for connection of remote trouble silence units containing a switch plus audible and visual trouble indicators. The control panel shall also be compatible with remote alarm silence and drill units.

Audible and visual trouble indications shall be caused by any of the following:

- removal of a detection device from a detector circuit
- an open or ground fault in a detector circuit
- an open, short, or ground fault in an audible signal circuit
- a ground fault on any DC line
- an open in the circuit connection to a local emergency municipal box
- removal of system input, output, or control module(s)
- improper condition of battery or charger

DC power shall be provided by a system power supply from a three-wire 120/240 Vac supply with grounded neutral, with battery standby as an option.

The Model CP-31 shall permit expansion of system capability to incorporate any combination of Pyr-A-Larm System 3 modules not exceeding a maximum current demand of 10 amp.

Power Requirement: 120/240 Vac, 60 Hz, three-wire 6 amp.

Ordering Information

The Model CP-31 (with power supply Model PS-31, catalog sheet 3052) occupies space normally taken by six (6) modules and must be located in the upper right-hand position of any type EA enclosure. This should be considered when sizing the enclosure. Also specify whether the CP-31 is to be factory adjusted for ac or dc audible signaling by adding suffix "A" for ac or "D" for dc. When a BC-31 Battery Charger/Transfer module is used, audible signals must be 24 Vdc units and the CP-31 should be ordered with no suffix letter.

The Model CP-31 is normally mounted on rail/brackets, separately priced, for installation in the EA enclosures. Each enclosure requires a rail/bracket assembly kit of appropriate size. The size of the enclosure therefore must be noted at the time of order. Rail/bracket assembly kits are shown below. Also refer to catalog sheet 3325.

Model No.	Description	Shipping Weight
CP-31	Control Panel	3.5 lbs. (1.59 kg)
CP-31A	Control Panel (for ac audible signals, includes Jumper Plug, Model JP-3)	3.5 lbs. (1.59 kg)
CP-31D	Control Panel (for dc audible signals, includes Jumper Plug, Model JP-4)	3.5 lbs. (1.59 kg)

Rail/Bracket Assembly Kit	Enclosure	Kit Shipping Weight
EK-30	EA-30	5 lbs. (2.27 kg)
EK-31	EA-31	6 lbs. (2.72 kg)
EK-32	EA-32	10 lbs. (4.54 kg)
EK-33	EA-33	14 lbs. (6.36 kg)
EK-35	EA-35	18 lbs. (8.17 kg)

QUESTION: 042 (1.00)

Plant conditions:

- A loss of off-site power has occurred; simultaneously power to 120V vital instrument panel 3P07 was lost.
- Both Unit 3 EDGs have started.

Which ONE of the following actions must the operator perform under the above conditions?

- a. Control 3B steam generator water level by manual control of main feed bypass regulating valve.
- b. Manually perform bus stripping on 4KV bus 3B only.
- c. Manually close failed open Train 1 AFW flow control valves only.
- d. Manually sequence ESF loads onto EDG 3A.

QUESTION: 043 (1.00)

(RC '99)

Which ONE of the following conditions will sound an audible alarm on the main fire panel in the control room?

- a. The battery power supply to the panel fails.
- b. Any deluge system is removed from service.
- c. Any red fire alarm lamp or yellow trouble lamp lights.
- d. The RCO sounds the Fire Horn.

ANSWER: 043 (1.00) (20 57)

c.
REFERENCE:
SD-153, Fire Protection, Alternate Safe Shutdown and Safe Shutdown
Systems, page 39.
E.O. 6 of LP 6902143
Item used on Turkey Point 1992/04/20 SRO exam.
000067A106 [3.5/3.7]

000067A106 ..(KA's)

ANSWER: 044 (1.00)

b.
REFERENCE:
0-ONOP-105, Control Room Evacuation, pages 8 and 48.
E.O. of LP-6902252
000068K202 [3.7/3.9]
000068G010 [4.1/4.2]

000068G010 000068K202 ..(KA's)

ANSWER: 045 (1.00)

u.
REFERENCE:
3-ONOP-053, Loss of Containment Integrity, page 4
E.O. 3 of LP-6902126
Item used on Turkey Point 1991/09/30 SRO exam.
000069A201 [3.7/4.3]

000069A201 ..(KA's)

ANSWER: 046 (1.00)

c.
REFERENCE:
3-BD-EOP-FR-C.1, Response to Inadequate Core Cooling Basis
Document,
page 33.
E.O. 4 of LP-6902347
000074K311 [4.0/4.4]

000074K311 ..(KA's)

SRO QUESTION 44 (70)

Which one of the following IMMEDIATE actions is required to be performed by the Unit 3 Reactor Control Operator in the event of a fire burning out of control on the Control Room roof?

ANSWER:

B. - Declare the control room uninhabitable, trip the reactor and evacuate the Control Room.

REFERENCE:

ONOP-105, Control Room Evacuation, pages 8 and 48.
E.O. of LP 6902252

COMMENT:

Immediate actions of 0-ONOP-016.10, Pre-Fire Plan Guidelines and Safe Shutdown Manual Actions, require dispatch of the Fire Brigade to the fire via the plant page system. This would be done prior to the NPS making the decision to evacuate the Control Room (see attached copy of 0-ONOP-016.10).

RECOMMENDATION:

Accept answer D as an additional correct answer.

D. - Dispatch the Fire Brigade to the Control Room roof via the Plant PA system.

Procedure No.: 0-ONOP-016.10	Procedure Title: Pre - Fire Plan Guidelines and Safe Shutdown Manual Actions	Page: 4 Approval Date: 12/28/92
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1.0 PURPOSE

- 1.1 This procedure contains three (3) attachments; for each fire zone. The procedure consists of Pre-Fire Plans, Operations Safe Shutdown Manual Actions and Manual Actions to Mitigate the Consequences of Fire Damper Closure.
- 1.2 The Pre-Fire Plans provide guidelines for attacking and combating the fire. They also provide information of equipment availability, ventilation, constructions material and adjacent fire zones.
- 1.3 The Operations Safe Shutdown Manual Actions detail the equipment that it is necessary to operate outside the normal operation methods to maintain or place the plant in a safe condition.
- 1.4 The Manual Actions to Mitigate the Consequences of Fire Damper Closure contains information as to HVAC systems and dampers affected by fire areas and the actions to be performed by maintenance post extinguishment to provide ventilation for specific fire zones.

2.0 SYMPTOMS

- 2.1 None

3.0 AUTOMATIC ACTIONS

- 3.1 None

4.0 IMMEDIATE ACTIONS

- 4.1 Perform the following:

- 4.1.1 Cross connect page and make the following announcement:

"Attention all personnel. There is a reported class (if known) _____ fire/explosion in Unit (3 or 4) _____ (location) _____. All personnel in the fire/explosion location withdraw to a safe area. All Fire Brigade members report to (location of fire/explosion) _____."

- 4.1.2 Sound fire alarm

- 4.1.3 Follow alarm with page announcement:

"Attention all personnel. There is a reported class (if known) _____ fire/explosion in Unit (3 or 4) _____ (location) _____. All personnel in the fire/explosion location withdraw to a safe area. All Fire Brigade members report to (location of fire/explosion) _____."

- 4.2 IF required. THEN designate an assembly area for personnel evacuating the affected area.

QUESTION: 044 (1.00) (R0 70)

Which ONE of the following IMMEDIATE actions is required to be performed by the Unit 3 Reactor Control Operator in the event of a fire burning out of control on the Control Room roof?

- a. Trip the reactor and enter E-0, Reactor Trip and Safety Injection.
- b. Declare the control room uninhabitable, trip the reactor and evacuate the Control Room.
- c. Evacuate the Control Room, then open the reactor trip breakers locally and enter E-0.
- d. Dispatch the Fire Brigade to the Control Room roof via the Plant PA system.

QUESTION: 045 (1.00)

The plant is in Mode 1. Which ONE of the following indicates a loss of containment integrity?

- a. Containment pressure is 50 psig.
- b. Containment pressure is 27 psig and CV-204, letdown isolation valve, stuck open.
- c. Containment pressure is 23 psig and containment spray is not operable.
- d. S/G 3B has both a tube rupture and a stuck open RCS safety valve.

Procedure No.: 0-ONOP-016.10	Procedure Title: Pre - Fire Plan Guidelines and Safe Shutdown Manual Actions	Page: 5 Approval Date: 12/28/92
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5.0 **SUBSEQUENT ACTIONS**

5.1 Identify the fire zone as identified in Attachment 1 of this procedure.

NOTE

Emergency flashlights and radios are available to aid in combating the fire or performing manual actions.

5.2 Establish communication between Fire Brigade Leader and the Control Room.

NOTES

- *A single fire in a given fire zone may require both units to be shutdown or placed in safe condition.*
- *Fires or explosions inside the RCA involving Radiological Hazards should be monitored accordingly. Alarming (audible and/or visual) dosimetry should be used on Fire Brigade Members for monitoring direct Radiological Exposure. The air sampler, located in the Fire Locker in the Aux Bldg Hallway, should be used, as needed; to monitor airborne activity.*
- *The Fire Brigade Leader shall notify the NPS/ Emergency Coordinator when vital equipment is in jeopardy or the fire cannot be readily extinguished.*
- *Erroneous indication; multiple spurious equipment malfunctions or failures; loss of off-site power coincident with fire or notification from Fire Brigade Leader are the determinates for initiating safe shutdown manual actions.*
- *Qualified Operations Department Fire Brigade Members should relieve Health Physics Department Fire Brigade Members as available, to ensure adequate staffing of Radiation Protection Men (RPM).*

5.3 The NPS/Emergency Coordinator shall:

- 5.3.1 **IF** determined necessary, **THEN** initiate safe shutdown manual actions.
- 5.3.2 **IF** determined necessary notify **THEN** Health Physics **AND** request radiation monitoring support. if **Fire/Explosion** is in the Radiation Control Area (RCA).
- 5.3.3 Determine if the fire/explosion meets emergency classification criteria by referring to EAL table in EPIP-20101. Duties of Emergency Coordinator.

ANSWER: 043 (1.00)

REFERENCE:

-153, Fire Protection, Alternate Safe Shutdown and Safe Shutdown
stems, page 39.

O. 6 of LP 6902143

in used on Turkey Point 1992/04/20 SRO exam.

0067A106 [3.5/3.7]

000067A106 ..(KA's)

ANSWER: 044 (1.00) (RC 70)

REFERENCE:

ONOP-105, Control Room Evacuation, pages 8 and 48.

O. of LP-6902252

0068K202 [3.7/3.9]

0068G010 [4.1/4.2]

000068G010 000068K202 ..(KA's)

ANSWER: 045 (1.00)

REFERENCE:

ONOP-053, Loss of Containment Integrity, page 4

O. 3 of LP-6902126

in used on Turkey Point 1991/09/30 SRO exam.

0069A201 [3.7/4.3]

000069A201 ..(KA's)

ANSWER: 046 (1.00)

REFERENCE:

BD-EOP-FR-C.1, Response to Inadequate Core Cooling Basis
document,

page 33.

O. 4 of LP-6902347

0074K311 [4.0/4.4]

000074K311 ..(KA's)

5.9 Special Instruction Book

5.9.1 The Special Instruction Book is maintained to improve communications between the plant management staff and shift personnel in the Control Room.

CAUTION

Special Instructions shall not be used to circumvent established procedural requirements, nor shall Special Instructions be construed to supersede procedural requirements.

5.9.2 The Special Instruction Book contains instructions that may be issued as needed to identify temporary changes in plant conditions and provides guidance for handling situations that have short-term applicability.

5.9.3 The NPS is responsible for informing members of their crew as appropriate.

5.9.4 Special Instructions shall be approved by the Operations Manager.

5.9.5 The Operations Supervisor or designee shall review the Special Instruction Book at least once per quarter to verify the validity and currency of all active instructions.

5.9.6 Copies of each new instruction placed in the Special Instruction Book shall be forwarded to the QC Supervisor and to the Plant General Manager.

5.10 Night Orders Book

5.10.1 The Night Orders Book is maintained to provide a communications channel between plant management and the operating shifts where face to face communication is not practical.

CAUTION

Night Orders shall not be used to convey management information that should have been delineated in other plant documents such as Quality Instructions, procedures, or instructions.

5.10.2 The Night Orders Book contains information about upcoming events, notification of policy changes, evolutions to be performed on the backshifts and problems encountered during normal operations.

SRO QUESTION 68 (94)

Which ONE of the following describes an entry which would be made in the Night Order Book?

ANSWER:

D. - Problems encountered during normal operations.

REFERENCE:

0-ADM-200 page 51.

COMMENT:

0-ADM-200, Conduct of Operations, Step 5.10.3, states, " Entries in the Night Order Book shall be made when necessary by the Operations Supervisor, NPS, ANPS, or NWE, to provide short term information to the shift crews", (see attached).

RECOMMENDATION:

Accept answer B as an additional correct answer.

B. - Guidance for handling situations that have short term applicability.

Procedure No.: 0-ADM-200	Procedure Title: Conduct of Operations	Page: 52 Approval Date: 2/8/96
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5.10.3 Entries in the Night Orders Book shall be made when necessary by the Operations Supervisor, NPS, ANPS, or NWE, to provide short term information to the shift crews.

5.11 Daily Logs - Operator Logsheets are utilized by operating personnel to provide a method for recording system and equipment operating data and characteristics during routine performance of their assigned duties. Rounds and logsheets shall be performed in accordance with the following:

5.11.1 0-ADM-203, Shift Operating Practices

5.11.2 3/4-OSP-201.1, RCO Daily Logs

5.11.3 0-OSP-201.2, SNPO Daily Logs

5.11.4 3/4-OSP-201.3, NPO Daily Logs

5.11.5 0-OSP-201.4, ANPO Daily Logs

5.12 Operations Testing - The Operations Manager is responsible for the overall control and coordination of all surveillance testing.

5.12.1 Operations Surveillance Tests

1. The Operations Surveillance Testing Program shall be conducted in accordance with the guidelines of 0-OSP-200.1, Schedule of Plant Checks and Surveillances.
2. The Operations Department is responsible for the performance, documentation, and initial review of Operations Department surveillance tests.
3. The NPS's approval shall be obtained prior to the commencement of any surveillance testing. **IF** a step is not completed for any reason, **THEN** the reason must be recorded on the procedure. When a test is performed and does not meet the specified acceptance criteria, the NPS, ANPS, or NWE shall be notified and corrective action shall be initiated.
4. The NPS or his/her SRO designee shall review all Operations Department surveillance tests performed on his/her shift for completeness and accuracy and shall so indicate by signing and dating the procedure in the appropriate space. In addition, he/she shall ensure that completion of the test(s) is documented in accordance with the appropriate test scheduling procedures.

QUESTION: 067 (1.00)

Which ONE of the following describes a restriction on overtime?

- a. If a licensed operator is required to work in excess of eight hours continuously then his duties at the control boards should be restricted to 6 hours or less.
- b. An individual should not be permitted to work more than 16 hours straight including shift turnover time.
- c. There should be at least eight hours break between all work periods not including shift turnover time.
- d. An individual should work no more than seventy-two hours in any seven day period.

QUESTION: 068 (1.00) (RO 94)

Which ONE of the following describes an entry which would be made in the Night Order Book?

- a. Notification of a change in procedures for preparing clearances for air systems.
- b. Guidance for handling situations that have short-term applicability.
- c. Safety related maintenance in progress.
- d. Problems encountered during normal operations.

ANSWER: 065 (1.00)

d.

REFERENCE:

D-ADM-103 pg 8

194001A112 [3.1/4.1]

194001A112 ..(KA's)

ANSWER: 066 (1.00)

d.

REFERENCE:

D-ADM-212, pg 21

194001A102 [4.1/3.9]

194001A102 ..(KA's)

ANSWER: 067 (1.00)

d.

REFERENCE:

D-ADM-200, pg 36

194001A103 [2.5/3.4]

194001A103 ..(KA's)

ANSWER: 068 (1.00) (Rc 94)

d.

REFERENCE:

D-ADM-200, pg 51

194001A103 [2.5/3.4]

194001A103 ..(KA's)

ANSWER: 069 (1.00)

d.

REFERENCE:

D-ADM-204, pg7

194001A106 [3.4/3.4]

194001A106 ..(KA's)

SRO QUESTION 95

Plant Conditions, Unit 3:

- A Loss of Coolant Accident has occurred.
- The crew is performing 3-EOP-E-1, "Loss of Reactor or Secondary Coolant."
- An ORANGE Path condition is noted on the computer for Containment Integrity
- The Nuclear Plant Supervisor directs transition to 3-EOP-FR-Z.1, "Response to High Containment Pressure."
- As the procedure reader is reviewing the Symptoms or Entry conditions of 3-EOP-FR-Z.1, the ORANGE path indication clears on Containment Integrity and turns YELLOW.

Which one of the following describes the action to be taken?

ANSWER:

B. - Return to 3-EOP-E-1 without initiating 3-EOP-FR-Z.1

REFERENCE:

0-ADM-211, page 23.

COMMENT:

The statement above, "As the procedure reader is reviewing the symptoms or entry conditions...", implies entry into the FRP has already occurred (see attached copy of ADM-211, section 5.1.1) Although entry into FR-Z.1 based on computer indication may have been inappropriate, entry was made. Once entered, the FRP must be completed unless higher priority terminus occurs. (section 5.10.6, ADM-211).

RECOMMENDATION:

Delete the question as there is NO correct answer.

5.0

PROCEDURE

Q... = 95

5.1 Procedure Entry

5.1.1 Entry into an individual procedure begins by locating the desired procedure.

1. If the operator has been directed to a specific procedure, it can be located by checking the procedures cover page or the title block at the top of each procedure page.
2. If the applicability of a given procedure is not known or is in question, the Purpose and Symptoms / Entry Conditions sections shall be reviewed.

5.1.2 Entry into the EOP network shall be limited to the following conditions:

1. The EOP network is entered at E-0, Reactor Trip Or Safety Injection, Step 1, if all of the following conditions exist:
 - a. Safety Injection System has not been locked out per Technical Specifications, and
 - b. A reactor trip or safety injection has occurred or is required.
2. The operator shall go to ECA-0.0, Loss of all AC Power, Step 1 if all of the following conditions exist:
 - a. The affected unit is in Mode 1, 2, 3, or 4, and
 - b. Both the A and B 4KV buses are deenergized.
3. The requirement to enter ECA-0.0, Loss of all AC Power, is applicable even when the operator is already in the EOP network.

5.1.3 If the operator has not been directed to start at a specific point in the procedure, performance of the procedure shall begin at the first high-level step.

5.10.6 Once an FRP is entered due to a RED or ORANGE PATH condition, that FRP shall be performed to completion unless a transition to a higher priority FRP is required. It is expected that the actions in the FRP will clear the RED or ORANGE PATH condition before all the operator actions are complete. However, the FRP shall be performed to the point where the operator is directed to transition to a specific procedure or to return to the procedure and step in effect prior to implementation of the FRP.

EXAMPLE

While performing ECA-2.1, Uncontrolled Depressurization Of All Steam Generators, a RED PATH on subcriticality is diagnosed. After transitioning to FR-S.1, Response To Nuclear Power Generation / ATWS, a RED PATH on Containment is diagnosed. The operator should complete FR-S.1, and then transition to FR-Z.1, Response To High Containment Pressure. After completing FR-Z.1 and assuming no other RED or ORANGE PATHS are discovered, the operator returns to ECA-2.1.

5.10.7 If a RED, ORANGE, or YELLOW PATH condition does not clear following completion of the associated FRP, the FRP need not be performed again unless the RED, ORANGE, or YELLOW PATH condition clears and then returns.

EXAMPLE

After completing FR-Z.1, Response To High Containment Pressure, due to an ORANGE PATH condition, the operator notes that containment pressure is still above the ORANGE PATH high pressure setpoint. FR-Z.1 need not be performed again unless one of the following occurs:

- 1. Containment pressure exceeds the RED PATH setpoint.*
- 2. Containment pressure decreases below the ORANGE PATH setpoint and then increases above the ORANGE PATH setpoint.*

5.10.8 If any RED or ORANGE PATHS exist, or plant conditions are changing rapidly, STATUS TREES shall be monitored continuously.

5.10.9 If only YELLOW or GREEN PATHS exist, and plant conditions are not changing rapidly, Status Trees shall be monitored every 10 to 20 minutes.

QUESTION: 095 (1.00)

Plant conditions, Unit 3:

- A Loss of Coolant Accident has occurred.
- The crew is performing 3-EOP-E-1, "Loss of Reactor or Secondary Coolant."
- An ORANGE path condition is noted on the computer for Containment Integrity
- The Nuclear Plant Supervisor directs transition to 3-EOP-FR-Z.1, "Response to High Containment Pressure."
- As the procedure reader is reviewing the Symptoms or Entry Conditions" of 3-EOP-FR-Z.1, the ORANGE path indication clears on Containment Integrity and turns YELLOW.

Which ONE of the following describes the action to be taken?

- a. Complete 3-EOP-FR-Z.1 to ensure the ORANGE path condition does NOT recur.
- b. Return to 3-EOP-E-1 without initiating 3-EOP-FR-Z.1.
- c. Complete 3-EOP-FR-Z.1 to clear the YELLOW path on Containment Integrity.
- d. Check for any higher priority YELLOW paths and take action to clear the highest priority.

TRANSITION
TO Z.1 HAS
BEEN MADE!

ANSWER: 094 (0.00)

b.

REFERENCE:

3-ONOP-004, Loss of Off-Site Power, page 6

E.O. 1 of LP-6902255

000056G010 [3.7/3.9]

000056G010 ..(KA's)

ANSWER: 095 (1.00)

b.

REFERENCE:

O-ADM-211, pg 23

194001A102 [4.1/3.9]

194001A102 ..(KA's)

ANSWER: 096 (1.00)

b.

REFERENCE:

O-ADM-213, pg 10

94001A106 [3.4/3.4]

194001A106 ..(KA's)

ANSWER: 097 (1.00)

a.

REFERENCE:

O-ADM-205, pg 9

194001A107 [2.5/3.2]

194001A107 ..(KA's)

ANSWER: 098 (1.00)

c.

REFERENCE:

10-CFR-20 1206

194001K103 [2.8/3.4]

194001K103 ..(KA's)

NRC RESOLUTION OF FACILITY COMMENTS

SRO Examination / (RO Examination):

Question 43 (69):

NRC Resolution: Comment Accepted. Additional reference material (not available to the contract examiner during examination development) provided during post examination review indicates that answer "(a)" is also correct.

Question 44 (70):

NRC Resolution: Comment Accepted. The item was based on solely one off-normal operating procedure while the conditions set forth in the item stem are addressed by at least two off-normal procedures. Therefore, the "Immediate Actions" of both procedures seem to be applicable. One of the intended distractors inadvertently lists an immediate action of the second off-normal operating procedure. Therefore, answer "(d)" is also correct. This distractor was questioned by the chief examiner during the examination pre-review as appearing like a logical and correct action to take. However, the examination reviewers stated it was wrong since it was not an immediate action of the Control Room Evacuation procedure.

Question 68 (94):

NRC Resolution: Comment Accepted. Answer "(b)" is also a correct choice.

Question 95:

NRC Resolution: Comment partially accepted. The NRC agrees that the item stem statement, "As the procedure reader is reviewing the symptoms or entry conditions...", does imply that entry into the FRP has already occurred as defined in ADM-211, section 5.1.1. While choice "(a)" contains verbage that is superfluous to the selection specifically, "...to ensure the ORANGE path condition does NOT recur," selection "(a)" remains the most correct choice. Therefore, the answer key was changed from choice "(b)" to choice "(a)".

*Turkey Point SRO
Master 96-300*

**U. S. NUCLEAR REGULATORY COMMISSION
SITE-SPECIFIC
WRITTEN EXAMINATION**

APPLICANT INFORMATION

Name:	Region:	II
Date: June 14, 1996	Facility/Unit:	Turkey Point
License Level: SRO	Reactor Type:	PWR - Westinghouse

INSTRUCTIONS

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 percent. Examination papers will be picked up 4 hours after the examination starts.

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

MASTER

Applicant's Signature

RESULTS

Examination Value	<u>100</u> Points
Applicant's Score	_____ Points
Applicant's Grade	_____ Percent

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 describes the Control Rod Drive system Rod Control Unit (RCU)?

- a. Automatic rod speed is preset to a constant value of 68 steps per minute.
- b. The RCU generates a rod speed and direction signal in response to 3 error signals.
- c. The automatic system is programmed to respond to a "Rods In" signal only.
- d. The Individual Bank Select switch generates a speed and direction signal to the RCU.

QUESTION: 002 (1.00)

If a control rod bank has a differential reactivity worth of 12.8 PCM/inch, which ONE of the following describes the integral reactivity worth for 5 STEPS of outward rod motion?

- a. 28 PCM
- b. 33 PCM
- c. 40 PCM
- d. 64 PCM

QUESTION: 003 (1.00)

The kinetic energy of an RCP fly wheel provides which ONE of the following upon loss of electrical power to the pump?

- a. Prevents DNB in the reactor core.
- b. Limits DNBR to less than 1.3.
- c. Prevents reverse rotation of an idle RCP.
- d. Establishes natural circulation flow direction.

QUESTION: 004 (1.00)

Which ONE of the following describes the operation of the CVCS makeup control system when it is properly aligned for auto-makeup and pressurizer level is less than 17%?

FCV-114A is the Primary Water (PW) Flow Control valve.

FCV-114B is the Volume Control Tank Inlet Stop valve.

FCV-113A is the Boric Acid Flow Control valve.

FCV-113B is the Charging Pump Suction Makeup Stop valve.

- a. A PW pump auto-starts, FCV-114A and FCV-113B open to supply only primary grade water to the charging pump suction header.
- b. A boric acid pump auto-starts, FCV-114A, FCV-113A and FCV-114B open to supply blended makeup to the Volume Control Tank.
- c. Both boric acid pumps and both PW pumps auto-start, FCV-114A, FCV-113A and FCV-114B open to supply blended makeup to the Volume Control Tank.
- d. A boric acid pump auto-starts, FCV-114A, FCV-113A and FCV-113B open to supply blended makeup to the charging pump suction header.

QUESTION: 005 (1.00)

Operators are monitoring grid instability and are in the process of placing a CVCS mixed bed demineralizer with new resin into service when the RO notes the following primary system parameters:

- Reactor power is 101.2% and increasing.
- Tavg is 577 degrees F and increasing.
- Gross megawatts have increased by 2 MWe without operator action.
- Rod control is in manual.

Which ONE of the following describes the most probable cause of these plant conditions?

- a. CV-3-2011, Low Pressure Heater Bypass valve has inadvertently opened.
- b. The new mixed bed demineralizer was not sufficiently washed-in prior to placing it in service.
- c. Turbine Oil system is malfunctioning causing turbine control valves to open.
- d. Grid frequency has dropped and the turbine generator control systems are responding.

QUESTION: 006 (1.00)

Which ONE of the following Safety Injection signals will initiate a "Main Steam Isolation"?

- a. Manual Safety Injection.
- b. Low Pressurizer Pressure.
- c. High Steam Line Flow coincident with Low Steam ^{GENERATOR} Pressure. → ~~EF~~
- d. High Steam Line Differential Pressure coincident with low RCS pressure.

QUESTION: 007 (1.00)

During a plant shutdown, the low pressurizer pressure and the high steamline delta-P safety injections are blocked by the operator.

Which ONE of the following conditions will unblock the above safety injection?

- a. Tave at 560 degrees F.
- b. Steam pressure at 750 psig.
- c. RCS pressure at 2050 psig.
- d. Main steam line pressure decrease greater than 125 psi/second.

QUESTION: 008 (1.00)

Plant conditions:

- Reactor startup in progress
- Both source range channels indicate $5E+4$ cps
- Intermediate range channel N35 indicates $5E-10$ amps
- Intermediate range channel N36 indicates $5E-11$ amps

Which ONE of the following is the cause of this Intermediate Range Nuclear Instrument channel discrepancy?

- a. N35 is over-compensated
- b. N35 is under-compensated
- c. N36 is over-compensated
- d. N36 is under-compensated

QUESTION: 009 (1.00)

Plant conditions:

- A reactor trip with a loss of all AC power occurred 2 hours ago.
- Core exit thermocouples read approximately 650 degrees F and increasing.
- Steam generator pressure is stable at 815 psig.
- Steam generator steam flow is undetectable.

Which ONE of the following describes plant conditions?

- a. Loss of natural circulation flow has occurred.
- b. Natural circulation flow is increasing.
- c. The reactor core has uncovered and core damage is imminent.
- d. Reactor Coolant System sub-cooling margin is increasing.

QUESTION: 010 (1.00)

Plant conditions:

- ~~A normal containment cooler chill water coil ruptures.~~
- Followed by a design basis LOCA has occurring inside containment.
 - Several fuel assemblies have ruptured.
 - Containment pressure is 49.9 psig.
 - A normal containment cooler water coil ruptures.

(Assume all other systems function normally and operators have taken appropriate actions per the Emergency Operating Procedures.)

Which ONE of the following describes the plant response to these conditions?

- a. Containment Sump level will continue to increase due to Component Cooling Water leaking into containment via the ruptured cooler.
- b. Component Cooling Water Radiation Monitors RE-17A and RE-17B will alarm due to containment radiation release via the ruptured cooler.
- c. Cooling water leakage stops only upon receipt of the Phase "B" isolation signal.
- d. Cooling water leakage stops upon receipt of the Phase "A" isolation signal.

QUESTION: 011 (1.00)

Which ONE of the following describes the expected plant response to an over-current trip of a running condensate pump at 100% power with the 3C condensate pump out of service?

- a. The associated steam generator feed pump will trip and initiate a turbine runback.
- b. The standby steam generator feed pump will automatically start upon trip of the running condensate pump.
- c. CV-3-2011 will automatically open and will maintain adequate suction pressure to run both steam generator feed pumps.
- d. Heater drain pump discharge valves will automatically open to supply adequate suction pressure to the steam generator feed pumps.

QUESTION: 012 (1.00)

Plant conditions:

- Reactor power is 5%.
- S/G 3A level is 78%.
- S/G 3B level is 89%.
- S/G 3C level is 76%.

Which ONE of the following lists AUTOMATIC actions that will result from the above situation?

- a. Turbine trip, Reactor trip, Feed Pump trip.
- b. Feedwater isolation, Turbine trip, Feed Pump trip.
- c. Reactor trip, Feedwater isolation, Feed Pump trip.
- d. Turbine trip, Feedwater isolation, Reactor trip.

QUESTION: 013 (1.00)

Which ONE of the following describes the normal instrument air supply to the Auxiliary Feedwater flow control valves?

- a. Unit 3 Instrument Air supplies train 2 valves on Unit 3 and train 1 valves on Unit 4.
- b. Unit 3 Instrument Air supplies train 1 valves on Unit 3 and train 2 valves on Unit 4.
- c. Unit 4 Instrument Air supplies train 1 on both Units 3 and 4.
- d. Unit 3 Instrument Air supplies train 1 on both Units 3 and 4.

QUESTION: 014 (1.00)

A liquid release is in progress. Which ONE of the following is the automatic system(s) response to an alarm on R-18, Waste Disposal System Liquid Effluent Monitor?

- a. Valves SV-1414, SV-1413 (liquid discharge to the seal wells) and RCV-018 (liquid release isolation valve) will close.
- b. Valves SV-1414, SV-1413 (liquid discharge to the seal wells) will close.
- c. Waste Monitor Tank Pumps will trip terminating the (radioactive waste) discharge.
- d. Valve RCV-018 (liquid release isolation valve) will close.

QUESTION: 015 (1.00)

Which ONE of the following conditions requires immediate action to suspend all additions to the in-service waste gas decay tank?

- a. 65,000 curies of noble gases.
- b. 6% hydrogen gas and 1% oxygen.
- c. 65,000 curies of Xe-133 gas.
- d. 5% hydrogen gas and 5% oxygen.

QUESTION: 016 (1.00)

Following an area radiation monitor alarm in the spent fuel pit, which ONE of the following is the required IMMEDIATE action per 0-ONOP-066, High Area Radiation Monitoring System Alarm?

- a. Evaluate process monitors and other ARMs for the affected area.
- b. Confirm validity of alarm and verify other area rad monitors are not indicating an increase in radiation levels.
- c. Announce alarm on the plant page system and notify personnel to clear the affected area.
- d. Evacuate the Auxiliary Building and notify Health Physics to survey the area to determine the source.

QUESTION: 017 (1.00)

Which ONE of the following describes the RHR Pump Alternate Discharge paths on Turkey Point Units 3 and 4?

- a. Loop A (Unit 4 only), Loop B (Both Units), Loop C (Unit 3 only).
- b. Loop A (Unit 3 only), Loop B (Both Units), Loop C (Unit 4 only).
- c. Loop A (Both Units), Loop B (Unit 4 only), Loop C (Unit 3 only).
- d. Loop A (Unit 4 only), Loop B (Unit 3 only), Loop C (Both Units).

QUESTION: 018 (1.00)

Plant conditions:

- Steady state operation at 100% power.
- Pressurizer spray valves PCV-455A and B have just automatically opened.
- The Pressurizer Pressure Controller PC-444A controlling setpoint is then inadvertently increased to 2325 psig.
- Assume a step change in the setpoint occurs and pressurizer pressure control remains in automatic.

Which ONE of the following will be the IMMEDIATE automatic responses of the system ?

- a. Power operated relief valves PCV-455C and PCV-456 open to 50%.
- b. Spray valves PCV-455A and B remain open and pressurizer heaters energize.
- c. Spray valves PCV-455A and B close and pressurizer heaters energize.
- d. Power Operated Relief Valves PCV-455C and PCV-456 open and Spray valves PCV-455A and B close.

QUESTION: 019 (1.00)

Plant conditions:

- Reactor power is 99%.
- Pressurizer level is 58%.
- Letdown flow is 60 gpm (One Orifice).
- A charging line leak develops near the charging line containment penetration (outside containment) that diverts ALL charging flow from the line.
- Normal seal injection is maintained.
- Assume NO operator action is taken.

Which ONE of the following statements describes the FINAL pressurizer response?

- a. Pressurizer level decreases to 14.4%, letdown isolates and pressurizer level increases leading to a high level trip at 92%.
- b. Pressurizer pressure increases when the pressurizer backup heaters auto start due to a level deviation, leading to a high pressure trip at 2385 psig.
- c. Pressurizer level decreases, then stabilizes following a reduction of letdown flow due to steam flashing in the regenerative heat exchanger.
- d. Pressurizer level decreases to 14.4%, letdown isolates and pressurizer level continues to decrease leading to a low-low level alarm at 6%.

QUESTION: 020 (1.00)

Unit 3 has tripped and SI has actuated as a result of a LOCA inside containment. The plant safety systems have responded as designed except the 3A HHSI pump exhibits abnormally low amps.

Operators are performing step 17 of EOP-E-0, Reactor Trip or Safety Injection, attempting to verify two Unit 3 HHSI pumps are running.

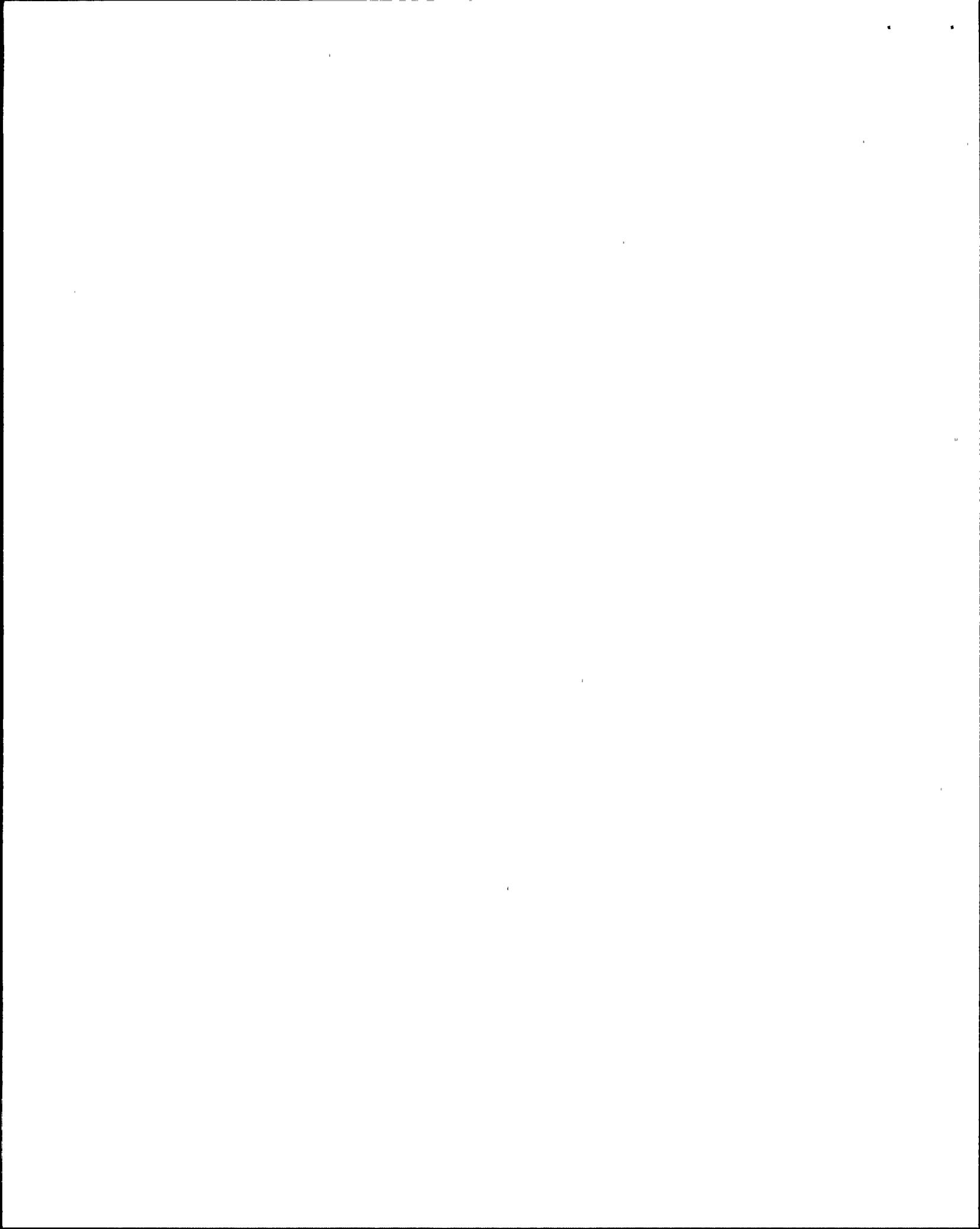
Which ONE of the following describes the correct operator response required by procedure?

- a. Stop the 3A HHSI pump and continue with the procedure. Unit 4 HHSI pumps will be shutdown subsequently and adequate flow will be delivered by the 3B HHSI pump.
- b. Continue to run the 3A HHSI pump in spite of the apparent sheared shaft to comply with step 17 of E-0.
- c. Stop the 3A HHSI pump and realign Unit 4 HHSI pumps to Unit 3 RWST. Run one Unit 3 HHSI pump and one Unit 4 HHSI pump.
- d. Continue to run the 3A HHSI pump. Maintain HHSI pump alignment in its current configuration to ensure maximum SI flow to the Unit 3 reactor.

QUESTION: 021 (1.00)

Which ONE of the following reactor trips are automatically blocked when power drops below 10%?

- a. High pressurizer pressure (2/3 channels).
- b. Low pressurizer water level (2/3 channels).
- c. Over-temperature delta-T (2/3 loops).
- d. Low reactor coolant flow (2/3 loops).



QUESTION: 022 (1.00)

Which ONE (1) of the following describes the effect on the RCS loop flow instruments of a rupture of a High Pressure loop flow transmitter tap?

- a. Flow indication fails low on all three channels.
- b. Flow indication fails low on only one channel.
- c. Flow indication fails high on all three channels.
- d. Flow indication fails high on only one channel.

QUESTION: 023 (1.00)

Which ONE of the following describes the complete actions a safety injection signal followed by a containment isolation due to a small break LOCA will have on the containment systems?

- a. Close all containment phase B isolation valves, stop containment purge fans, and start the A, B, and C emergency containment coolers (ECCs).
- b. Close all containment phase A isolation valves, stop containment purge fans, and start the A, B, and C ECCs.
- c. Close all containment phase B isolation valves, stop containment purge fans, and stop the A, B, and C ECCs.
- d. Close all containment phase A isolation valves, stop containment purge fans, and stop the A, B, and C ECCs.

QUESTION: 024 (1.00)

Which ONE of the following describes the Spent Fuel Pool Cooling (SFPC) system basic operation and connections to the Spent Fuel Pool (SFP)?

The SFPC pumps normally take a suction on the:

- a. "High" line near the top of the SFP and discharge through a line 1 foot below the top with a 1/2 inch siphon break hole 6 inches below the water level.
- b. "Low" line near the bottom of the SFP and discharge through a line 6 inches below the top with a 1/2 inch siphon break hole 1 foot below the water level.
- c. "High" line 1 foot below the top of the SFP and discharge through a line at the bottom of the SFP with a 1/2 inch siphon break hole 6 inches below the water level.
- d. "Low" line located with a 1/2 inch siphon break hole 1 foot below the water level of the SFP and discharge through a line 1 foot below the top.

QUESTION: 025 (1.00)

Which ONE of the following describes the Safety Design Bases for Steam Generator water inventory during plant operations?

Water inventory is based on:

- a. Supplying sufficient pounds-mass per hour steam production during full power operations.
- b. Limiting the amount of moisture carryover and rate of loading/unloading the turbine generator.
- c. Limiting containment design pressure and RCS cooldown during a steamline break inside containment.
- d. Minimizing pressure differential between the primary (RCS) and secondary (S/G) systems.

QUESTION: 026 (1.00)

Plant conditions:

- Mode 3
- RCS pressure is 2235 psig
- Tave is 545 degrees F, being maintained by the steam dump to condenser operating in the pressure mode.
- Atmospheric Steam Dump Valve control is in automatic at its normal setting.
- All three RCP's are running.

If a complete loss of Condenser Vacuum occurs with NO operator actions, RCS Tave will stabilize at which ONE of the following temperatures?

- a. 545 degrees F.
- b. 547 degrees F.
- c. 549 degrees F.
- d. 554 degrees F.

QUESTION: 027 (1.00)

With the plant operating normally at 88% thermal power and all control systems in automatic the feeder breaker to A SGFP trips on overload.

Which ONE of the following describes the plant response to this casualty?

- a. Turbine runback will reduce power, S/G levels restored in automatic.
- b. Turbine runback will reduce power, idle SGFP and standby condensate pump will auto-start, S/G levels will restore in automatic.
- c. S/G levels will decrease until operators reduce power to within the capacity of one SGFP.
- d. S/G levels will be maintained in automatic after idle SGFP auto-starts.

QUESTION: 028 (1.00)

Plant conditions:

- Unit 4 reactor has tripped and safety injection has actuated.
- Off-site power was lost and the 4A and 4B 4KV buses are energized from their respective EDG's.
- SI has been successfully reset from the VPB.

The reactor operator actuates the control room normal stop switch to stop the 4A EDG (Emergency Diesel Generator).

Which ONE of the following describes the response of the 4A EDG?

- a. The EDG continues to run because the EDG output breaker is closed.
- b. The EDG output breaker trips and the EDG stops.
- c. The EDG continues to run until the bus stripping relays are energized.
- d. The EDG continues to run until the bus stripping blocking relays are de-energized.

QUESTION: 029 (1.00)

As the on-coming Unit 3 RCO, you have been briefed during shift turnover that a containment purge is in progress.

During your board walk-down you note the R11 and R12 bypass switches on the VPB (HS-3-R-11 and HS-3-R-12) are in the "BYPASS" position.

Which ONE of the following describes the actions you as the Unit 3 RCO are required to take?

- a. Review 0-OP-053, Containment Purge System, to verify the switches are properly positioned for the containment purge.
- b. Stop the purge and report the action to the NPS because R-11 and R-12 trip function has been defeated with a purge in progress.
- c. Check R11 and R12, if either is in alarm stop the purge per the immediate actions of 3-ONOP-067, Radioactive Effluent Release.
- d. Return the bypass switches to "NORMAL" and verify the switches are properly positioned for the containment purge per 3-OP-67, Process Radiation Monitoring System.

QUESTION: 030 (1.00)

Which ONE of the following describes the response (if any) of the Instrument Air System to a Safety Injection signal?

- a. The Instrument Air to containment isolation valve (CV-2803) closes.
- b. Electric air compressors 3CM and 4CM stop, diesel air compressors 3DM and 4DM start.
- c. An SI signal has no direct effect on the system.
- d. Instrument Air is isolated to all non-essential air-operated equipment.

QUESTION: 031 (1.00)

Plant conditions:

- The RCS is being cooled down from Hot Standby to Cold Shutdown.
- The RCS is on RHR cooling.
- Cooldown at the maximum rate is desired.

During a maximum rate cooldown of the RCS, which ONE of the following is the most limiting?

- a. RHR return temperature.
- b. RHR supply temperature.
- c. CCW supply temperature.
- d. CCW return temperature.

QUESTION: 032 (1.00)

Which ONE of the following is the design basis for the combined capacity of the PRT rupture disks?

- a. Both PORVS and one Pressurizer Safety Valve lifting simultaneously.
- b. All three Pressurizer Safety Valves lifting simultaneously.
- c. Both PORVS lifting simultaneously.
- d. Both PORVs and all three Safety Valves lifting simultaneously.

QUESTION: 033 (1.00)

Which ONE of the following conditions will cause the actuation of the steam dump to condenser system? ASSUME the steam dumps are in Tavg mode unless otherwise indicated.

- a. Failure of impulse pressure PT-447 LOW with a coincident Tavg-Tref error signal of 8 deg F.
- b. Failure of BOTH impulse pressure PT-446 and PT-447 HIGH, coincident with a hot leg RTD failed HIGH.
- c. Failure of impulse pressure PT-447 LOW with the steam dump mode selector switch in "manual".
- d. Failure of impulse pressure PT-446 low coincident with a hot leg RTD failed HIGH.

QUESTION: 034 (1.00)

Which ONE of the following provides a turbine trip input to the reactor protection system (RPS) to produce an automatic reactor trip?

- a. 1/2 turbine stop valves closed.
- b. 3/3 turbine control valves closed.
- c. 2/3 turbine auto stop oil pressure switches < 45 psig.
- d. Main generator breaker lockout.

QUESTION: 035 (1.00)

While recovering a dropped rod, if Rod Position Indication (RPI) is lost on the dropped rod, which ONE of the following actions must be performed?

- a. Trip the turbine and reactor.
- b. Determine the rod position by performing an incore flux trace.
- c. Dilute/Borate to restore Tavg.
- d. Continue to move the misaligned RCC until the group step counter indicates it is aligned with its group.

QUESTION: 036 (1.00)

Which ONE of the following is the maximum allowed cooldown rate of the lower pump bearing when restoring RCP seal water injection flow or reducing RCP seal water injection temperature?

- a. 0.5 degrees F per minute
- b. 1.0 degrees F per minute
- c. 2.5 degrees F per minute
- d. 5.0 degrees F per minute

QUESTION: 037 (1.00)

Plant conditions:

- A reactor trip has occurred due to a loss of off-site power.
- "3A" and "3B" emergency diesel generators are running and loaded.
- 3 Control bank rods are stuck at 224 steps.
- Both "3A" and "3B" charging pumps are running.

Which ONE of the following is the required operator action(s) to ensure adequate shutdown margin for these conditions?

- a. Place the makeup control switch to the AUTO-after-start position and start a boric acid pump.
- b. Place the makeup control switch to the MANUAL position and start a boric acid pump.
- c. Place the makeup control switch to the STOP position and start a boric acid pump and open emergency borate valve.
- d. Place the makeup control switch to the BORATE position and start a boric acid pump.

QUESTION: 038 (1.00)

Plant conditions:

- RCP MOTOR BEARING COOLING WATER LOW FLOW alarm annunciation.
- CCW SURGE TANK HI/LO LEVEL alarm annunciation.
- CCW flow indication FI-3-626 RCP thermal barrier CCW return indicates normal flow rate.
- RCP "A" CCW flow indication, FI-3-628, indicates abnormally high flow.
- FI-3-677, RCP motor bearing CCW common return indicates lower than normal flow rates.

Which ONE of the following describes the most likely cause for these indications?

A copy of P&ID 5613-M-3030, Sheet 5 is provided for reference.

- a. A CCW leak between the containment supply penetration and the upstream side of the RCPs.
- b. A CCW leak downstream of the RCP bearing oil coolers but upstream of the low flow alarm detector.
- c. An RCS to CCW leak downstream of the thermal barrier heat exchanger but upstream of the flow indication detector.
- d. A CCW leak just upstream of the RCP bearing oil coolers.

QUESTION: 039 (1.00)

Plant conditions:

- Operators have entered 3-EOP-ECA-2.1, Uncontrolled Depressurization of All Steam Generators.
- Cooldown rate is 125 degrees/hour.
- S/G levels range from 1% to 3% NR level.

Which ONE of the following is the MINIMUM allowable AFW flow to the Steam Generators in this condition?

- a. 25 gpm to each S/G.
- b. 75 gpm to each S/G.
- c. 300 gpm total flow.
- d. 390 gpm total flow.

QUESTION: 040 (1.00)

Plant conditions:

- Unit 3 is at 35% power increasing to 100% power in accordance with 3-GOP-301, Hot Standby to Power Operation.
- 3-ONOP-014, "Main Condenser Loss of Vacuum" was entered due to Condenser vacuum indication DECREASING.
- The immediate actions of ONOP-014, Main Condenser Loss of Vacuum are complete.
- Condenser vacuum is currently stable at 25 inches of Hg.
- Exhaust Hood Temperature is 228 degrees F and decreasing slowly.

Which ONE of the following actions is applicable per plant procedures for these conditions?

- a. Trip the turbine; trip the reactor; enter 3-EOP-E-0, Reactor Trip or Safety Injection.
- b. Immediately reduce turbine load; enter 3-ONOP-100, Fast Load Reduction.
- c. Stop the power increase and reduce power per 3-GOP-103, Power Operations to Hot Standby.
- d. Stabilize the plant and continue with necessary actions to recover condenser vacuum.

QUESTION: 041 (1.00)

Following a loss of all AC power operators are required to place certain ESF equipment control switches in Pull-to-Lock to defeat automatic start features.

The defeat of the automatic start of ESF equipment is designed to PREVENT which ONE of the following?

- a. An uncontrolled cooldown of the RCS and possible reactor restart.
- b. An uncontrolled depressurization of the RCS.
- c. The unnecessary use of water that may be needed for long term cooldown.
- d. An uncontrolled start of equipment and potential overload of 4KV power supply.

QUESTION: 042 (1.00)

Plant conditions:

- A loss of off-site power has occurred; simultaneously power to 120V vital instrument panel 3P07 was lost.
- Both Unit 3 EDGs have started.

Which ONE of the following actions must the operator perform under the above conditions?

- a. Control 3B steam generator water level by manual control of main feed bypass regulating valve.
- b. Manually perform bus stripping on 4KV bus 3B only.
- c. Manually close failed open Train 1 AFW flow control valves only.
- d. Manually sequence ESF loads onto EDG 3A.

QUESTION: 043 (1.00)

Which ONE of the following conditions will sound an audible alarm on the main fire panel in the control room?

- a. The battery power supply to the panel fails.
- b. Any deluge system is removed from service.
- c. Any red fire alarm lamp or yellow trouble lamp lights.
- d. The RCO sounds the Fire Horn.

QUESTION: 044 (1.00)

Which ONE of the following IMMEDIATE actions is required to be performed by the Unit 3 Reactor Control Operator in the event of a fire burning out of control on the Control Room roof?

- a. Trip the reactor and enter E-0, Reactor Trip and Safety Injection.
- b. Declare the control room uninhabitable, trip the reactor and evacuate the Control Room.
- c. Evacuate the Control Room, then open the reactor trip breakers locally and enter E-0.
- d. Dispatch the Fire Brigade to the Control Room roof via the Plant PA system.

QUESTION: 045 (1.00)

The plant is in Mode 1. Which ONE of the following indicates a loss of containment integrity?

- a. Containment pressure is 50 psig.
- b. Containment pressure is 27 psig and CV-204, letdown isolation valve, stuck open.
- c. Containment pressure is 23 psig and containment spray is not operable.
- d. S/G 3B has both a tube rupture and a stuck open RCS safety valve.

QUESTION: 046 (1.00)

3-EOP-FR-C.1, Response to Inadequate Core Cooling, step 7 directs the operator to verify that Accumulator discharge valves are open.

Per step 12, all steam generators have been depressurized to 80 psig.

Step 13 directs the operator shut the Accumulator discharge valves when the RCS temperature is less than 340 degrees F.

Which ONE of the following describes the reason for shutting the Accumulator discharge valves?

- a. Accumulators are no longer required due to switch-over to cold leg recirculation.
- b. To prevent/minimize Accumulator contamination due to back-leakage.
- c. To prevent/minimize nitrogen injection into the RCS.
- d. To prevent/minimize damage to the accumulators.

QUESTION: 047 (1.00)

Plant conditions:

- A large break LOCA has occurred.
- Several CETs indicate 1300 degrees F.
- All RCPs have been started per EOP-FR-C.1, "Inadequate Core Cooling".

Which ONE of the following conditions would allow the RCPs to be stopped per EOP-FR-C.1, Response to Inadequate Core Cooling?

- a. Two (2) RCS hot leg temperatures indicate 348 deg. F.
- b. ECCS flow is re-established.
- c. RVLMS indicates greater than 0% plenum level.
- d. Core exit thermocouples indicate below 1200 deg. F. and decreasing.

QUESTION: 048 (1.00)

If RCS system specific activity exceeds the limits established by Technical Specification 3.4.8, "Specific Activity," the plant must be placed in HOT STANDBY with Tave less than 500 degrees F within 6 hours.

Which ONE of the following is the reason for cooling the RCS to less than 500 degrees F?

- a. To increase the solubility of gaseous radio-nuclides in the RCS in the event of a LOCA.
- b. To maintain doses to the public acceptably low following a steam generator tube rupture.
- c. To ensure the peak containment pressure will remain below the design pressure in the event of a large break LOCA.
- d. To reduce the effects of a crud burst in the RCS system if an overcooling condition occurs.

QUESTION: 049 (1.00)

The plant is being run back from 75% power due to the loss of a feedwater pump. Control Bank D, Rod H-12 position remains at 185 steps.

Control Bank D, Rod D-8 position is indicating 150 steps and the bank demand is 135 steps. (Assume Rod H-12 is trippable but, immovable).

Which ONE of the following actions is required?

- a. Trip the reactor and implement E-0, "Reactor Trip or Safety Injection".
- b. Place rod control in manual and stabilize the plant by boration/dilution as necessary to maintain Tave equal to Tref.
- c. Immediately initiate and continue blended boration greater than or equal to 16 gpm until shutdown margin is determined.
- d. Initiate emergency boration per 3-ONOP-046.1, Emergency Boration.

QUESTION: 050 (1.00)

Unit 3 is operating at 30% steady state reactor power. A maintenance technician mistakenly pulls the instrument power fuses to PR channel N-42. Then, realizing the error, he immediately reinserts the N-42 fuses and pulls the instrument fuses for channel N-41.

Which ONE of the following describes the reactor protection system response to these actions?

- a. Power Range neutron flux low setpoint reactor trip.
- b. Power Range over-power rod stop is activated.
- c. Power Range dropped rod circuit, turbine runback.
- d. Power Range neutron flux high setpoint reactor trip.

QUESTION: 051 (1.00)

Plant conditions, Unit 3:

- Reactor is shutdown in Mode 3.
- Pressurizer level is 63% and stable.
- RCS System pressure is 1385 psig and stable.
- PRT [Pressurizer Relief Tank] pressure is 6 psig and stable.

If one pressurizer PORV is leaking slightly, which ONE of the following temperatures will be indicated on the Relief Valve discharge RTD (TE- 463)?

- a. 247 degrees F.
- b. 263 degrees F.
- c. 275 degrees F.
- d. 282 degrees F.

QUESTION: 052 (1.00)

Plant conditions:

- The Unit has tripped from 100% power due to a loss of off-site electrical power
- The EDGs failed to reenergize their respective 4KV buses.
- Operators are at step 14 of ECA-0.0, Loss of all AC Power.
- MOV-3-626, RCP Seal Cooling Water Outlet Valve is closed as part of step 14.

Which ONE of the following is the basis for closing MOV-3-626?

- a. To prepare the plant for recovery while protecting the RCPs from seal and shaft damage.
- b. To further isolate all potential locations or sources of RCS leakage.
- c. To permit starting a charging pump in the normal mode without concern for cold seal injection flow thermally shocking the RCPs.
- d. To prevent the potential introduction of steam into the main portion of the CCW system.

QUESTION: 053 (1.00)

The operating charging pump fails resulting in a loss of normal charging while operating at 100% power.

Which ONE of the following is the required action after unsuccessful attempts to start a charging pump?

- a. Fully open CV-333, alternate charging valve.
- b. Close CV-204, letdown isolation valve.
- c. Close all orifice isolation valves.
- d. Fully open HCV-121, charging flow to Regenerative heat exchanger.

QUESTION: 054 (1.00)

Plant conditions:

- Reactor startup in progress.
- SRNI N-31 reads $2E4$ cps.
- SRNI N-32 reads $1.7E4$ cps.
- Both IRNIs read $4E-11$ amps.
- SUR is 0 dpm.
- Control Bank D is at 62 steps.

Which ONE of the following describes the required actions if N-32 channel suddenly fails to ZERO when Control Bank D is again withdrawn?

(Assume the reactor does NOT trip.)

- a. Continue the startup using N-31 as the valid channel/instrument.
- b. Stop rod withdrawal; place N-31 Level Trip in BYPASS and continue the startup using the IRNI.
- c. Suspend all reactivity additions and rod motion until the N-32 channel has been repaired.
- d. Insert all control and shutdown banks; maintain current RCS pressure and temperature.

QUESTION: 055 (1.00)

Plant conditions:

- The reactor is being shutdown.
- Reactor power is $6 \times E-6$ amps in the intermediate range NI-36.
- The RCO reports that intermediate range channel NI-35 has not decreased below $7 \times E-6$ amps and appears to be stuck.

Which ONE of the following describes the affect this will have on operator actions during the shutdown?

- a. Manually reset source range instruments when NI-36 decreases below $10 \times E-10$. _____ *1/10*
- b. If NI-35 / NI-36 mismatch becomes greater than 1 decade then manually trip the reactor.
- c. Insure source range instruments automatically energize when NI-36 decreases below $10 \times E-10$. _____ *1/10*
- d. Pull control power fuses for NI-35 detector and continue the shutdown.

QUESTION: 056 (1.00)

A steam generator TUBE LEAK will be indicated initially by which ONE of the following?

- a. Rapid decrease in pressurizer level.
- b. Reactor trip on over-temperature delta-T.
- c. Decreased main feed flow to the affected SG.
- d. Increased condenser air ejector radiation monitor readings.

QUESTION: 057 (1.00)

Plant conditions:

- "A" S/G has ruptured tube with MSIV and bypass valves shut.
- "B" S/G MSIV & bypass valves are shut.
- "C" S/G used for cooldown (steam dump to condenser).
- After cooldown and depressurization has been completed, RCS subcooling is 32 deg. F

Which ONE of the following describes ruptured S/G pressure and the reason for this pressure relationship?

- a. Pressure in "A" S/G is equal to the pressure in "C" S/G;minimizes radiological releases.
- b. Pressure in "A" S/G is greater than the pressure in "C" S/G;minimizes radiological releases.
- c. Pressure in "A" S/G is less than the pressure in "B" S/G;ensures RCS sub-cooling when primary-to-secondary leakage is terminated.
- d. Pressure in "A" S/G is less than the pressure in "C" S/G;ensures RCS sub-cooling when primary-to-secondary leakage is terminated.

QUESTION: 058 (1.00)

Plant conditions:

- Unit startup in progress at 10 percent power.
- SGFP "A" is tagged out.
- SGFP "B" trips on low suction pressure, and S/G levels are decreasing rapidly.

Which ONE of the following operator actions is required?

- a. Manually trip the reactor in anticipation of an automatic trip.
- b. Start all three AFW pumps to restore S/G levels.
- c. Start an additional condensate pump then restart SGFP "B" to restore S/G levels.
- d. Start both Standby Steam Generator Feed Pumps (SSGFP) to restoreS/G levels.

QUESTION: 059 (1.00)

Both Units 3 and 4 are operating at 100% power when a loss of Buses 3D01 and 3D01A occurs.

Which ONE of the following is the Unit 3 operators immediate action in response to this occurrence?

- a. Verify reactor trip and perform the remaining immediate action steps of E-0.
- b. Position Main Steam Isolation valve 3A, 3B and 3C control switches to close.
- c. Verify reactor trip; the Main Turbine Generator must be manually tripped.
- d. Initiate Fast Load Reduction per 3-ONOP-100.

QUESTION: 060 (1.00)

Plant conditions:

- A waste gas release is in progress per gas release permit.
- The release rate has resulted in a Plant Vent Gaseous (R-14) radiation Monitor HIGH alarm.
- RCV-014 failed to auto-close and all attempts to manually close RCV-014 have failed.
- Operators have entered 3-ONOP-067, Radioactive Effluent Release, and are at step 52.g which reads as follows: "Check airborne release - LESS THAN LIMITS OF ATTACHMENT 4".
- Attachment 4 shows two curves, one is labeled "Greater than 10 x Tech Spec Limit" and, the other is labeled "Greater than 1 x Tech Spec Limit".

Which ONE of the following explains the significance of the two curves?

- a. The curves differentiate the mitigating actions to be taken by the Health Physics Department.
- b. The curves differentiate the mitigating actions to be taken by the Chemistry Department.
- c. The curves differentiate the allowable exposure limits to members of the public or site employees.
- d. The curves differentiate the emergency event classification per EPIP 20101, Duties of the Emergency Coordinator.

QUESTION: 061 (1.00)

Which ONE of the following is the IMMEDIATE action required in response to a high radiation alarm on Area Radiation Monitor System control panel R-30, Channel R-2, U-3 Containment Operating Floor during refueling operations?

- a. Depress the "Alarm Ack" on panel R-30 and announce over the plant page system to evacuate the containment building.
- b. Identify the alarming channel R-2 on panel R-30 and, announce over the plant page system to evacuate the containment building.
- c. Identify the alarming channel R-2, Depress the "Alarm Ack" for channel R-2 only after all personnel have evacuated the containment building.
- d. Identify the alarming channel R-2 on panel R-30, confirm the validity of the alarm and then announce over the plant page system to evacuate the containment building.

QUESTION: 062 (1.00)

Plant conditions:

- The unit is operating at 100% power.
- Charging flow control valve HCV-121 fails closed.

Which ONE of the following reactor trips will occur if NO operator action is taken?

- a. Trip on low RCS pressure.
- b. Trip on high RCS pressure.
- c. Trip on over-power delta-T.
- d. Trip on high pressurizer level.

QUESTION: 063 (1.00)

Plant conditions:

- Preparations are being made for refueling operations
- The refueling cavity is filled with the transfer tube gate valve open.
- Alarm annunciators H-1/1, SFP LO LEVEL and G-9/5, CNTMT SUMP HI LEVEL are in alarm.

Which ONE of the following is the required IMMEDIATE ACTION in response to these conditions?

- a. Verify alarms by checking containment sump level recorder and spent fuel level indication.
- b. Sound the containment evacuation alarm.
- c. Initiate containment ventilation isolation.
- d. Initiate control room ventilation isolation.

QUESTION: 064 (1.00)

Which ONE of the following describes the reason for the Technical Manager performing a Quarterly Review of Temporary System Alterations (TSA)?

- a. To evaluate whether or not the TSA is still necessary.
- b. To ensure the TSA is being observed correctly.
- c. To ensure post maintenance testing has been completed for closed-out TSA's.
- d. To ensure Operations personnel are aware of its existence.

QUESTION: 065 (1.00)

Which ONE of the following describes the person directly responsible to ensure a Temporary Procedure (TP) is up-to-date prior to using it?

- a. The Assistant Nuclear Plant Supervisor.
- b. The Nuclear Watch Engineer.
- c. The Associate Nuclear Plant Engineer.
- d. The temporary procedure user.

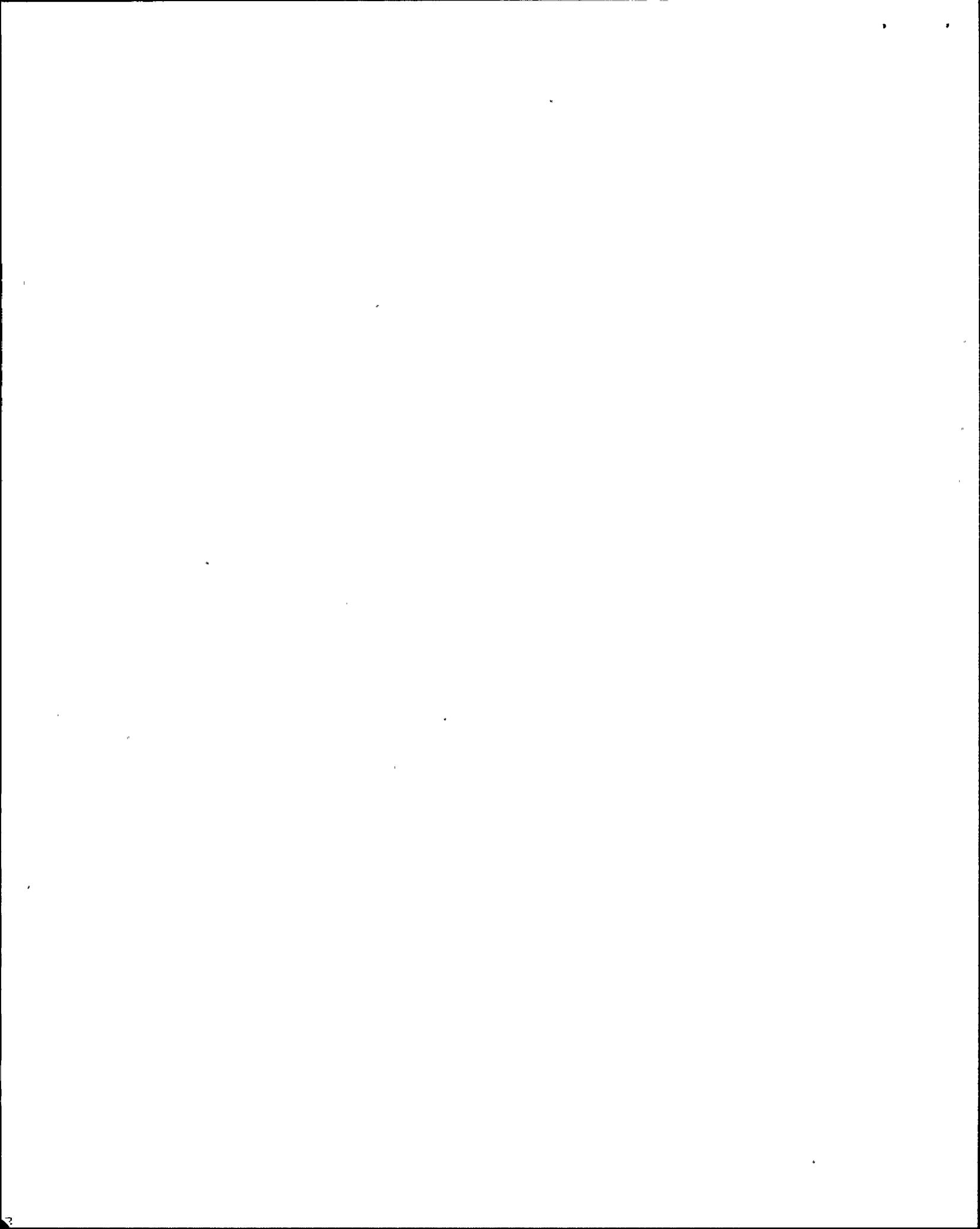
QUESTION: 066 (1.00)

Plant conditions, Unit 3:

- The unit is in Mode 1 at 70% power.
- A clearance is in progress for valve repairs.
- Two valves to be positioned are outside.
- It is raining very heavily.

Which ONE of the following describes the action to be taken to position the two valves that are outside?

- a. Position all other components on the Clearance Order first to give the weather a chance to improve.
- b. Hand copy the valve identification and their clearance positions onto a separate list to be taken and used outside.
- c. Use a radio to communicate the valve identification and position to the outside person positioning the valve.
- d. Make a photo-copy or equivalent of the Clearance Order and take the copy into the field to identify and position the valves.



QUESTION: 067 (1.00)

Which ONE of the following describes a restriction on overtime?

- a. If a licensed operator is required to work in excess of eight hours continuously then his duties at the control boards should be restricted to 6 hours or less.
- b. An individual should not be permitted to work more than 16 hours straight including shift turnover time.
- c. There should be at least eight hours break between all work periods not including shift turnover time.
- d. An individual should work no more than seventy-two hours in any seven day period.

QUESTION: 068 (1.00)

Which ONE of the following describes an entry which would be made in the Night Order Book?

- a. Notification of a change in procedures for preparing clearances for air systems.
- b. Guidance for handling situations that have short-term applicability.
- c. Safety related maintenance in progress.
- d. Problems encountered during normal operations.

QUESTION: 069 (1.00)

Plant conditions, Unit 3:

- A plant startup is in progress.
- The RCO logged the time of criticality and pertinent plant data at $10E-8$ amps
- Power was increased 10%.
- The same RCO later in the shift recognized that the boron concentration at the time of criticality was not logged in the RCO log book.

Which ONE of the following states the correct method of logging the boron concentration at the time of criticality?

- a. Enter the boron concentration at the end of the criticality entry previously made.
- b. Enter the boron concentration in the margin by the criticality entry and initial the entry.
- c. Enter "L.Ent.", record the current time, enter the time and date the boron concentration should have been recorded with the value, initial the entry.
- d. Enter "L.Ent.". record the time the boron concentration should have been recorded with the value, initial the entry.

QUESTION: 070 (1.00)

Plant conditions:

- Unit 3 is in Mode 1.
- Unit 4 has been tripped from Mode 1.
- Unit 3 has ONOP-047.1, "Loss of Charging Flow in Modes 1-4" in progress.
- Unit 4 has EOP-E-1, "Loss of Reactor or Secondary Coolant" in progress.

Which ONE of the following describes the proper response of the Third Licensed Operator to this situation?

- a. Assist the Unit 3 RCO in the performance of the event mitigating strategies.
- b. Perform field operator actions as directed by the Unit 4 RCO.
- c. Monitor the Unit 4 Critical Safety Function Status Trees under the supervision of the Nuclear Plant Supervisor.
- d. Read procedure EOP-E-1 and perform Unit 4 event mitigating strategies until relieved by the ANPS or the Nuclear Watch Engineer.

QUESTION: 071 (1.00)

Which ONE of the following lists the color of locks used on Component Cooling Water (CCW) valves that have the potential to cross connect the Unit 3 and the Unit 4 CCW systems?

- a. Orange
- b. Green
- c. Blue
- d. Tan

QUESTION: 072 (1.00)

Which ONE of the following describes a situation in which concurrent dual verification should be used?

- a. A valve lineup is being performed by a trainee under the guidance of a qualified operator.
- b. The position of a manual valve operated by a reach rod in a high radiation area is to be verified.
- c. The position of a Motor Operated Valve (MOV) is to be verified by monitoring the flow rate through the valve.
- d. A valve lineup is being performed to restore the AFW feed flow control valve neutral alignment during power operation.

QUESTION: 073 (1.00)

Which ONE of the following describes the purpose of the log entry when a Human Clearance is used?

- a. To ensure that anyone assuming Unit Duties will be aware of the Human Clearance and the associated boundaries.
- b. To ensure that the use of a Human Clearance is documented in the event of a casualty resulting from its use.
- c. To document the identity of the Human Clearance for further clearance reference.
- d. To document that the Human Clearance has been briefed on his duties and fully understands the boundaries.

QUESTION: 074 (1.00)

Which ONE of the following states the reason for using the back of the hand when checking equipment temperature?

- a. The back of the hand is more easily exposed when wearing gloves.
- b. Decontamination of skin on the back of the hand is easier than the palm.
- c. The muscular contraction in the event of an electrical shock would pull the hand away.
- d. A burn injury to the back of an employee's hand is will result in less lost work.

QUESTION: 075 (1.00)

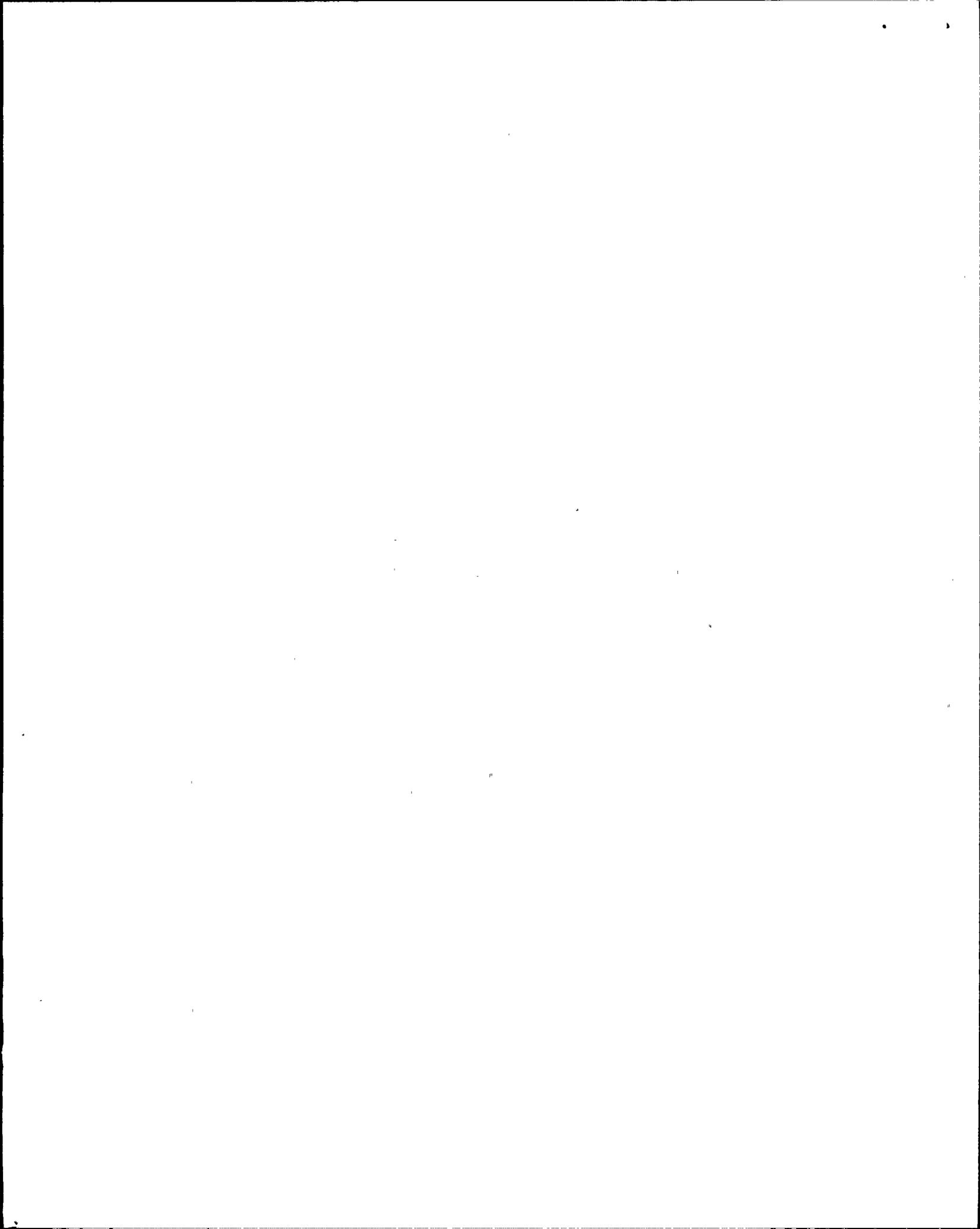
Plant conditions:

- CVCS is aligned for normal operation.
- Charging and letdown are balanced with VCT level maintained at a steady 30% level.
- A leak develops in the bottom of the VCT causing level to decrease.
- Automatic makeup starts but is unable to completely keep up with the leak and level continues to slowly decrease.

Which ONE of the following describes what will happen to VCT level with NO operator action?

VCT level decreases to:

- a. 4%, increases to 11%, then cycles up and down between 4% and 11%.
- b. 4% then increases to and maintains at 40%.
- c. 11% then increases to and maintains at 40%.
- d. 11%, increases to 31%, then cycles up and down between 11% and 31%.



QUESTION: 076 (1.00)

A Rod Control Power Cabinet Urgent Failure has been initiated due to excessive ripple in the coil voltage as a result of a failed thyristor.

Which ONE of the following caused the Urgent Failure when the thyristor failed.

- a. Phase failure.
- b. Regulation failure.
- c. Logic error.
- d. Multiplexing error.

QUESTION: 077 (1.00)

Which ONE of the following represents unacceptable gas concentrations in the in-service gas decay tank?

- a. Oxygen - 0.2%Hydrogen - 96.2%Nitrogen - 3.0%
- b. Oxygen - 1.9%Hydrogen - 46.1%Nitrogen - 49.0%
- c. Oxygen - 2.1%Hydrogen - 4.8%Nitrogen - 92.3%
- d. Oxygen - 3.0%Hydrogen - 3.9%Nitrogen - 91.0%

QUESTION: 078 (1.00)

The following events occurred while Unit 3 was operating at 100% power:

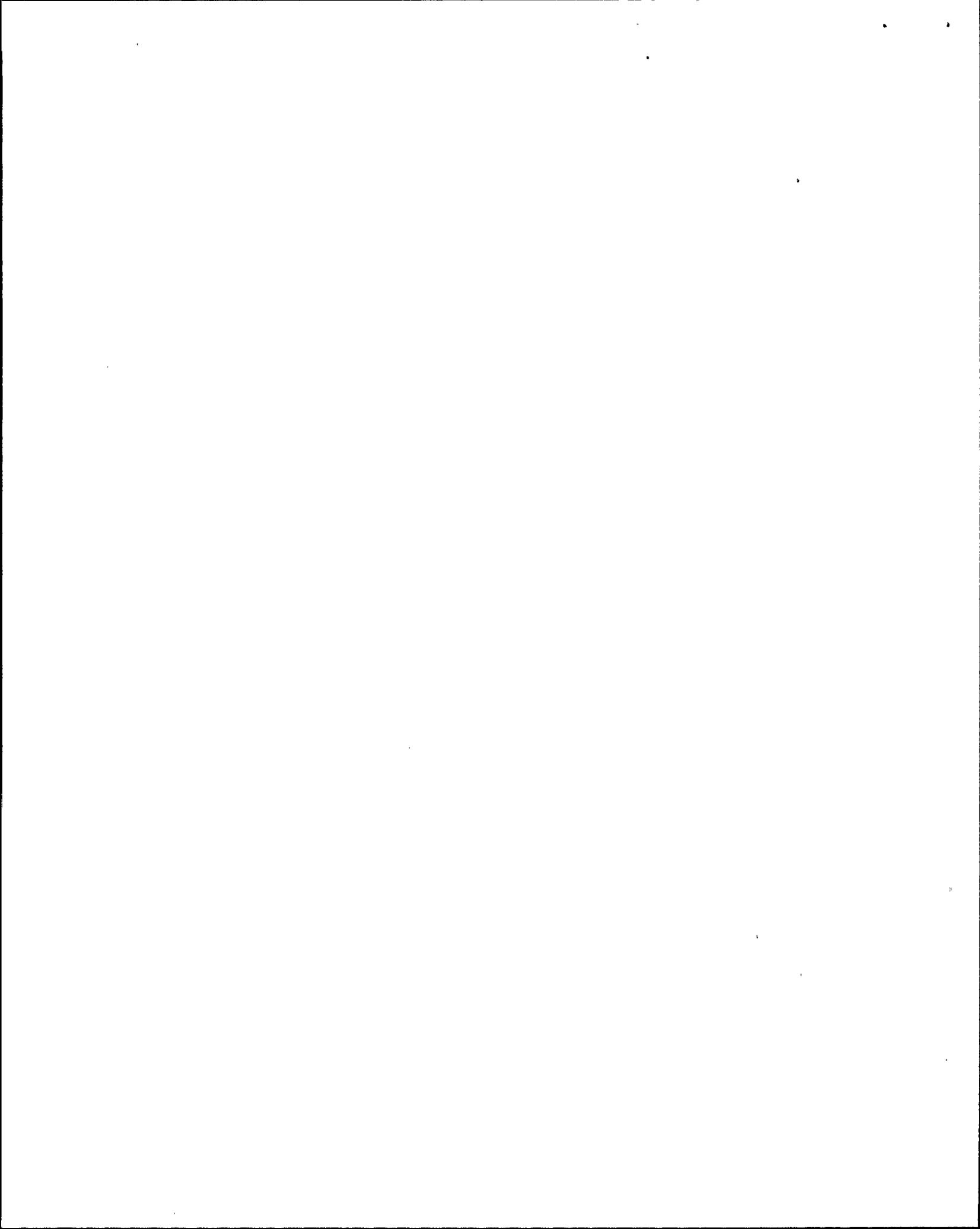
(Date: June 17, 1996)

- 1:00 AM: Accumulator "A" pressure drops below 600 psig (circumstances such that corrective action will not be complete for one week.)
- 1:10 AM: Commenced bringing Unit 3 to Hot Standby.

NOTE: Technical Specifications are provided for reference.

If a similar Accumulator "B" pressure drop occurred one hour after Accumulator "A" pressure drop occurred, which ONE of the following describes when Unit 3 must be in Hot Standby?

- a. Jun 17/7:00 AM
- b. Jun 17/9:00 AM
- c. Jun 17/11:00 AM
- d. Jun 17/1:00 PM



QUESTION: 079 (1.00)

Plant conditions:

- Reactor power 100%
- RCS system pressure 2200 psig (slowly decreasing)
- Pressurizer level 40% (decreasing)
- Tavg 574 degrees F (stable)
- Charging pump 3A running
- Charging flow 60 gpm
- VCT level 30% (decreasing)
- Containment temperature increasing
- Containment sump levels increasing

Which ONE of the following describes an IMMEDIATE action per 3-ONOP- 41.3, Excessive Reactor Coolant System Leakage, in response to this situation?

- a. Operate additional charging pumps and reduce or isolate letdown as necessary to maintain pressurizer level.
- b. Maintain letdown at 45 gpm then isolate letdown when pressurizer level decreases to less than 14%.
- c. Trip the reactor, and enter 3-EOP-E-0 Reactor Trip or Safety Injection.
- d. Operate additional charging pumps as necessary and isolate RCP seal injection to maintain pressurizer level.

QUESTION: 080 (1.00)

Which ONE of the following can occur if P-10 fails to change state during a reactor shutdown from 100% power? (Assume reactor power is 7%).

- a. Source Range trip at $10E5$ cps.
- b. Power Range trip at 25% power.
- c. Intermediate range rod stop actuation.
- d. Pressurizer high level trip.

QUESTION: 081 (1.00)

Which ONE of the following is a possible cause of inward rod motion? (Assume automatic rod control is operating.)

- a. Valve LCV-115B, RWST to charging pumps fails to open.
- b. Tavg input to the rod control system failing high.
- c. Tref input to the rod control system failing high.
- d. Loss of control air to FCV-113A, Boric Acid Flow Control, and FCV-113B, Makeup Isolation Valve to charging pump suction.

QUESTION: 082 (1.00)

Which ONE of the following is a concern while retrieving a misaligned rod at the rod withdrawal rate specified per ONOP-028.1, RCC Misalignment?

- a. Excessive Tavg/Tref deviation.
- b. Loss of shutdown margin.
- c. Localized power peaking and possible fuel clad damage.
- d. Maintaining the other rods on the DC hold cabinet at the proper position.

QUESTION: 083 (1.00)

In response to a LOCA with containment pressure at 3 psig and containment temperature at 170 degrees F, the operating crew has implemented the emergency procedures and are currently in 3-EOP-E-1, LOSS OF REACTOR OR SECONDARY COOLANT.

Step 1 of E-1 (checking if RCPs should be stopped) was completed with RCS subcooling at 30 degrees F.

One minute later, while on step 3 (Checking SG levels), RCS subcooling drops to 20 degrees F.

Which ONE of the following actions is required?

- a. Continue on with step 3.
- b. Stop all RCPs except RCP "B".
- c. Go to 3-EOP-ES-0.0, REDIAGNOSIS, and trip the RCPs.
- d. Verify one High-head SI pump running and trip the RCPs.

QUESTION: 084 (1.00)

Which ONE of the following is the basis for step 1, "Verify Reactor Trip", of FR-S.1, Response to Nuclear Power Generation/ATWS?

- a. To ensure that only decay heat and reactor coolant pumps are adding heat to the RCS.
- b. To ensure shutdown margin is within Technical Specifications limits for HOT STANDBY.
- c. To alert the operator to take further corrective action if the reactor is NOT tripped.
- d. To verify that all automatic reactor protective features have functioned as designed.

QUESTION: 085 (1.00)

The following radiation monitors are in alarm:

- R-3-14, Plant Vent Gas Monitor.
- R-3-15, Condenser Air Ejector Gas Monitor.
- R-3-19, Steam Generator Liquid Sample Monitor.
- R-3-20, Reactor Coolant Letdown Line Radioactivity Monitor.

Which ONE of the following is the reason that responsive actions to these alarms should be prioritized?

- a. To ensure operators take appropriate personal protective action for the most significant source of the releases.
- b. To ensure plant personnel are aware of the most significant radiation hazards.
- c. To ensure that appropriate action is taken to mitigate the cause of the high radiation alarms.
- d. To limit or minimize the radioactive dose to the public off-site.

QUESTION: 086 (1.00)

Plant conditions:

- The Unit is in Mode 1 at 75% power.
- Component Cooling Water System is aligned for split header operations per 3-OP-030, Component Cooling Water System.

Which ONE of the following will occur if power is lost to the "A" train CCW pump?

- a. Cooling water flow to the RCP thermal barriers will be lost.
- b. Cooling water flow will be lost to the Normal Containment Coolers.
- c. The Unit will then be in a 6 hour action statement with only one RHR heat exchanger available.
- d. The standby CCW pump will NOT start-up on CCW system low pressure.

QUESTION: 087 (1.00)

Plant conditions:

- The Unit is shutdown in Mode 5.
- Both boric acid pumps are out of service.
- Suddenly, Source Range count rate begins to increase uncontrollably.

Which ONE of the following is the IMMEDIATE action (if any) for these plant conditions?

- a. Align the charging pump suction to the RWST and remove power from the RWST to charging pump suction MOV.
- b. Align the charging pump suction to the RWST and remove power from the VCT to charging pump suction MOV.
- c. Manually initiate Safety Injection.
- d. NO immediate action is required.

QUESTION: 088 (1.00)

Following a reactor trip, which ONE of the following is the primary parameter that would allow the operator to DISTINGUISH between a feed line break inside containment and a steam line break inside containment?

- a. Containment radiation level.
- b. Affected RCS Loop Delta-T.
- c. Steam header pressure.
- d. Containment temperature.

QUESTION: 089 (1.00)

A loss of all off-site power has occurred. Both emergency diesel generators are running and have been carrying 450 KW each since the loss of off-site power. The plant is being cooled down per ES-0.2, "Natural Circulation Cooldown".

Which ONE of the following concerns should be addressed before 4.5 hours have passed since the loss of off-site power?

- a. Pressurizer level should be raised to 70% to compensate for RCS inventory shrink due to RCS cooldown.
- b. Diesel generator loads must be reduced to assure continued availability.
- c. Diesel generator loads must be increased to minimize the accumulation of exhaust combustibles.
- d. SI must be manually actuated to maintain pressurizer level due to the cooldown.

QUESTION: 090 (1.00)

When draining the RCS using 3-OP-041.9, REDUCED INVENTORY OPERATIONS, the reactor vessel head and pressurizer are both vented to containment atmosphere.

Which ONE of the following describes the effects on reactor vessel level indication if an adequate vent path is NOT provided? (Assume the reference leg remains full).

- a. A vacuum in the RCS loops will result in level indication being lower than actual levels.
- b. A vacuum in the RCS loops will result in level indication being higher than actual levels.
- c. A positive pressure in the RCS loops will result in level indication being lower than actual levels.
- d. The level instruments automatically compensate for positive or negative pressure.

QUESTION: 091 (1.00)

Plant conditions:

- The reactor is critical at the "Point of Adding Heat" for physics testing.
- PT-444, Pressurizer Pressure Control Channel, fails HIGH.

Which ONE of the following will occur first if NO operator action is taken?

- a. Pressure will stabilize around 2235 psig because the pressurizer heaters will energize to compensate for the pressure decrease.
- b. Pressure will stabilize around the 2000 psig setpoint due the 2000 psig pressure interlock.
- c. The reactor will trip on Low Pressurizer pressure at 1835 psig.
- d. A Safety Injection Actuation will trip the reactor at 1730 psig.

QUESTION: 092 (1.00)

Which ONE of the following is the instrument air system PRESSURE RANGE at which the distribution header pressure control valve, CV-*-1605 will throttle closed?

- a. 108 - 95 psig
- b. 98 - 85 psig
- c. 88 - 75 psig
- d. 78 - 65 psig

QUESTION: 093 (1.00)

Plant conditions:

- A reactor trip occurred from 100% power.
- The turbine did NOT automatically trip.
- The turbine would NOT manually trip from the control room.

Which ONE of the following actions per EOP-E-0, "Reactor Trip or Safety Injection," is required next?

- a. Locally trip the turbine.
- b. Continue with step 3 of EOP-E-0.
- c. Close the main steamline isolation valves.
- d. Run back the turbine manually.

QUESTION: 094 (0.00)

Plant conditions:

- The Unit is in Mode 5 preparing for startup following a fueling outage.
- Spent fuel is being positioned for storage in the spent fuel pool.
- A loss of off-site power occurs and the 3A 4KV Emergency bus remains de-energized.

Which ONE of the following is the required IMMEDIATE action in response to these conditions?

- a. Verify bus stripping on 3A 4KV bus per ONOP-004.2, Loss of 3A 4KV bus.
- b. Suspend crane operations over spent fuel pool and movement of irradiated fuel.
- c. Manually open the Station Blackout Breaker 3AD07.
- d. Reset the 3A 4KV bus lockout relay.

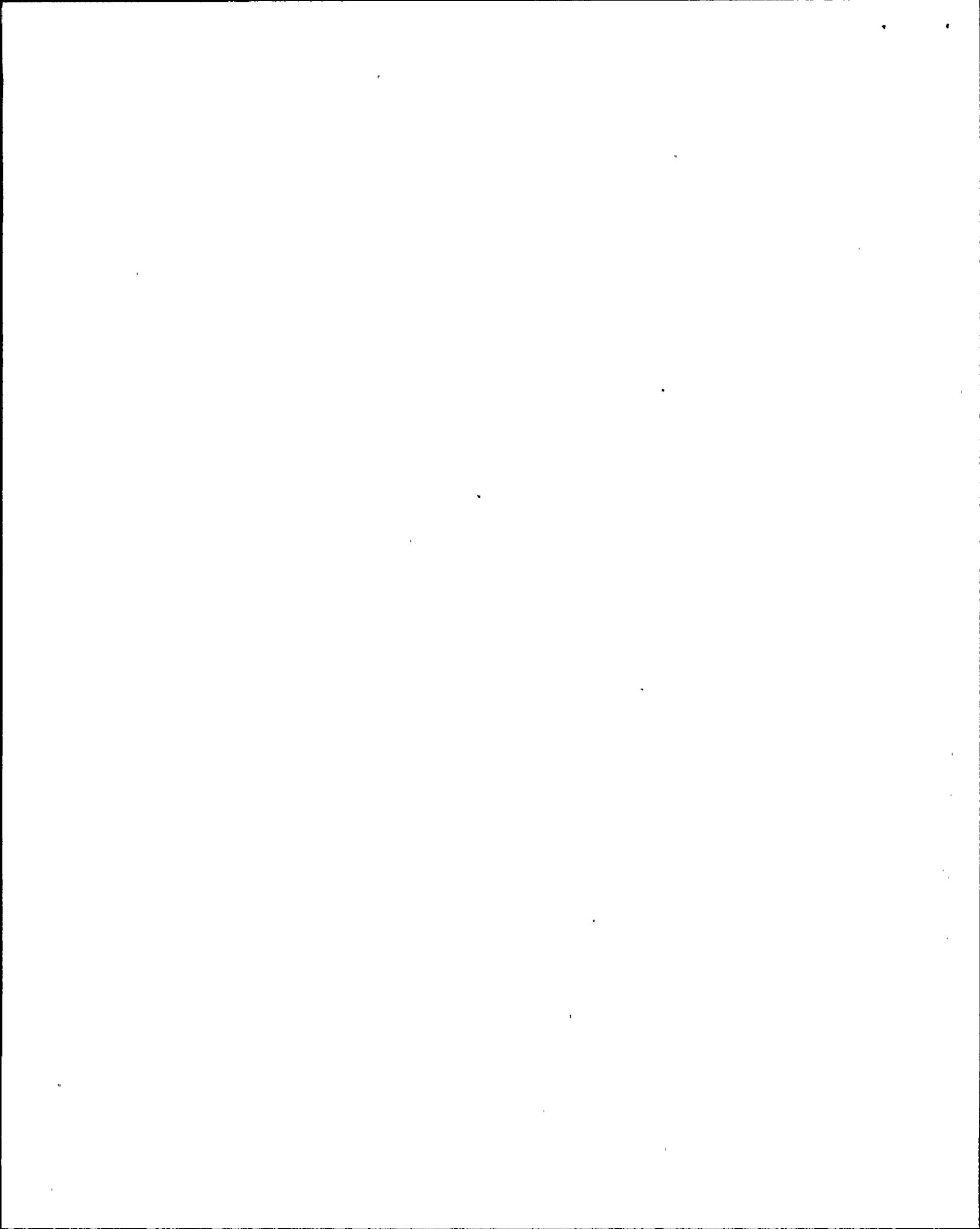
QUESTION: 095 (1.00)

Plant conditions, Unit 3:

- A Loss of Coolant Accident has occurred.
- The crew is performing 3-EOP-E-1, "Loss of Reactor or Secondary Coolant."
- An ORANGE path condition is noted on the computer for Containment Integrity
- The Nuclear Plant Supervisor directs transition to 3-EOP-FR-Z.1, "Response to High Containment Pressure."
- As the procedure reader is reviewing the Symptoms or Entry Conditions" of 3-EOP-FR-Z.1, the ORANGE path indication clears on Containment Integrity and turns YELLOW.

Which ONE of the following describes the action to be taken?

- a. Complete 3-EOP-FR-Z.1 to ensure the ORANGE path condition does NOT recur.
- b. Return to 3-EOP-E-1 without initiating 3-EOP-FR-Z.1.
- c. Complete 3-EOP-FR-Z.1 to clear the YELLOW path on Containment Integrity.
- d. Check for any higher priority YELLOW paths and take action to clear the highest priority.



QUESTION: 096 (1.00)

Which ONE of the following is the lowest level position responsible for ensuring entries are made in the Technical Specification Related Equipment Out-Of-Service Index?

- a. Nuclear Plant Supervisor
- b. Assistant Nuclear Plant Supervisor
- c. Senior Nuclear Plant Operator
- d. Nuclear Watch Engineer

QUESTION: 097 (1.00)

Which ONE of the following describes the purpose for showing a valve locking device on a valve in a plant drawing?

- a. There is a regulatory commitment to keep the valve locked in the indicated position.
- b. The valve is routinely in the position indicated in the drawing and is repositioned for maintenance in Mode 5.
- c. The valve is in a flow path which could be used in the EOP network.
- d. There is a post accident flow path which could be blocked if the valve position was changed.

QUESTION: 098 (1.00)

A male licensed operator is to be given a Planned Special Exposure (PSE) that will be a Total Effective Dose Equivalent (TEDE). The operator's current exposure conditions are as follows:

- He has received previous PSEs totaling 16 rem TEDE.
- His current annual exposure is 2.3 rem TEDE.
- He was 23 years old on his last birthday, one month ago.
- His NRC Form-4 is up to date.

Which ONE of the following states the MAXIMUM PSE that can be assigned to the operator?

- a. 1.8 rem
- b. 2.3 rem
- c. 5.0 rem
- d. 9.0 rem

QUESTION: 099 (1.00)

Which ONE of the following would require a Job-In-Progress ALARA Review of a RWP with a projected man-rem exposure of 5 rem and a total labor estimate of 200 man-hours?

- a. The current man-rem exposure has reached 1.25 rem.
- b. The duration of the job has exceeded 7 days.
- c. The current man-hours expended is 205 man-hours.
- d. A radiation worker is injured putting temporary shielding in place.

QUESTION: 100 (1.00)

Which ONE of the following describes the maximum number and the maximum time that under-manning of the fire brigade may exist?

- a. Two people for one hour.
- b. Two people for two hours.
- c. One person for four hours.
- d. One person for eight hours.

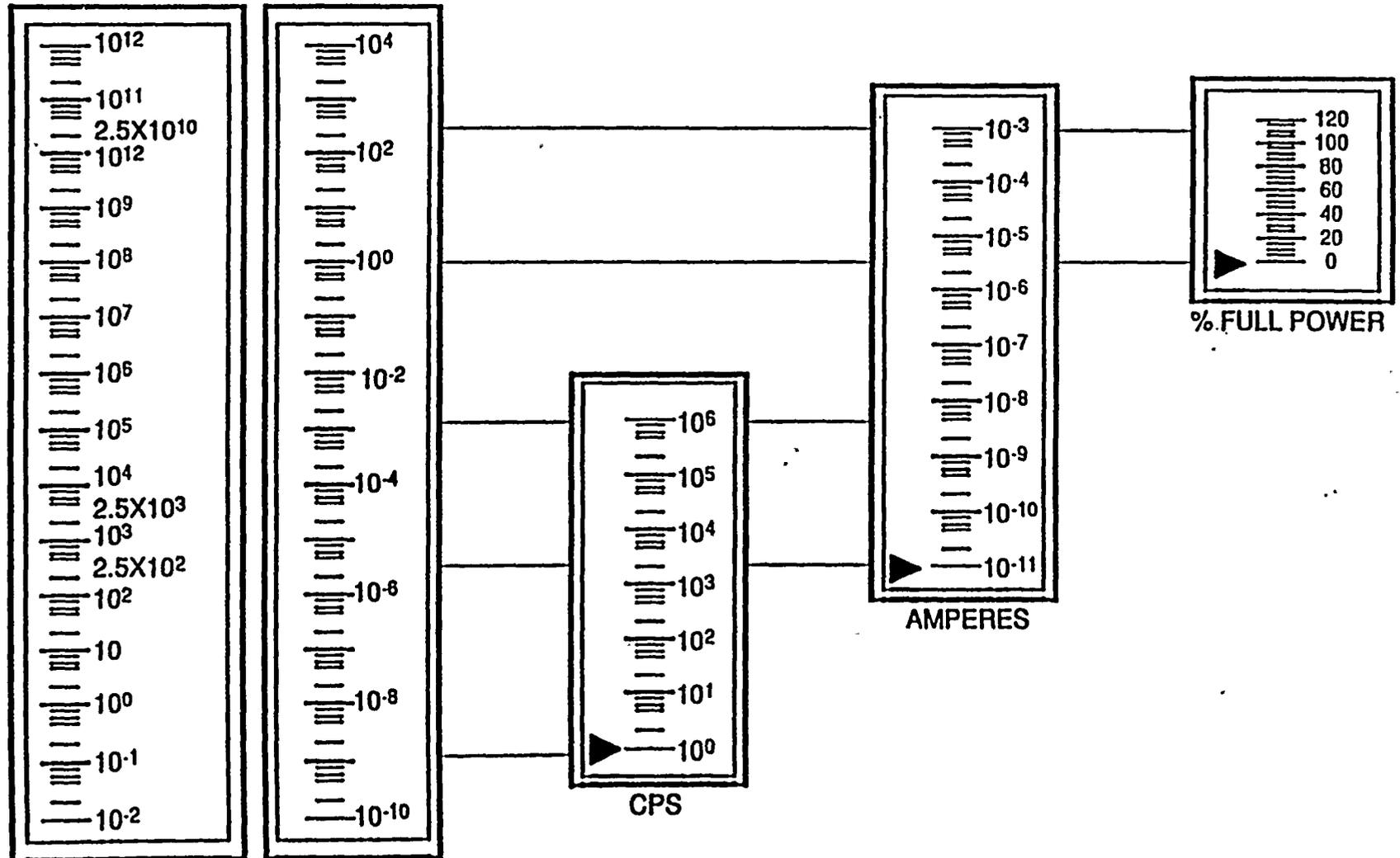
(***** END OF EXAMINATION *****)

06/05/96

INDEX OF REFERENCES

1. SD-004 FIGURE 5
2. ONOP-067 PAGE 31 & ATTACHMENT #4
3. TECH. SPECS. PAGES 3/4 0-1 THRU 3/4 0-4
PAGES 3/4 5-1 THRU 3/4 5-2
PAGE 3/4 11-5
4. COLR - ROD INSERTION LIMIT CURVES
5. P & ID 5613-M-3030 SHEET 5
6. P & ID 5613-M-3075 SHEET 2
7. STEAM TABLES

EXCORE INSTRUMENTATION RANGES & OVERLAPS



THERMAL NEUTRON
FLUX IN NEUTRONS/
CM² - SEC AT
DETECTOR LOCATION

% POWER

CPS

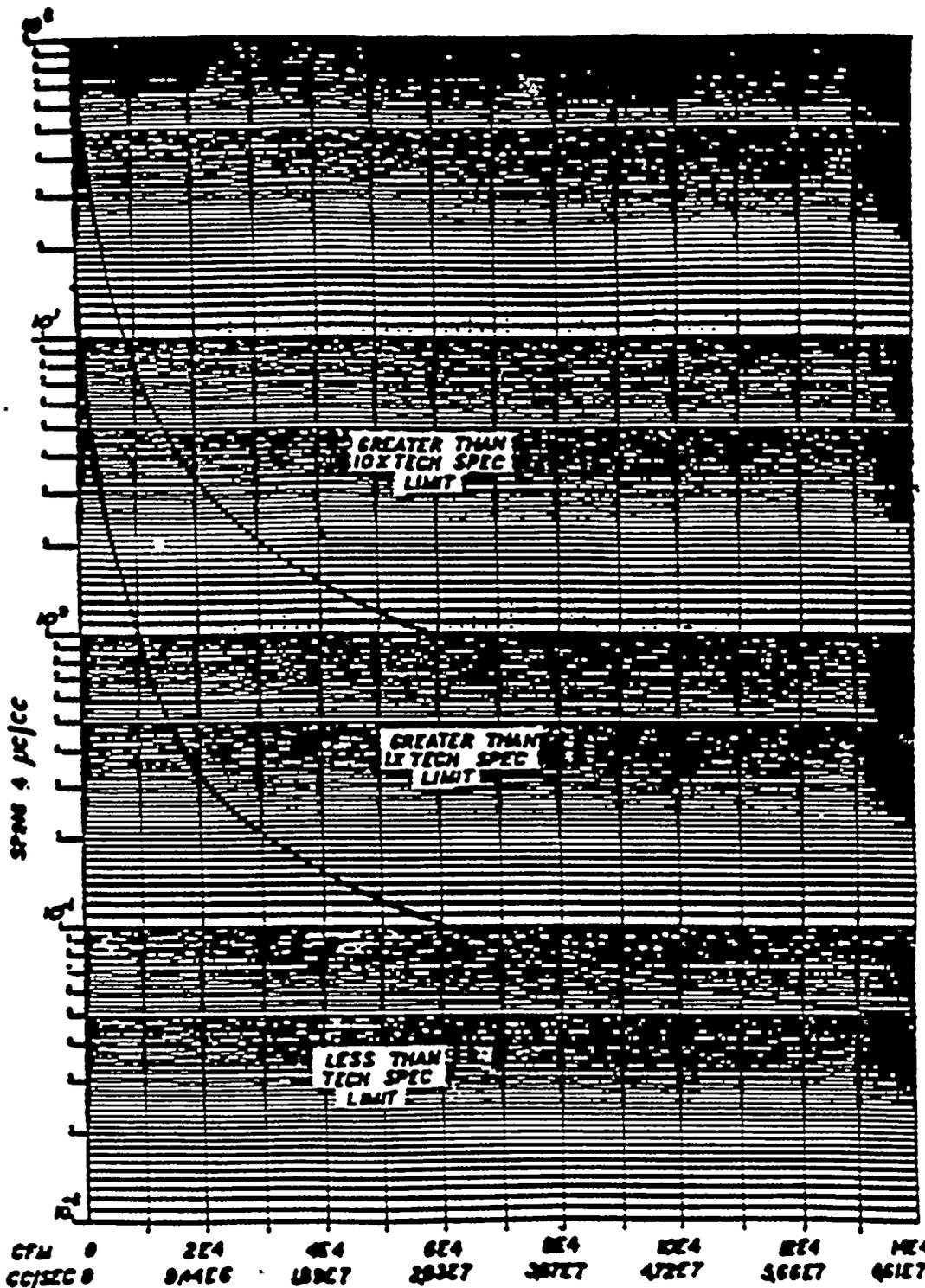
AMPERES

% FULL POWER

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
<p>52</p>	<p>Check For Release To Atmosphere</p> <p>a. Verify RCV-014 - CLOSED</p> <p>b. Check if High Alarm on monitor caused by excessive release rate of gas decay tank</p> <p>c. Check count rate on all stack monitors - DECREASING</p> <p>d. Perform following prior to recommencing gas release:</p> <ol style="list-style-type: none"> 1) Notify NPS and Chemistry of problem with gas release 2) Resample affected gas decay tank 3) Resubmit gas release permit to NPS for approval <p>e. Return to Step 1</p> <p>f. Check following:</p> <ul style="list-style-type: none"> • All gas decay tank pressures less than 100 psig • No gas decay tank pressure decreasing in an uncontrolled manner <p>g. Check airborne release - LESS THAN LIMITS OF ATTACHMENT 4</p> <p>h. Determine cause of release and perform mitigating actions as directed By Health Physics</p>	<p>a. Locally close 4638B, RCV-014 Isol</p> <p>b. Go to Step 52f.</p> <p>c. Go to Step 52f.</p> <p>f. Perform the following:</p> <ol style="list-style-type: none"> 1) Isolate the affected tank. 2) Transfer contents of affected tank to another gas decay tank using OP-5503.1, WASTE DISPOSAL SYSTEM - GASEOUS DISPOSAL SYSTEM OPERATION. <p>g. Perform following:</p> <ol style="list-style-type: none"> 1) Refer to EPIP-20101, DUTIES OF EMERGENCY COORDINATOR. 2) Direct Chemistry Department to perform off-site dose calculations using EPIP-20126.

ATTACHMENT 4
(Page 1 of 1)

RELEASE RATE VS. TECHNICAL SPECIFICATIONS 3.11.2 LIMITS



FLOW RATES:

1. Plant Vent - Use SPING 4 flow measurement
2. Unit 3 Spent Fuel Pit - 20,000 cfm
3. Unit 3 Condenser Air Ejector - 30-cfm (for a maximum assumed flowrate of 30 cfm for the condenser air ejectors, the release concentration that equals the Tech Spec limit is 204 µCi/cc.)

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

3/4.0 APPLICABILITY

LIMITING CONDITIONS FOR OPERATION

3.0.1 Compliance with the Limiting Conditions for Operation contained in the succeeding specifications is required during the OPERATIONAL MODES or other conditions specified therein; except that upon failure to meet the Limiting Conditions for Operation, the associated ACTION requirements shall be met.

3.0.2 Noncompliance with a specification shall exist when the requirements of the Limiting Condition for Operation and associated ACTION requirements are not met within the specified time intervals. If the Limiting Condition for Operation is restored prior to expiration of the specified time intervals, completion of the ACTION requirements is not required.

3.0.3 When a Limiting Condition for Operation is not met, except as provided in the associated ACTION requirements, within 1 hour action shall be initiated to place the unit, as applicable, in:

- a. At least HOT STANDBY within the next 6 hours,
- b. At least HOT SHUTDOWN within the following 6 hours, and
- c. At least COLD SHUTDOWN within the subsequent 24 hours.

Where corrective measures are completed that permit operation under the ACTION requirements, the action may be taken in accordance with the specified time limits as measured from the time of failure to meet the Limiting Condition for Operation. Exceptions to these requirements are stated in the individual specifications.

This specification is not applicable in MODES 5 or 6.

3.0.4 Entry into an OPERATIONAL MODE or other specified condition shall not be made when the conditions for the Limiting Conditions for Operation are not met and the associated ACTION requires a shutdown if they are not met within a specified time interval. Entry into an OPERATIONAL MODE or specified condition may be made in accordance with ACTION requirements when conformance to them permits continued operation of the facility for an unlimited period of time. This provision shall not prevent passage through or to OPERATIONAL MODES as required to comply with ACTION requirements. Exceptions to these requirements are stated in the individual specifications.

APPLICABILITY

LIMITING CONDITIONS FOR OPERATION (Continued)

3.0.5 Limiting Conditions for Operation including the associated ACTION requirements shall apply to each unit individually unless otherwise indicated as follows:

- a. Whenever the Limiting Conditions for Operation refers to systems or components which are shared by both units, the ACTION requirements will apply to both units simultaneously.
- b. Whenever the Limiting Conditions for Operation applies to only one unit, this will be identified in the APPLICABILITY section of the specification; and
- c. Whenever certain portions of a specification contain operating parameters, Setpoints, etc., which are different for each unit, this will be identified in parentheses, footnotes or body of the requirement.

APPLICABILITY

SURVEILLANCE REQUIREMENTS

4.0.1 Surveillance Requirements shall be met during the OPERATIONAL MODES or other conditions specified for individual Limiting Conditions for Operation unless otherwise stated in an individual Surveillance Requirement.

4.0.2 Each Surveillance Requirement shall be performed within the specified time interval with a maximum allowable extension not to exceed 25% of the surveillance interval.

4.0.3 Failure to perform a Surveillance Requirement within the allowed surveillance interval, defined by Specification 4.0.2, shall constitute noncompliance with the OPERABILITY requirements for a Limiting Condition for Operation. The time limits of the ACTION requirements are applicable at the time it is identified that a Surveillance Requirement has not been performed. The ACTION requirements may be delayed for up to 24 hours to permit the completion of the surveillance when the allowable outage time limits of the ACTION requirements are less than 24 hours. Surveillance Requirements do not have to be performed on inoperable equipment.

4.0.4 Entry into an OPERATIONAL MODE or other specified condition shall not be made unless the Surveillance Requirement(s) associated with a Limiting Condition for Operation has been performed within the stated surveillance interval or as otherwise specified. This provision shall not prevent passage through or to OPERATIONAL MODES as required to comply with ACTION requirements.

4.0.5 Surveillance Requirements for inservice inspection and testing of ASME Code Class 1, 2, and 3 components shall be applicable as follows:

- a. Inservice inspection of ASME Code Class 1, 2, and 3 components and inservice testing of ASME Code Class 1, 2, and 3 pumps and valves shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda as required by 10 CFR 50, Section 50.55a.

APPLICABILITY

SURVEILLANCE REQUIREMENTS (CONTINUED)

- b. Surveillance intervals specified in Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda shall be applicable as follows in these Technical Specifications:

<u>ASME Boiler and Pressure Vessel Code and applicable Addenda terminology for inservice inspection and testing activities</u>	<u>Required frequencies for performing inservice inspection and testing activities</u>
Weekly	At least once per 7 days
Monthly	At least once per 31 days
Quarterly or every 3 months	At least once per 92 days
Semiannually or every 6 months	At least once per 184 days
Every 9 months	At least once per 276 days
Yearly or annually	At least once per 366 days

- c. The provisions of Specification 4.0.2 are applicable to the above required frequencies for performing inservice inspection and testing activities.
- d. Performance of the above inservice inspection and testing activities shall be in addition to other specified Surveillance Requirements.
- e. Nothing in the ASME Boiler and Pressure Vessel Code shall be construed to supersede the requirements of any Technical Specification.

4.0.6 Surveillance Requirements shall apply to each unit individually unless otherwise indicated as stated in Specification 3.0.5 for individual specifications or whenever certain portions of a specification contain surveillance parameters different for each unit, which will be identified in parentheses, footnotes or body of the requirement.

3/4.5 EMERGENCY CORE COOLING SYSTEMS

3/4.5.1 ACCUMULATORS

LIMITING CONDITION FOR OPERATION

- 3.5.1 Each Reactor Coolant System (RCS) accumulator shall be OPERABLE with:
- a. The isolation valve open and its circuit breaker open,
 - b. An indicated borated water volume of between 6520 and 6820 gallons,
 - c. A boron concentration of between 1950 and 2350 ppm,
 - d. A nitrogen cover-pressure of between 600 and 675 psig, and
 - e. A water level and pressure channel OPERABLE.

APPLICABILITY: MODES 1, 2, and 3*.

ACTION:

- a. With one accumulator inoperable, except as a result of a closed isolation valve, restore the inoperable accumulator to OPERABLE status within 4 hours or be in at least HOT STANDBY within the next 6 hours and reduce pressurizer pressure to less than 1000 psig within the following 6 hours.
- b. With one accumulator inoperable due to the isolation valve being closed, either immediately open the isolation valve or be in at least HOT STANDBY within 6 hours and reduce pressurizer pressure to less than 1000 psig within the following 6 hours.

SURVEILLANCE REQUIREMENTS

4.5.1.1 Each accumulator shall be demonstrated OPERABLE:

- a. At least once per 12 hours by:
 - 1) Verifying the indicated borated water volume and nitrogen cover-pressure in the tanks, and
 - 2) Verifying that each accumulator isolation valve is open by control room indication (power may be restored to the valve operator to perform this surveillance if redundant indicator is inoperable).

*Pressurizer pressure above 1000 psig.

EMERGENCY CORE COOLING SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- b. At least once per 31 days and within 6 hours after each solution volume increase of greater than or equal to 1% of tank volume by verifying the boron concentration of the solution in the water-filled accumulator;
- c. At least once per 31 days:
 - 1) When the RCS pressure is above 1000 psig, by verifying that the power to the isolation valve operator is disconnected by a locked open breaker, and
 - 2) Each accumulator water level and pressure channel shall be demonstrated OPERABLE by the performance of an ANALOG CHANNEL OPERATIONAL TEST, and
- d. At least once per 18 months:
 - 1) Each accumulator water level and pressure channel shall be demonstrated OPERABLE by the performance of a CHANNEL CALIBRATION, and
 - 2) Each accumulator check valve shall be checked for operability.

RADIOACTIVE EFFLUENTS

DOSE

LIMITING CONDITION FOR OPERATION

3.11.1.2 The dose or dose commitment to a MEMBER OF THE PUBLIC from radioactive materials in liquid effluents released, from each unit, to UNRESTRICTED AREAS (see Figure 5.1-1) shall be limited:

- a. During any calendar quarter to less than or equal to 1.5 mrems to the whole body and to less than or equal to 5 mrems to any organ, and
- b. During any calendar year to less than or equal to 3 mrems to the whole body and to less than or equal to 10 mrems to any organ.

APPLICABILITY: At all times.

ACTION:

- a. With the calculated dose from the release of radioactive materials in liquid effluents exceeding any of the above limits, prepare and submit to the Commission within 30 days, pursuant to Specification 6.9.2, a Special Report that identifies the cause(s) for exceeding the limit(s) and defines the corrective actions that have been taken to reduce the releases and the proposed corrective actions to be taken to assure that subsequent releases will be in compliance with the above limits.
- b. The provisions of Specification 3.0.3 are not applicable.

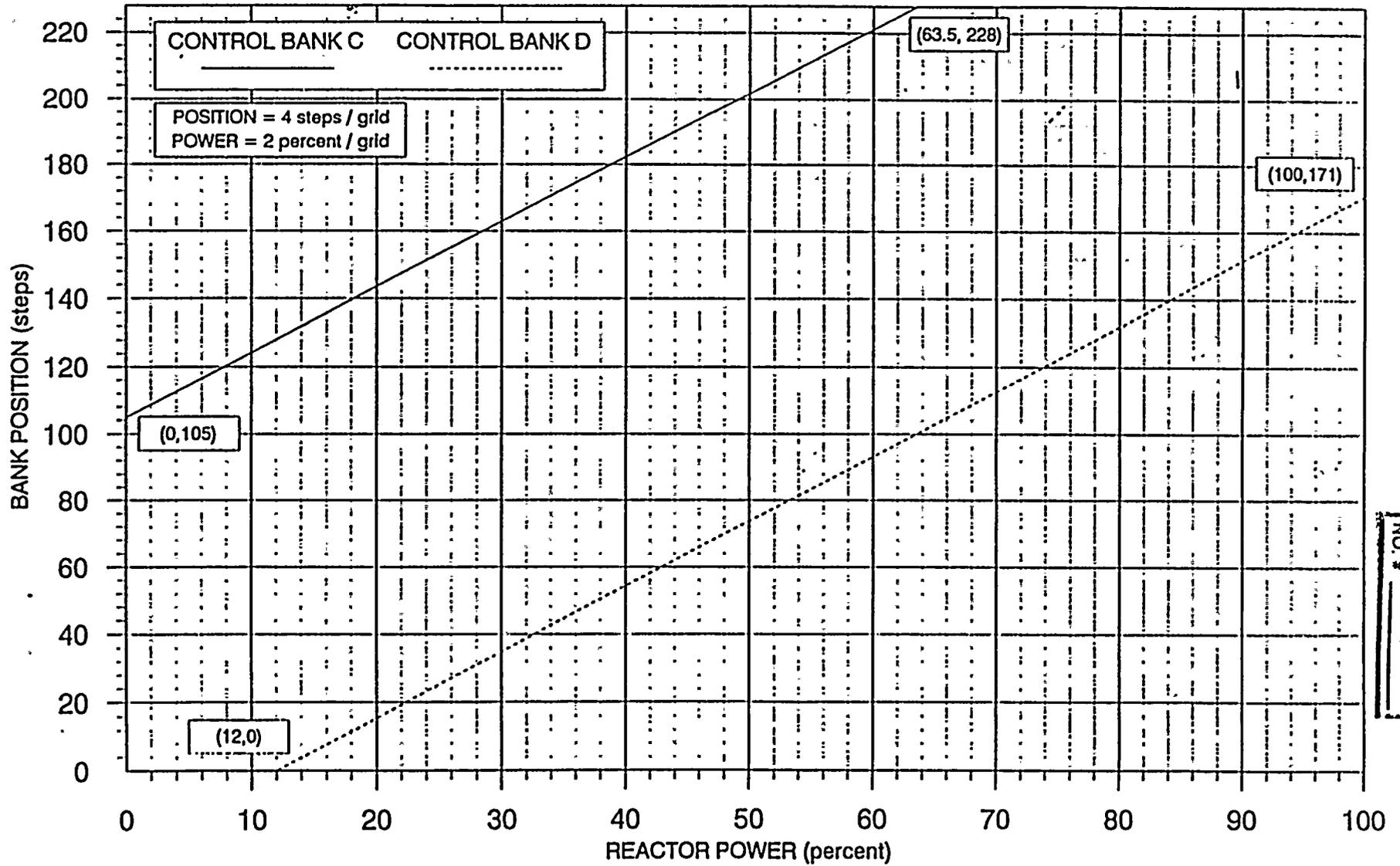
SURVEILLANCE REQUIREMENTS

4.11.1.2 Cumulative dose contributions from liquid effluents for the current calendar quarter and the current calendar year shall be determined in accordance with the methodology and parameters in the ODCM at least once per 31 days.

UNIT 3 CYCLE 15

CONTROL BANK INSERTION LIMITS

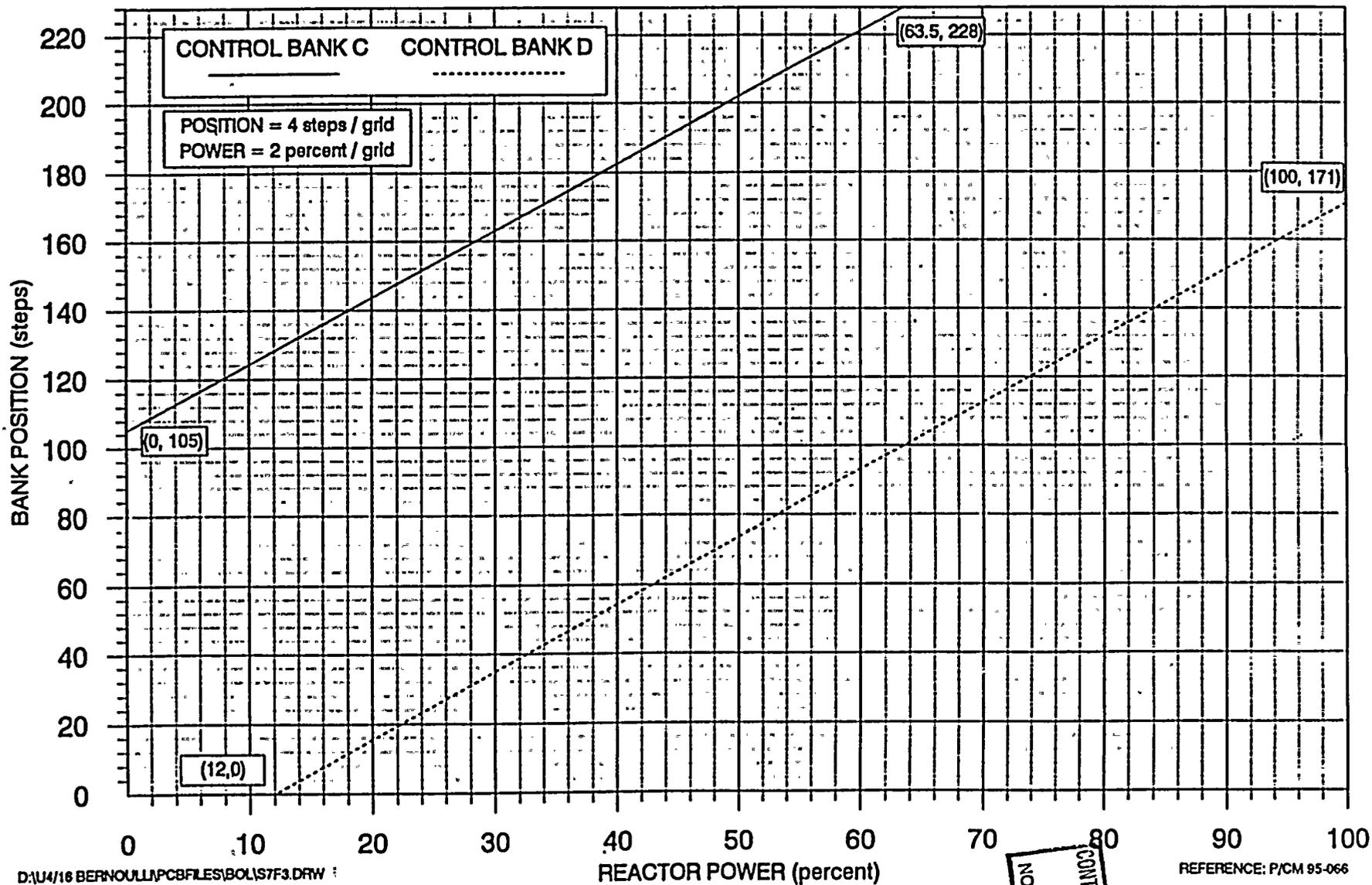
Section 7, Figure 3
1 Oct 95
MSB



CONTROLLED ELEMENT
 NO. # 5

UNIT 4 CYCLE 16 CONTROL BANK INSERTION LIMITS

Section 7, Figure 3
28 MAR 96
AOC



D:\U4\16 BERNOLL\PCBFILES\BOL\57F3.DRW

REFERENCE: P/CM 95-066

NO. 4
5
CONTROLLED DOCUMENT

SLO ANSWER KEY



ANSWER KEY

MULTIPLE CHOICE

- | | |
|-------|---------------------|
| 001 c | 024 a |
| 002 c | 025 c |
| 003 a | 026 b |
| 004 d | 027 a |
| 005 b | 028 a |
| 006 c | 029 b |
| 007 c | 030 c |
| 008 c | 031 c |
| 009 a | 032 b |
| 010 d | 033 a |
| 011 a | 034 c |
| 012 b | 035 b |
| 013 a | 036 b |
| 014 d | 037 c |
| 015 d | 038 b |
| 016 c | 039 a |
| 017 a | 040 d |
| 018 c | 041 d |
| 019 a | 042 d |
| 020 c | 043 c or a <i>✓</i> |
| 021 d | 044 b or d <i>✓</i> |
| 022 a | 045 b |
| 023 b | 046 c |

ANSWER KEY

047 a	070 a
048 b	071 b
049 b	072 d
050 b	073 a
051 b	074 c
052 d	075 a
053 c	076 a
054 d	077 c
055 a	078 b
056 d	079 a
057 b	080 d
058 a	081 b
059 a	082 c
060 d	083 d
061 b	084 a
062 d	085 d
063 b	086 d
064 a	087 b
065 d	088 b
066 d	089 c
067 d	090 a
068 d <i>or b</i>	091 d
069 d	092 c

ANSWER KEY

- 093 d
- 094 b
- 095 *b^e a*
- 096 b
- 097 a
- 098 c
- 099 c
- 100 b

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

TEST CROSS REFERENCE
SRO Exam PWR Reactor
Organized by Question Number

QUESTION VALUE REFERENCE

001	1.00	9000101	002	1.00	9000102	003	1.00	9000103
004	1.00	9000104	005	1.00	9000105	006	1.00	9000106
007	1.00	9000107	008	1.00	9000108	009	1.00	9000109
010	1.00	9000110	011	1.00	9000111	012	1.00	9000112
013	1.00	9000113	014	1.00	9000114	015	1.00	9000115
016	1.00	9000116	017	1.00	9000117	018	1.00	9000118
019	1.00	9000119	020	1.00	9000120	021	1.00	9000121
022	1.00	9000122	023	1.00	9000123	024	1.00	9000124
025	1.00	9000125	026	1.00	9000126	027	1.00	9000127
028	1.00	9000128	029	1.00	9000129	030	1.00	9000130
031	1.00	9000131	032	1.00	9000132	033	1.00	9000133
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055	1.00	9000155	056	1.00	9000156	057	1.00	9000157
058	1.00	9000158	059	1.00	9000159	060	1.00	9000160
061	1.00	9000161	062	1.00	9000162	063	1.00	9000163
064	1.00	9000164	065	1.00	9000165	066	1.00	9000166
067	1.00	9000167	068	1.00	9000168	069	1.00	9000169
070	1.00	9000170	071	1.00	9000171	072	1.00	9000172
073	1.00	9000173	074	1.00	9000174	075	1.00	9000175
076	1.00	9000176	077	1.00	9000177	078	1.00	9000178
079	1.00	9000179	080	1.00	9000180	081	1.00	9000181
082	1.00	9000182	083	1.00	9000183	084	1.00	9000184
085	1.00	9000185	086	1.00	9000186	087	1.00	9000187
088	1.00	9000188	089	1.00	9000189	090	1.00	9000190
091	1.00	9000191	092	1.00	9000192	093	1.00	9000193
094	1.00	9000194	095	1.00	9000195	096	1.00	9000196
097	1.00	9000197	098	1.00	9000198	099	1.00	9000199
100	1.00	9000200						

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TURKEY POINT
RO Master 96-308

**U. S. NUCLEAR REGULATORY COMMISSION
SITE-SPECIFIC
WRITTEN EXAMINATION**

APPLICANT INFORMATION

Name:	Region:	II
Date: June 14, 1996	Facility/Unit:	Turkey Point
License Level: RO	Reactor Type:	PWR. - Westinghouse

INSTRUCTIONS

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 percent. Examination papers will be picked up 4 hours after the examination starts.

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

MASTER

Applicant's Signature

RESULTS

Examination Value	<u>100</u> Points
Applicant's Score	_____ Points
Applicant's Grade	_____ Percent

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 lists all instrumentation whose signals are inputs to the Reactor Control Unit (RCU), and how each instrument must fail in order to obtain an inward rod motion signal from the RCU.

- a. Auctioneered High Tave - fail high
N-44 Power Range Detector - fail high
Turbine First Stage Pressure - fail low
- b. Median Tave - fail high
N-44 Nuclear Power - fail low
Turbine First Stage Pressure - fail high
- c. Auctioneered High Tave - fail low
N-44 Nuclear Power - fail high
Turbine First Stage Pressure - fail low
- d. Median Tave - fail high
N-44 Nuclear Power - fail high
Turbine First Stage Pressure - fail low

QUESTION: 002 (1.00)

Plant conditions, Unit 3:

- A reactor trip has just occurred.
- RCS pressure 2200 psig decreasing
- RCS Temperature 550 F decreasing
- Pressurizer level 25 % decreasing
- Two Control Bank D rods 220 steps

Which ONE of the following is the required action to be taken?

- a. Emergency borate from the RWST at 60 gpm for 78 minutes.
- b. Emergency borate through MOV-3-350 (Emergency Boration Valve) at greater than or equal to 60 gpm for 78 minutes.
- c. Manual emergency borate through the blender and valve 3-356 (Manual Emergency Boration valve) at 10 gpm for 2 hours.
- d. Borate through the blender using the makeup system at 10 gpm until 5510 gallons have been added.

QUESTION: 003 (1.00)

During a Loss of Coolant Accident (LOCA) on Unit 3, RCS pressure has decreased and stabilized at 700 psig. Which ONE of the following lists the ECCS components that would have injected ECCS water into the RCS?

- a. HHSI Pumps 3A and 3B only.
- b. HHSI Pumps 3A, 3B, 4A, and 4B.
- c. Three SI Accumulators and HHSI Pumps 3A and 3B only.
- d. Three SI Accumulators and HHSI Pumps 3A, 3B, 4A, and 4B.

QUESTION: 004 (1.00)

Which ONE of the following describes the reason for the two minute time delay that must expire before an operator can reset a manually actuated SI?

- a. To allow the SI slave relay time delays to time-out.
- b. To ensure that the initiating event has passed.
- c. To ensure that all safeguards equipment has actuated.
- d. To allow sufficient time to perform the immediate action steps of E-0.

QUESTION: 005 (1.00)

Plant conditions:

- The plant is operating normally at 100% power.
- All control systems are in automatic.
- Power Range Nuclear Instrument channel N-44 fails high.

Which ONE of the following statements describes the rod control system's response (if any) to this failure?

- a. CB-D rods step in due to NI-secondary plant power mismatch then step out due to Tavg-Tref mismatch.
- b. CB-D rods step in due to NI-secondary plant power mismatch and stop when the rate of change signal decays away.
- c. No effect, because power range channel N-41 normally provides input to the rod control system.
- d. No effect, because control bank rods will not move due to the automatic rod stop at 103% power when N-44 fails high.

QUESTION: 006 (1.00)

Plant conditions:

- The plant is operating at 100% power.
- One of the 3 containment "HIGH-HIGH PRESS" pressure switches is out of service.

One of the 3 containment "HIGH PRESS" pressure switches fail such that a high pressure signal is initiated.

Which ONE of the following describes the Containment Spray system and plant response to the pressure switch failure?

- a. Containment Spray WILL NOT actuate; alarm annunciator H-5/1, "CNTMT HI-HI/HI PRESS" actuates on a 1/3 logic.
- b. Containment Spray WILL actuate; alarm annunciator H-5/1, "CNTMT HI-HI/HI PRESS" actuates on a 2/6 logic.
- c. Containment Spray WILL NOT actuate; alarm annunciator H-5/1, "CNTMT HI-HI/HI PRESS" actuates along with a SI, Rx Trip, and Containment Phase A Isolation.
- d. Containment Spray WILL actuate; alarm annunciator H-5/1, "CNTMT HI-HI/HI PRESS" actuates along with a Containment Isolation Phase B Isolation.

QUESTION: 007 (1.00)

Which ONE of the following is the minimum AFW flow requirement for a loss of off-site power in conjunction with an Anticipated Transient Without Scram? (Assume all S/G levels are at 5% in the narrow range.)

- a. Greater than 230 gpm within 10 minutes.
- b. Greater than 315 gpm
- c. Greater than 375 gpm
- d. Greater than 750 gpm within 60 seconds.

QUESTION: 008 (1.00)

Plant conditions:

- Containment Phase "A" isolation has occurred.
- The Isolation signal has not been reset.

Which ONE of the following describes the effect on RCP seal number 1 seal leakoff?

- a. Decrease - due to loss of seal injection.
- b. Decrease - due to increased back-pressure.
- c. Decrease to zero because Seal Leakoff valves (303A, B and C) have closed.
- d. Decrease to zero because the Seal Return Isolation valve (MOV- 381) has closed.

QUESTION: 009 (1.00)

Which ONE of the following parameter inputs, if lost, will cause a "Rod Banks A/B/C/D Extra Low Limit" alarm?

- a. Median Tavg.
- b. Tref.
- c. NI power range.
- d. Median Delta-T.

QUESTION: 010 (1.00)

Which ONE of the following is the power supply for the 3B Containment Spray Pump?

- a. Load Center 3C
- b. Load Center 3D
- c. Motor Control Center 3B
- d. Motor Control Center 3C

QUESTION: 011 (1.00)

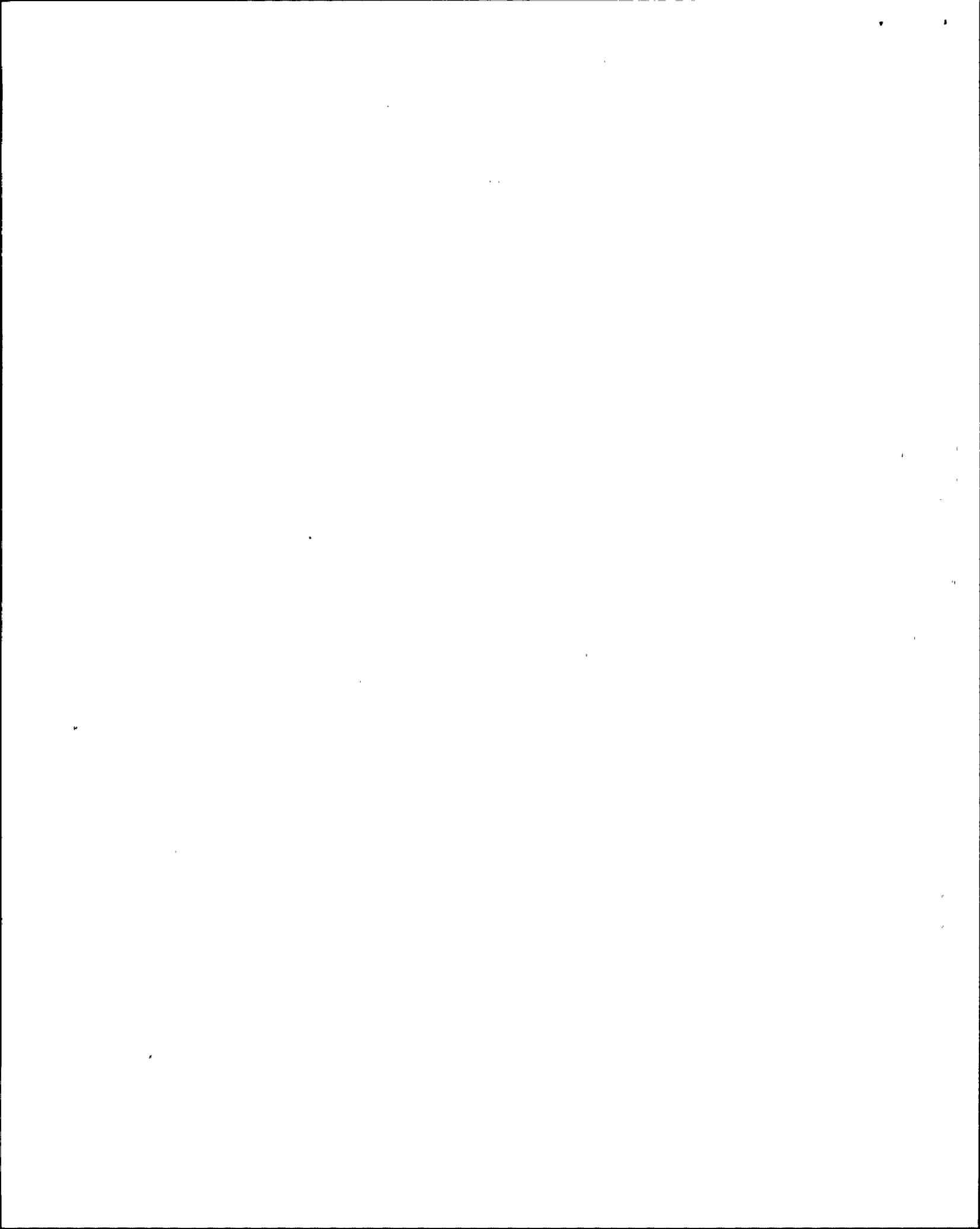
Which ONE of the following will be affected by a loss of all VITAL ⁵120 VDC power? _____

- a. Nuclear Instrumentation.
- b. Turbine Emergency Bearing Oil Pumps.
- c. Emergency Diesel Generators.
- d. Inverters 3Y25 (from 3D31) and 4Y25 (from 4D31).

QUESTION: 012 (1.00)

Which ONE of the following describes the operating pump configuration if Fire System Loop pressure has decreased to 82 psig? (assume normal system lineup)

- a. Standby Jockey Pump running.
- b. Diesel Driven Fire Pump running
- c. Electric Driven Fire and one Jockey Pump running.
- d. Electric and Diesel Driven Fire Pumps running.



QUESTION: 013 (1.00)

Plant conditions:

- Unit 3 is ramping up to full power.
- Reactor power 90%
- RCS Tavg 573 degrees F
- Pressurizer pressure 2215 psig
- Pressurizer level 30%
- RCS flow 105%

Which ONE of the following describes the status of the Limiting Condition for Operation (LCO) for the DNB Parameter Technical Specification?

- a. Parameters are within limits, the LCO is satisfied.
- b. The LCO is not satisfied due to pressurizer level.
- c. The LCO is not satisfied due to pressurizer pressure.
- d. The LCO is satisfied, but RCS flow is excessive.

QUESTION: 014 (1.00)

Which ONE of the following is supplied by the Emergency Service Water System during a complete loss of Turbine Plant Cooling Water?

- a. Circulating water pumps
- b. Deaerator vacuum pump oil cooler
- c. Intake cooling water pump
- d. Turbine lube oil coolers

QUESTION: 015 (1.00)

Unit 3 Component Cooling Water System is aligned for split header operation. The "A" CCW pump is supplying train "A" CCW heat exchanger and the "B" CCW pump is supplying train "B" CCW heat exchanger.

(Assume the plant is in a normal electrical alignment).

Which ONE of the following describes the interlock(s) associated with the automatic start of the CCW pumps?

- a. If CCW Pump "A" local remote switch is placed in the "Local" position, the CCW pump will not automatically start on low header pressure.
- b. CCW Pump "C" will not automatically start on an Emergency Load Sequencer signal unless CCW "A" breaker is racked out.
- c. When the CCW headers are split, the standby CCW pump starts on LOW pressure on "B" header only.
- d. If Unit 3 is sequencing due to loss of voltage when an SI and low voltage signal are received on Unit 4, Unit 3 CCW pumps will trip and not be sequenced on again.

QUESTION: 016 (1.00)

Which ONE of the following actions, per FR-Z.1, Response to High Containment Pressure, is required to be taken when Hydrogen concentration in containment reaches 2.5% in dry air following a LOCA in Unit 3? (Assume containment pressure is 3.5 psig)

- a. Vent containment to atmosphere using the post Accident Containment Ventilation system.
- b. Connect a portable Hydrogen Recombiner using ONOP-094.3, "Hydrogen Recombiner Acquisition, Installation, and Operation".
- c. Start a waste gas compressor with suction aligned to containment and discharging to the on service waste gas tank until waste gas tank capacities have been reached.
- d. Start a waste gas compressor with suction aligned to containment and discharging to a monitored plant vent.

QUESTION: 017 (1.00)

With an irradiated assembly "full up" on the manipulator crane and maximum design refueling cavity seal leakage, which ONE of the following lists the amount of time required for the refueling bridge radiation levels to reach 10 REM/HR?

- a. 2 minutes
- b. 2 hours
- c. 22 minutes
- d. 22 hours

QUESTION: 018 (1.00)

Plant conditions:

- Reactor power is at 100%.
- Pressurizer pressure control channel (PT-445) has failed LOW.
- Pressurizer pressure controller PC-444J is in automatic.

Which ONE of the following describes the pressurizer PORVs response if channel III (PT-457) subsequently fails HIGH?

- a. PORV PCV-455C opens.
- b. PORV PCV-455C is blocked.
- c. PORVs PCV-455C and PCV-456 open.
- d. PORVs PCV-455C and PCV-456 remain closed.

QUESTION: 019 (1.00)

Which ONE (1) of the following automatic actions will occur as a result of a continuous insertion of an RCC Control Bank per 3-ONOP-28, "Rod Control System Malfunction" while operating at power?

- a. Charging flow increases, pressurizer heaters energize.
- b. Charging flow increases, pressurizer heaters deenergize.
- c. Charging flow decreases, pressurizer heaters deenergize.
- d. Charging flow decreases, pressurizer heaters energize.

QUESTION: 020 (1.00)

Which ONE of the following will cause an Urgent Failure Alarm while recovering a dropped control rod?

- a. Phase failure in the power cabinet.
- b. Regulation failure - current mis-match in the power cabinet.
- c. Multiplex failure - component failure in the power cabinet.
- d. Logic failure - command signals lost in the power cabinet.

QUESTION: 021 (1.00)

Step 14 of EOP-ES-1.3, Transfer to Cold Leg Recirculation, states "Verify Containment sump level is greater than 427 inches".

Which ONE of the following describes the basis for the above setpoint?

- a. To ensure level in the containment sump is high enough to provide adequate suction head for the RHR pumps.
- b. To ensure adequate boric acid is available in the sump to maintain a long term shutdown margin.
- c. To ensure RWST inventory has been transferred to containment sump via RCS.
- d. To ensure maximum water available from the RWST has been used for core cooling.

QUESTION: 022 (1.00)

Unit 3 is in mode 6 with core alterations taking place following an 15 month run at 100% power.

Operators are about to insert an element near the reactor vessel hot leg and have requested temporarily stopping all running RHR pumps.

Which ONE of the following actions is allowed to be taken for these circumstances?

- a. The operating RHR pumps cannot be stopped due decay heat limitations imposed by Technical Specifications.
- b. Technical Specifications permit stopping the RHR pumps for up to one hour provided no RCS dilutions are permitted.
- c. The operating RHR pumps cannot be stopped due to motor re-start limitations and still remain within acceptable Technical Specification time limits.
- d. Technical Specifications allow stopping the RHR pumps indefinitely provided core outlet temperature remains 10 degrees below saturation temperature.

QUESTION: 023 (1.00)

Plant conditions are as follows:

- An ATWS has occurred from an initial reactor power of 100%.
- All power range NI's indicate 12%.
- Steam flow from each S/G is 3.0E6 lbm/hr.

Which ONE of the following IMMEDIATE ACTIONS is required?

- a. Open the Mid and East GCBs.
- b. Trip the turbine at the front standard.
- c. Secure the condenser air ejectors and break condenser vacuum.
- d. Close the main steamline isolation and bypass valves.

QUESTION: 024 (1.00)

While operating in mode 1 offsite power is lost to Unit 3, the sequencer is operating in program 1, loss of off-site power (LOOP); emergency diesel generators operate as designed to re-energize the vital buses.

Which ONE of the following describes the operation and final status of the Intake Cooling Water (ICW) system after all ICW pumps trip on loss of power?

- a. A and B ICW pumps restart after a time delay; the inlet valves to TPCW close diverting full flow to the CCW heat exchangers.
- b. A and B ICW pumps restart immediately; the inlet valves to TPCW close diverting full flow to the CCW heat exchangers.
- c. A and B ICW pumps restart immediately; flow continues to both the CCW and TPCW heat exchangers.
- d. A and B ICW pumps restart after a time delay; flow continues to both the CCW and TPCW heat exchangers.

QUESTION: 025 (1.00)

Which ONE of the following is the lowest level position that may approve Clearance Boundary modifications?

- a. The Nuclear Plant Supervisor.
- b. The Nuclear Watch Engineer.
- c. The Administrative Reactor Control Operator.
- d. The Shift Technical Advisor Section Supervisor.

QUESTION: 026 (1.00)

Which ONE of the following is the reason a nitrogen over pressure is maintained in the Pressurizer Relief Tank?

- a. Maintain correct pre-stress on the rupture disks (outward delta-P).
- b. Reduce the potential for corrosion of the tank internals.
- c. Prevent the formation of an explosive gas mixture in the tank.
- d. Reduce the amount of water needed to quench a safety valve discharge.

QUESTION: 027 (1.00)

Which ONE of the following describes the Control Rod Drive system Rod Control Unit (RCU)?

- a. Automatic rod speed is preset to a constant value of 68 steps per minute.
- b. The RCU generates a rod speed and direction signal in response to 3 error signals.
- c. The automatic system is programmed to respond to a "Rods In" signal only.
- d. The Individual Bank Select switch generates a speed and direction signal to the RCU.

QUESTION: 028 (1.00)

If a control rod bank has a differential reactivity worth of 12.8 PCM/inch, which ONE of the following describes the integral reactivity worth for 5 STEPS of outward rod motion?

- a. 28 PCM
- b. 33 PCM
- c. 40 PCM
- d. 64 PCM

QUESTION: 029 (1.00)

The kinetic energy of an RCP flywheel provides which ONE of the following upon loss of electrical power to the pump?

- a. Prevents DNB in the reactor core.
- b. Limits DNBR to less than 1.3.
- c. Prevents reverse rotation of an idle RCP.
- d. Establishes natural circulation flow direction.

QUESTION: 030 (1.00)

Which ONE of the following describes the operation of the CVCS makeup control system when it is properly aligned for auto-makeup and pressurizer level is less than 17%?

FCV-114A is the Primary Water (PW) Flow Control valve.

FCV-114B is the Volume Control Tank Inlet Stop valve.

FCV-113A is the Boric Acid Flow Control valve.

FCV-113B is the Charging Pump Suction Makeup Stop valve.

- a. A PW pump auto-starts, FCV-114A and FCV-113B open to supply only primary grade water to the charging pump suction header.
- b. A boric acid pump auto-starts, FCV-114A, FCV-113A and FCV-114B open to supply blended makeup to the Volume Control Tank.
- c. Both boric acid pumps and both PW pumps auto-start, FCV-114A, FCV-113A and FCV-114B open to supply blended makeup to the Volume Control Tank.
- d. A boric acid pump auto-starts, FCV-114A, FCV-113A and FCV-113B open to supply blended makeup to the charging pump suction header.

QUESTION: 031 (1.00)

Operators are monitoring grid instability and are in the process of placing a CVCS mixed bed demineralizer with new resin into service when the RO notes the following primary system parameters:

- Reactor power is 101.2% and increasing.
- Tavg is 577 degrees F and increasing.
- Gross megawatts have increased by 2 MWe without operator action.
- Rod control is in manual.

Which ONE of the following describes the most probable cause of these plant conditions?

- a. CV-3-2011, Low Pressure Heater Bypass valve has inadvertently opened.
- b. The new mixed bed demineralizer was not sufficiently washed-in prior to placing it in service.
- c. Turbine Oil system is malfunctioning causing turbine control valves to open.
- d. Grid frequency has dropped and the turbine generator control systems are responding.

QUESTION: 032 (1.00)

Which ONE of the following Safety Injection signals will initiate a "Main Steam Isolation"?

- a. Manual Safety Injection.
- b. Low Pressurizer Pressure.
- c. High Steam Line Flow coincident with Low Steam^{GENERATOR} Pressure.
- d. High Steam Line Differential Pressure coincident with low RCS pressure.

1/27

QUESTION: 033 (1.00)

During a plant shutdown, the low pressurizer pressure and the high steamline delta-P safety injections are blocked by the operator.

Which ONE of the following conditions will unblock the above safety injection?

- a. Tave at 560 degrees F.
- b. Steam pressure at 750 psig.
- c. RCS pressure at 2050 psig.
- d. Main steam line pressure decrease greater than 125 psi/second.

QUESTION: 034 (1.00)

Plant conditions:

- Reactor startup in progress
- Both source range channels indicate $5E+4$ cps
- Intermediate range channel N35 indicates $5E-10$ amps
- Intermediate range channel N36 indicates $5E-11$ amps

Which ONE of the following is the cause of this Intermediate Range Nuclear Instrument channel discrepancy?

- a. N35 is over-compensated
- b. N35 is under-compensated
- c. N36 is over-compensated
- d. N36 is under-compensated

QUESTION: 035 (1.00)

Plant conditions:

- A reactor trip with a loss of all AC power occurred 2 hours ago.
- Core exit thermocouples read approximately 650 degrees F and increasing.
- Steam generator pressure is stable at 815 psig.
- Steam generator steam flow is undetectable.

Which ONE of the following describes plant conditions?

- a. Loss of natural circulation flow has occurred.
- b. Natural circulation flow is increasing.
- c. The reactor core has uncovered and core damage is imminent.
- d. Reactor Coolant System sub-cooling margin is increasing.

QUESTION: 036 (1.00)

Plant conditions:

- ~~A normal containment cooler chill water coil ruptures.~~
- Followed by a design basis LOCA has occurring inside containment.
 - Several fuel assemblies have ruptured.
 - Containment pressure is 49.9 psig.
 - A normal containment cooler water coil ruptures.

(Assume all other systems function normally and operators have taken appropriate actions per the Emergency Operating Procedures.)

Which ONE of the following describes the plant response to these conditions?

- a. Containment Sump level will continue to increase due to Component Cooling Water leaking into containment via the ruptured cooler.
- b. Component Cooling Water Radiation Monitors RE-17A and RE-17B will alarm due to containment radiation release via the ruptured cooler.
- c. Cooling water leakage stops only upon receipt of the Phase "B" isolation signal.
- d. Cooling water leakage stops upon receipt of the Phase "A" isolation signal.

QUESTION: 037 (1.00)

Which ONE of the following describes the expected plant response to an over-current trip of a running condensate pump at 100% power with the 3C condensate pump out of service?

- a. The associated steam generator feed pump will trip and initiate a turbine runback.
- b. The standby steam generator feed pump will automatically start upon trip of the running condensate pump.
- c. CV-3-2011 will automatically open and will maintain adequate suction pressure to run both steam generator feed pumps.
- d. Heater drain pump discharge valves will automatically open to supply adequate suction pressure to the steam generator feed pumps.

QUESTION: 038 (1.00)

Plant conditions:

- Reactor power is 5%.
- S/G 3A level is 78%.
- S/G 3B level is 89%.
- S/G 3C level is 76%.

Which ONE of the following lists AUTOMATIC actions that will result from the above situation?

- a. Turbine trip, Reactor trip, Feed Pump trip.
- b. Feedwater isolation, Turbine trip, Feed Pump trip.
- c. Reactor trip, Feedwater isolation, Feed Pump trip.
- d. Turbine trip, Feedwater isolation, Reactor trip.

QUESTION: 039 (1.00)

Which ONE of the following describes the normal instrument air supply to the Auxiliary Feedwater flow control valves?

- a. Unit 3 Instrument Air supplies train 2 valves on Unit 3 and train 1 valves on Unit 4.
- b. Unit 3 Instrument Air supplies train 1 valves on Unit 3 and train 2 valves on Unit 4.
- c. Unit 4 Instrument Air supplies train 1 on both Units 3 and 4.
- d. Unit 3 Instrument Air supplies train 1 on both Units 3 and 4.

QUESTION: 040 (1.00)

A liquid release is in progress. Which ONE of the following is the automatic system(s) response to an alarm on R-18, Waste Disposal System Liquid Effluent Monitor?

- a. Valves SV-1414, SV-1413 (liquid discharge to the seal wells) and RCV-018 (liquid release isolation valve) will close.
- b. Valves SV-1414, SV-1413 (liquid discharge to the seal wells) will close.
- c. Waste Monitor Tank Pumps will trip terminating the (radioactive waste) discharge.
- d. Valve RCV-018 (liquid release isolation valve) will close.

QUESTION: 041 (1.00)

Which ONE of the following conditions requires immediate action to suspend all additions to the in-service waste gas decay tank?

- a. 65,000 curies of noble gases.
- b. 6% hydrogen gas and 1% oxygen.
- c. 65,000 curies of Xe-133 gas.
- d. 5% hydrogen gas and 5% oxygen.

QUESTION: 042 (1.00)

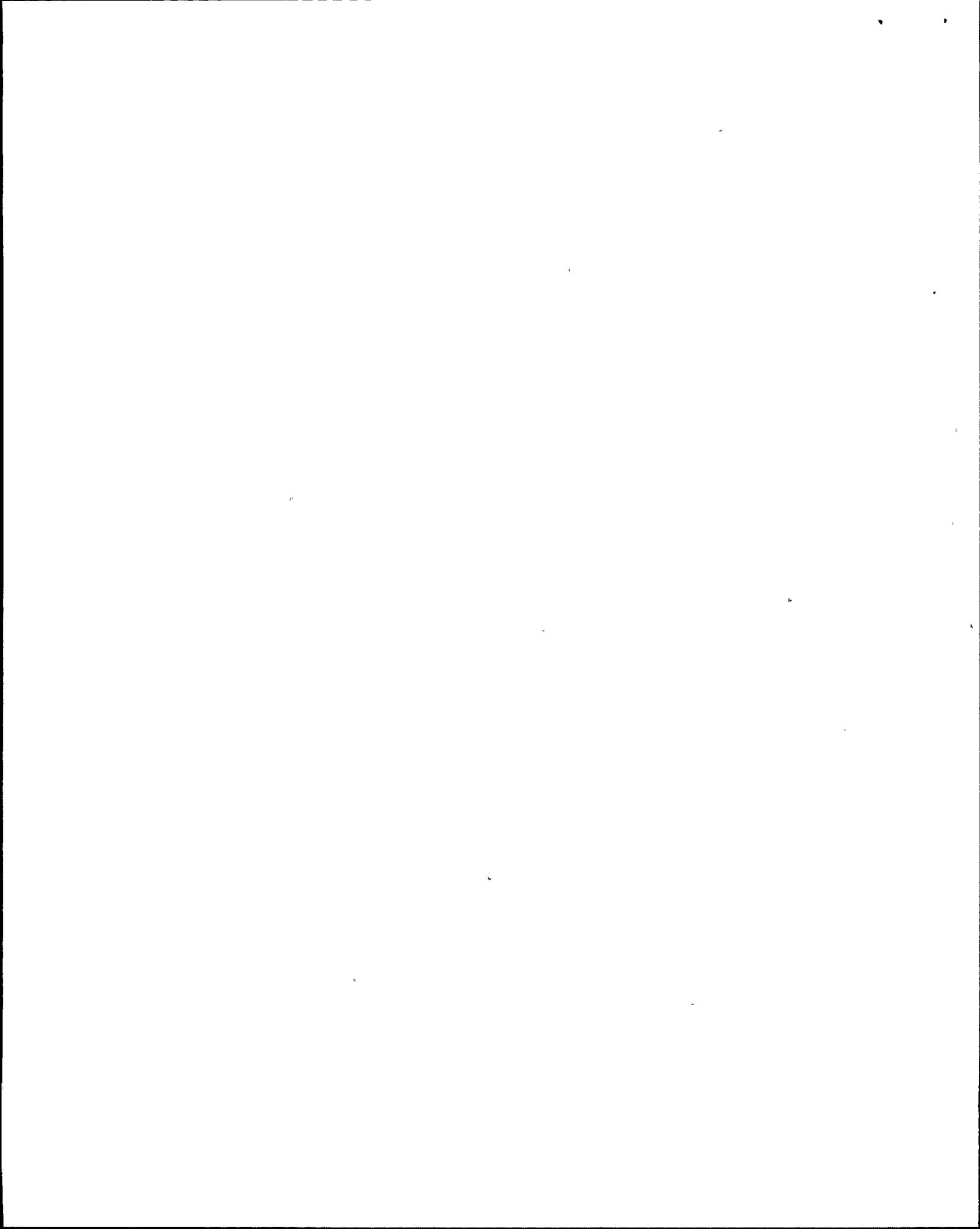
Following an area radiation monitor alarm in the spent fuel pit, which ONE of the following is the required IMMEDIATE action per 0-ONOP-066, High Area Radiation Monitoring System Alarm?

- a. Evaluate process monitors and other ARMs for the affected area.
- b. Confirm validity of alarm and verify other area rad monitors are not indicating an increase in radiation levels.
- c. Announce alarm on the plant page system and notify personnel to clear the affected area.
- d. Evacuate the Auxiliary Building and notify Health Physics to survey the area to determine the source.

QUESTION: 043 (1.00)

Which ONE of the following describes the RHR Pump Alternate Discharge paths on Turkey Point Units 3 and 4?

- a. Loop A (Unit 4 only), Loop B (Both Units), Loop C (Unit 3 only).
- b. Loop A (Unit 3 only), Loop B (Both Units), Loop C (Unit 4 only).
- c. Loop A (Both Units), Loop B (Unit 4 only), Loop C (Unit 3 only).
- d. Loop A (Unit 4 only), Loop B (Unit 3 only), Loop C (Both Units).



QUESTION: 044 (1.00)

Plant conditions:

- Steady state operation at 100% power.
- Pressurizer spray valves PCV-455A and B have just automatically opened.
- The Pressurizer Pressure Controller PC-444A controlling setpoint is then inadvertently increased to 2325 psig.
- Assume a step change in the setpoint occurs and pressurizer pressure control remains in automatic.

Which ONE of the following will be the IMMEDIATE automatic responses of the system ?

- a. Power operated relief valves PCV-455C and PCV-456 open to 50%
- b. Spray valves PCV-455A and B remain open and pressurizer heaters energize.
- c. Spray valves PCV-455A and B close and pressurizer heaters energize.
- d. Power Operated Relief Valves PCV-455C and PCV-456 open and Spray valves PCV-455A and B close.

QUESTION: 045 (1.00)

Plant conditions:

- Reactor power is 99%.
- Pressurizer level is 58%.
- Letdown flow is 60 gpm (One Orifice).
- A charging line leak develops near the charging line containment penetration (outside containment) that diverts ALL charging flow from the line.
- Normal seal injection is maintained.
- Assume NO operator action is taken.

Which ONE of the following statements describes the FINAL pressurizer response?

- a. Pressurizer level decreases to 14.4%, letdown isolates and pressurizer level increases leading to a high level trip at 92%.
- b. Pressurizer pressure increases when the pressurizer backup heaters auto start due to a level deviation, leading to a high pressure trip at 2385 psig.
- c. Pressurizer level decreases, then stabilizes following a reduction of letdown flow due to steam flashing in the regenerative heat exchanger.
- d. Pressurizer level decreases to 14.4%, letdown isolates and pressurizer level continues to decrease leading to a low-low level alarm at 6%.

QUESTION: 046 (1.00)

Unit 3 has tripped and SI has actuated as a result of a LOCA inside containment. The plant safety systems have responded as designed except the 3A HHSI pump exhibits abnormally low amps.

Operators are performing step 17 of EOP-E-0, Reactor Trip or Safety Injection, attempting to verify two Unit 3 HHSI pumps are running.

Which ONE of the following describes the correct operator response required by procedure?

- a. Stop the 3A HHSI pump and continue with the procedure. Unit 4 HHSI pumps will be shutdown subsequently and adequate flow will be delivered by the 3B HHSI pump.
- b. Continue to run the 3A HHSI pump in spite of the apparent sheared shaft to comply with step 17 of E-0.
- c. Stop the 3A HHSI pump and realign Unit 4 HHSI pumps to Unit 3 RWST. Run one Unit 3 HHSI pump and one Unit 4 HHSI pump.
- d. Continue to run the 3A HHSI pump. Maintain HHSI pump alignment in its current configuration to ensure maximum SI flow to the Unit 3 reactor.

QUESTION: 047 (1.00)

Which ONE of the following reactor trips are automatically blocked when power drops below 10%?

- a. High pressurizer pressure (2/3 channels).
- b. Low pressurizer water level (2/3 channels).
- c. Over-temperature delta-T (2/3 loops).
- d. Low reactor coolant flow (2/3 loops).

QUESTION: 048 (1.00)

Which ONE (1) of the following describes the effect on the RCS loop flow instruments of a rupture of a High Pressure loop flow transmitter tap?

- a. Flow indication fails low on all three channels.
- b. Flow indication fails low on only one channel.
- c. Flow indication fails high on all three channels.
- d. Flow indication fails high on only one channel.

QUESTION: 049 (1.00)

Which ONE of the following describes the complete actions a safety injection signal followed by a containment isolation due to a small break LOCA will have on the containment systems?

- a. Close all containment phase B isolation valves, stop containment purge fans, and start the A, B, and C emergency containment coolers (ECCs).
- b. Close all containment phase A isolation valves, stop containment purge fans, and start the A, B, and C ECCs.
- c. Close all containment phase B isolation valves, stop containment purge fans, and stop the A, B, and C ECCs.
- d. Close all containment phase A isolation valves, stop containment purge fans, and stop the A, B, and C ECCs.

QUESTION: 050 (1.00)

Which ONE of the following describes the Spent Fuel Pool Cooling (SFPC) system basic operation and connections to the Spent Fuel Pool (SFP)?

The SFPC pumps normally take a suction on the:

- a. "High" line near the top of the SFP and discharge through a line 1 foot below the top with a 1/2 inch siphon break hole 6 inches below the water level.
- b. "Low" line near the bottom of the SFP and discharge through a line 6 inches below the top with a 1/2 inch siphon break hole 1 foot below the water level.
- c. "High" line 1 foot below the top of the SFP and discharge through a line at the bottom of the SFP with a 1/2 inch siphon break hole 6 inches below the water level.
- d. "Low" line located with a 1/2 inch siphon break hole 1 foot below the water level of the SFP and discharge through a line 1 foot below the top.

QUESTION: 051 (1.00)

Which ONE of the following describes the Safety Design Bases for Steam Generator water inventory during plant operations?

Water inventory is based on:

- a. Supplying sufficient pounds-mass per hour steam production during full power operations.
- b. Limiting the amount of moisture carryover and rate of loading/unloading the turbine generator.
- c. Limiting containment design pressure and RCS cooldown during a steamline break inside containment.
- d. Minimizing pressure differential between the primary (RCS) and secondary (S/G) systems.

QUESTION: 052 (1.00)

Plant conditions:

- Mode 3
- RCS pressure is 2235 psig
- Tave is 545 degrees F, being maintained by the steam dump to condenser operating in the pressure mode.
- Atmospheric Steam Dump Valve control is in automatic at its normal setting.
- All three RCP's are running

If a complete loss of Condenser Vacuum occurs with NO operator actions, RCS Tave will stabilize at which ONE of the following temperatures?

- a. 545 degrees F.
- b. 547 degrees F.
- c. 549 degrees F.
- d. 554 degrees F.

QUESTION: 053 (1.00)

With the plant operating normally at 88% thermal power and all control systems in automatic the feeder breaker to A SGFP trips on overload.

Which ONE of the following describes the plant response to this casualty?

- a. Turbine runback will reduce power, S/G levels restored in automatic.
- b. Turbine runback will reduce power, idle SGFP and standby condensate pump will auto-start, S/G levels will restore in automatic.
- c. S/G levels will decrease until operators reduce power to within the capacity of one SGFP.
- d. S/G levels will be maintained in automatic after idle SGFP auto- starts.

QUESTION: 054 (1.00)

Plant conditions:

- Unit 4 reactor has tripped and safety injection has actuated.
- Off-site power was lost and the 4A and 4B 4KV buses are energized from their respective EDG's.
- SI has been successfully reset from the VPB.

The reactor operator actuates the control room normal stop switch to stop the 4A EDG (Emergency Diesel Generator).

Which ONE of the following describes the response of the 4A EDG?

- a. The EDG continues to run because the EDG output breaker is closed.
- b. The EDG output breaker trips and the EDG stops.
- c. The EDG continues to run until the bus stripping relays are energized.
- d. The EDG continues to run until the bus stripping blocking relays are de-energized.

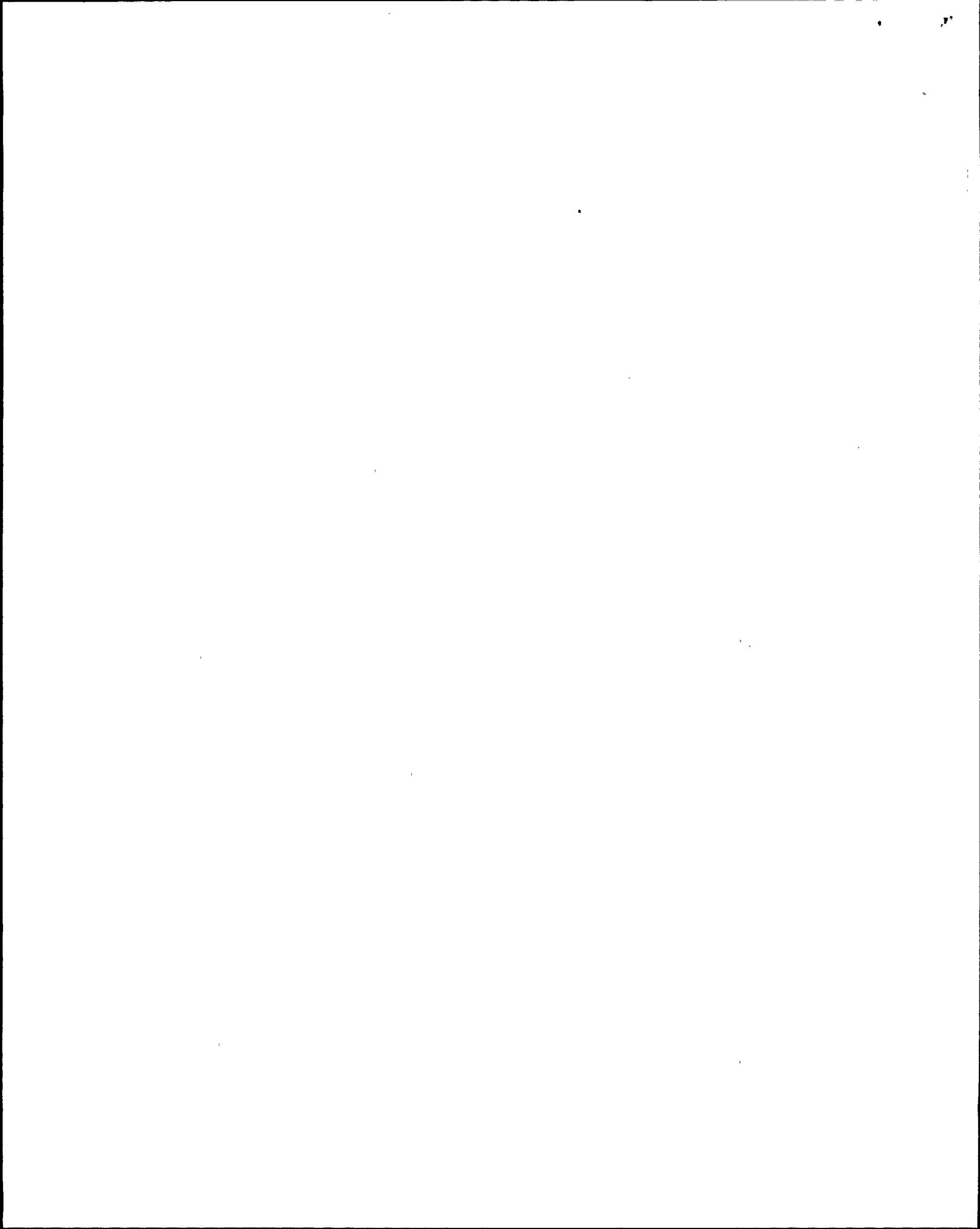
QUESTION: 055 (1.00)

As the on-coming Unit 3 RCO, you have been briefed during shift turnover that a containment purge is in progress.

During your board walk-down you note the R11 and R12 bypass switches on the VPB (HS-3-R-11 and HS-3-R-12) are in the "BYPASS" position.

Which ONE of the following describes the actions you as the Unit 3 RCO are required to take?

- a. Review 0-OP-053, Containment Purge System, to verify the switches are properly positioned for the containment purge.
- b. Stop the purge and report the action to the NPS because R-11 and R-12 trip function has been defeated with a purge in progress.
- c. Check R11 and R12, if either is in alarm stop the purge per the immediate actions of 3-ONOP-067, Radioactive Effluent Release.
- d. Return the bypass switches to "NORMAL" and verify the switches are properly positioned for the containment purge per 3-OP-67, Process Radiation Monitoring System.



QUESTION: 056 (1.00)

Which ONE of the following describes the response (if any) of the Instrument Air System to a Safety Injection signal?

- a. The Instrument Air to containment isolation valve (CV-2803) closes.
- b. Electric air compressors 3CM and 4CM stop, diesel air compressors 3DM and 4DM start.
- c. An SI signal has no direct effect on the system.
- d. Instrument Air is isolated to all non-essential air-operated equipment.

QUESTION: 057 (1.00)

Plant conditions:

- The RCS is being cooled down from Hot Standby to Cold Shutdown.
- The RCS is on RHR cooling.
- Cooldown at the maximum rate is desired.

During a maximum rate cooldown of the RCS, which ONE of the following is the most limiting?

- a. RHR return temperature.
- b. RHR supply temperature.
- c. CCW supply temperature.
- d. CCW return temperature.

QUESTION: 058 (1.00)

Which ONE of the following is the design basis for the combined capacity of the PRT rupture disks?

- a. Both PORVS and one Pressurizer Safety Valve lifting simultaneously.
- b. All three Pressurizer Safety Valves lifting simultaneously.
- c. Both PORVS lifting simultaneously.
- d. Both PORVs and all three Safety Valves lifting simultaneously.

QUESTION: 059 (1.00)

Which ONE of the following conditions will cause the actuation of the steam dump to condenser system? ASSUME the steam dumps are in Tavg mode unless otherwise indicated.

- a. Failure of impulse pressure PT-447 LOW with a coincident Tavg-Tref error signal of 8 deg F.
- b. Failure of BOTH impulse pressure PT-446 and PT-447 HIGH, coincident with a hot leg RTD failed HIGH.
- c. Failure of impulse pressure PT-447 LOW with the steam dump mode selector switch in "manual".
- d. Failure of impulse pressure PT-446 low coincident with a hot leg RTD failed HIGH.

QUESTION: 060 (1.00)

Which ONE of the following provides a turbine trip input to the reactor protection system (RPS) to produce an automatic reactor trip?

- a. 1/2 turbine stop valves closed.
- b. 3/3 turbine control valves closed.
- c. 2/3 turbine auto stop oil pressure switches < 45 psig.
- d. Main generator breaker lockout.

QUESTION: 061 (1.00)

While recovering a dropped rod, if Rod Position Indication (RPI) is lost on the dropped rod, which ONE of the following actions must be performed?

- a. Trip the turbine and reactor.
- b. Determine the rod position by performing an incore flux trace.
- c. Dilute/Borate to restore T_{avg} .
- d. Continue to move the misaligned RCC until the group step counter indicates it is aligned with its group.

QUESTION: 062 (1.00)

Which ONE of the following is the maximum allowed cooldown rate of the lower pump bearing when restoring RCP seal water injection flow or reducing RCP seal water injection temperature?

- a. 0.5 degrees F per minute
- b. 1.0 degrees F per minute
- c. 2.5 degrees F per minute
- d. 5.0 degrees F per minute

QUESTION: 063 (1.00)

Plant conditions:

- A reactor trip has occurred due to a loss of off-site power.
- "3A" and "3B" emergency diesel generators are running and loaded.
- 3 Control bank rods are stuck at 224 steps.
- Both "3A" and "3B" charging pumps are running.

Which ONE of the following is the required operator action(s) to ensure adequate shutdown margin for these conditions?

- a. Place the makeup control switch to the AUTO-after-start position and start a boric acid pump.
- b. Place the makeup control switch to the MANUAL position and start a boric acid pump.
- c. Place the makeup control switch to the STOP position and start a boric acid pump and open emergency borate valve.
- d. Place the makeup control switch to the BORATE position and start a boric acid pump.

QUESTION: 064 (1.00)

Plant conditions:

- RCP MOTOR BEARING COOLING WATER LOW FLOW alarm annunciation.
- CCW SURGE TANK HI/LO LEVEL alarm annunciation.
- CCW flow indication FI-3-626 RCP thermal barrier CCW return indicates normal flow rate.
- RCP "A" CCW flow indication, FI-3-628, indicates abnormally high flow.
- FI-3-677, RCP motor bearing CCW common return indicates lower than normal flow rates.

Which ONE of the following describes the most likely cause for these indications?

A copy of P&ID 5613-M-3030, Sheet 5 is provided for reference.

- a. A CCW leak between the containment supply penetration and the upstream side of the RCPs.
- b. A CCW leak downstream of the RCP bearing oil coolers but upstream of the low flow alarm detector.
- c. An RCS to CCW leak downstream of the thermal barrier heat exchanger but upstream of the flow indication detector.
- d. A CCW leak just upstream of the RCP bearing oil coolers.

QUESTION: 065 (1.00)

Plant conditions:

- Operators have entered 3-EOP-ECA-2.1, Uncontrolled Depressurization of All Steam Generators.
- Cooldown rate is 125 degrees/hour.
- S/G levels range from 1% to 3% NR level.

Which ONE of the following is the **MINIMUM** allowable AFW flow to the Steam Generators in this condition?

- a. 25 gpm to each S/G.
- b. 75 gpm to each S/G.
- c. 300 gpm total flow.
- d. 390 gpm total flow.

QUESTION: 066 (1.00)

Plant conditions:

- Unit 3 is at 35% power increasing to 100% power in accordance with 3-GOP-301, Hot Standby to Power Operation.
- 3-ONOP-014, "Main Condenser Loss of Vacuum" was entered due to Condenser vacuum indication DECREASING.
- The immediate actions of ONOP-014, Main Condenser Loss of Vacuum are complete.
- Condenser vacuum is currently stable at 25 inches of Hg.
- Exhaust Hood Temperature is 228 degrees F and decreasing slowly.

Which ONE of the following actions is applicable per plant procedures for these conditions?

- a. Trip the turbine; trip the reactor; enter 3-EOP-E-0, Reactor Trip or Safety Injection.
- b. Immediately reduce turbine load; enter 3-ONOP-100, Fast Load Reduction.
- c. Stop the power increase and reduce power per 3-GOP-103, Power Operations to Hot Standby.
- d. Stabilize the plant and continue with necessary actions to recover condenser vacuum.

QUESTION: 067 (1.00)

Following a loss of all AC power operators are required to place certain ESF equipment control switches in Pull-to-Lock to defeat automatic start features.

The defeat of the automatic start of ESF equipment is designed to PREVENT which ONE of the following?

- a. An uncontrolled cooldown of the RCS and possible reactor restart.
- b. An uncontrolled depressurization of the RCS.
- c. The unnecessary use of water that may be needed for long term cooldown.
- d. An uncontrolled start of equipment and potential overload of 4KV power supply.

QUESTION: 068 (1.00)

Plant conditions:

- A loss of off-site power has occurred; simultaneously power to 120V vital instrument panel 3P07 was lost.
- Both Unit 3 EDGs have started.

Which ONE of the following actions must the operator perform under the above conditions?

- a. Control 3B steam generator water level by manual control of main feed bypass regulating valve.
- b. Manually perform bus stripping on 4KV bus 3B only.
- c. Manually close failed open Train 1 AFW flow control valves only.
- d. Manually sequence ESF loads onto EDG 3A.

QUESTION: 069 (1.00)

Which ONE of the following conditions will sound an audible alarm on the main fire panel in the control room?

- a. The battery power supply to the panel fails.
- b. Any deluge system is removed from service.
- c. Any red fire alarm lamp or yellow trouble lamp lights.
- d. The RCO sounds the Fire Horn.

QUESTION: 070 (1.00)

Which ONE of the following IMMEDIATE actions is required to be performed by the Unit 3 Reactor Control Operator in the event of a fire burning out of control on the Control Room roof?

- a. Trip the reactor and enter E-0, Reactor Trip and Safety Injection.
- b. Declare the control room uninhabitable, trip the reactor and evacuate the Control Room.
- c. Evacuate the Control Room, then open the reactor trip breakers locally and enter E-0.
- d. Dispatch the Fire Brigade to the Control Room roof via the Plant PA system.

QUESTION: 071 (1.00)

The plant is in Mode 1. Which ONE of the following indicates a loss of containment integrity?

- a. Containment pressure is 50 psig.
- b. Containment pressure is 27 psig and CV-204, letdown isolation valve, stuck open.
- c. Containment pressure is 23 psig and containment spray is not operable.
- d. S/G 3B has both a tube rupture and a stuck open RCS safety valve.

QUESTION: 072 (1.00)

3-EOP-FR-C.1, Response to Inadequate Core Cooling, step 7 directs the operator to verify that Accumulator discharge valves are open.

Per step 12, all steam generators have been depressurized to 80 psig.

Step 13 directs the operator shut the Accumulator discharge valves when the RCS temperature is less than 340 degrees F.

Which ONE of the following describes the reason for shutting the Accumulator discharge valves?

- a. Accumulators are no longer required due to switch-over to cold leg recirculation.
- b. To prevent/minimize Accumulator contamination due to back-leakage.
- c. To prevent/minimize nitrogen injection into the RCS.
- d. To prevent/minimize damage to the accumulators.

QUESTION: 073 (1.00)

Plant conditions:

- A large break LOCA has occurred.
- Several CETs indicate 1300 degrees F.
- All RCPs have been started per EOP-FR-C.1, "Inadequate Core Cooling".

Which ONE of the following conditions would allow the RCPs to be stopped per EOP-FR-C.1, Response to Inadequate Core Cooling?

- a. Two (2) RCS hot leg temperatures indicate 348 deg. F.
- b. ECCS flow is re-established.
- c. RVLMS indicates greater than 0% plenum level.
- d. Core exit thermocouples indicate below 1200 deg. F. and decreasing.

QUESTION: 074 (1.00)

If RCS system specific activity exceeds the limits established by Technical Specification 3.4.8, "Specific Activity," the plant must be placed in HOT STANDBY with Tave less than 500 degrees F within 6 hours.

Which ONE of the following is the reason for cooling the RCS to less than 500 degrees F?

- a. To increase the solubility of gaseous radio-nuclides in the RCS in the event of a LOCA.
- b. To maintain doses to the public acceptably low following a steam generator tube rupture.
- c. To ensure the peak containment pressure will remain below the design pressure in the event of a large break LOCA.
- d. To reduce the effects of a crud burst in the RCS system if an overcooling condition occurs.

QUESTION: 075 (1.00)

The plant is being run back from 75 % power due to the loss of a feedwater pump. Control Bank D, Rod H-12 position remains at 185 steps. Control Bank D, Rod D-8 position is indicating 150 steps and the bank demand is 135 steps. (Assume Rod H-12 is trippable but, immovable).

Which ONE of the following actions is required?

- a. Trip the reactor and implement E-0, "Reactor Trip or Safety Injection".
- b. Place rod control in manual and stabilize the plant by boration/dilution as necessary to maintain Tave equal to Tref.
- c. Immediately initiate and continue blended boration greater than or equal to 16 gpm until shutdown margin is determined.
- d. Initiate emergency boration per 3-ONOP-046.1, Emergency Boration.

QUESTION: 076 (1.00)

Unit 3 is operating at 30% steady state reactor power. A maintenance technician mistakenly pulls the instrument power fuses to PR channel N-42. Then, realizing the error, he immediately reinserts the N-42 fuses and pulls the instrument fuses for channel N-41.

Which ONE of the following describes the reactor protection system response to these actions?

- a. Power Range neutron flux low setpoint reactor trip.
- b. Power Range over-power rod stop is activated.
- c. Power Range dropped rod circuit, turbine runback.
- d. Power Range neutron flux high setpoint reactor trip.

QUESTION: 077 (1.00)

Plant conditions, Unit 3:

- Reactor is shutdown in Mode 3.
- Pressurizer level is 63% and stable.
- RCS System pressure is 1385 psig and stable.
- PRT [Pressurizer Relief Tank] pressure is 6 psig and stable.

If one pressurizer PORV is leaking slightly, which ONE of the following temperatures will be indicated on the Relief Valve discharge RTD (TE-463)?

- a. 247 degrees F.
- b. 263 degrees F.
- c. 275 degrees F.
- d. 282 degrees F.

QUESTION: 078 (1.00)

Plant conditions:

- The Unit has tripped from 100% power due to a loss of off-site electrical power
- The EDGs failed to reenergize their respective 4KV buses.
- Operators are at step 14 of ECA-0.0, Loss of all AC Power.
- MOV-3-626, RCP Seal Cooling Water Outlet Valve is closed as part of step 14.

Which ONE of the following is the basis for closing MOV-3-626?

- a. To prepare the plant for recovery while protecting the RCPs from seal and shaft damage.
- b. To further isolate all potential locations or sources of RCS leakage.
- c. To permit starting a charging pump in the normal mode without concern for cold seal injection flow thermally shocking the RCPs.
- d. To prevent the potential introduction of steam into the main portion of the CCW system.

QUESTION: 079 (1.00)

The operating charging pump fails resulting in a loss of normal charging while operating at 100% power.

Which ONE of the following is the required action after unsuccessful attempts to start a charging pump?

- a. Fully open CV-333, alternate charging valve.
- b. Close CV-204, letdown isolation valve.
- c. Close all orifice isolation valves.
- d. Fully open HCV-121, charging flow to Regenerative heat exchanger.

QUESTION: 080 (1.00)

Plant conditions:

- Reactor startup in progress.
- SRNI N-31 reads $2E4$ cps.
- SRNI N-32 reads $1.7E4$ cps.
- Both IRNIs read $4E-11$ amps.
- SUR is 0 dpm.
- Control Bank D is at 62 steps.

Which ONE of the following describes the required actions if N-32 channel suddenly fails to ZERO when Control Bank D is again withdrawn?

(Assume the reactor does NOT trip.)

- a. Continue the startup using N-31 as the valid channel/instrument.
- b. Stop rod withdrawal; place N-31 Level Trip in BYPASS and continue the startup using the IRNI.
- c. Suspend all reactivity additions and rod motion until the N-32 channel has been repaired.
- d. Insert all control and shutdown banks; maintain current RCS pressure and temperature.

QUESTION: 081 (1.00)

Plant conditions:

- The reactor is being shutdown.
- Reactor power is $6 \times E-6$ amps in the intermediate range NI-36.
- The RCO reports that intermediate range channel NI-35 has not decreased below $7 \times E-6$ amps and appears to be stuck.

Which ONE of the following describes the affect this will have on operator actions during the shutdown?

- a. Manually reset source range instruments when NI-36 decreases below $10 \times E-10$. _____!
- b. If NI-35 / NI-36 mismatch becomes greater than 1 decade then manually trip the reactor.
- c. Insure source range instruments automatically energize when NI-36 decreases below $10 \times E-10$. _____!
- d. Pull control power fuses for NI-35 detector and continue the shutdown.

QUESTION: 082 (1.00)

A steam generator TUBE LEAK will be indicated initially by which ONE of the following?

- a. Rapid decrease in pressurizer level.
- b. Reactor trip on over-temperature delta-T.
- c. Decreased main feed flow to the affected SG.
- d. Increased condenser air ejector radiation monitor readings.

QUESTION: 083 (1.00)

Plant conditions:

- "A" S/G has ruptured tube with MSIV and bypass valves shut.
- "B" S/G MSIV & bypass valves are shut.
- "C" S/G used for cooldown (steam dump to condenser).
- After cooldown and depressurization has been completed, RCS subcooling is 32 deg. F

Which ONE of the following describes ruptured S/G pressure and the reason for this pressure relationship?

- a. Pressure in "A" S/G is equal to the pressure in "C" S/G; minimizes radiological releases.
- b. Pressure in "A" S/G is greater than the pressure in "C" S/G; minimizes radiological releases.
- c. Pressure in "A" S/G is less than the pressure in "B" S/G; ensures RCS sub-cooling when primary-to-secondary leakage is terminated.
- d. Pressure in "A" S/G is less than the pressure in "C" S/G; ensures RCS sub-cooling when primary-to-secondary leakage is terminated.

QUESTION: 084 (1.00)

Plant conditions:

- Unit startup in progress at 10 percent power.
- SGFP "A" is tagged out.
- SGFP "B" trips on low suction pressure, and S/G levels are decreasing rapidly.

Which ONE of the following operator actions is required?

- a. Manually trip the reactor in anticipation of an automatic trip.
- b. Start all three AFW pumps to restore S/G levels.
- c. Start an additional condensate pump then restart SGFP "B" to restore S/G levels.
- d. Start both Standby Steam Generator Feed Pumps (SSGFP) to restore S/G levels.

QUESTION: 085 (1.00)

Both Units 3 and 4 are operating at 100% power when a loss of Buses 3D01 and 3D01A occurs.

Which ONE of the following is the Unit 3 operators immediate action in response to this occurrence?

- a. Verify reactor trip and perform the remaining immediate action steps of E-0.
- b. Position Main Steam Isolation valve 3A, 3B and 3C control switches to close.
- c. Verify reactor trip; the Main Turbine Generator must be manually tripped.
- d. Initiate Fast Load Reduction per 3-ONOP-100.

QUESTION: 086 (1.00)

Plant conditions:

- A waste gas release is in progress per gas release permit.
- The release rate has resulted in a Plant Vent Gaseous (R-14) radiation Monitor HIGH alarm.
- RCV-014 failed to auto-close and all attempts to manually close RCV-014 have failed.
- Operators have entered 3-ONOP-067, Radioactive Effluent Release, and are at step 52.g which reads as follows: "Check airborne release - LESS THAN LIMITS OF ATTACHMENT 4".
- Attachment 4 shows two curves, one is labeled "Greater than 10 x Tech Spec Limit" and, the other is labeled "Greater than 1 x Tech Spec Limit".

Which ONE of the following explains the significance of the two curves?

- a. The curves differentiate the mitigating actions to be taken by the Health Physics Department.
- b. The curves differentiate the mitigating actions to be taken by the Chemistry Department.
- c. The curves differentiate the allowable exposure limits to members of the public or site employees.
- d. The curves differentiate the emergency event classification per EPIP 20101, Duties of the Emergency Coordinator.

QUESTION: 087 (1.00)

Which ONE of the following is the IMMEDIATE action required in response to a high radiation alarm on Area Radiation Monitor System control panel R-30, Channel R-2, U-3 Containment Operating Floor during refueling operations?

- a. Depress the "Alarm Ack" on panel R-30 and announce over the plant page system to evacuate the containment building.
- b. Identify the alarming channel R-2 on panel R-30 and, announce over the plant page system to evacuate the containment building.
- c. Identify the alarming channel R-2, Depress the "Alarm Ack" for channel R-2 only after all personnel have evacuated the containment building.
- d. Identify the alarming channel R-2 on panel R-30, confirm the validity of the alarm and then announce over the plant page system to evacuate the containment building.

QUESTION: 088 (1.00)

Plant conditions:

- The unit is operating at 100% power.
- Charging flow control valve HCV-121 fails closed.

Which ONE of the following reactor trips will occur if NO operator action is taken?

- a. Trip on low RCS pressure.
- b. Trip on high RCS pressure.
- c. Trip on over-power delta-T.
- d. Trip on high pressurizer level.

QUESTION: 089 (1.00)

Plant conditions:

- Preparations are being made for refueling operations
- The refueling cavity is filled with the transfer tube gate valve open.
- Alarm annunciators H-1/1, SFP LO LEVEL and G-9/5, CNTMT SUMP HI LEVEL are in alarm.

Which ONE of the following is the required IMMEDIATE ACTION in response to these conditions?

- a. Verify alarms by checking containment sump level recorder and spent fuel level indication.
- b. Sound the containment evacuation alarm.
- c. Initiate containment ventilation isolation.
- d. Initiate control room ventilation isolation.

QUESTION: 090 (1.00)

Which ONE of the following describes the reason for the Technical Manager performing a Quarterly Review of Temporary System Alterations (TSA)?

- a. To evaluate whether or not the TSA is still necessary.
- b. To ensure the TSA is being observed correctly.
- c. To ensure post maintenance testing has been completed for closed-out TSA's.
- d. To ensure Operations personnel are aware of its existence.

QUESTION: 091 (1.00)

Which ONE of the following describes the person directly responsible to ensure a Temporary Procedure (TP) is up-to-date prior to using it?

- a. The Assistant Nuclear Plant Supervisor.
- b. The Nuclear Watch Engineer.
- c. The Associate Nuclear Plant Engineer.
- d. The temporary procedure user.

QUESTION: 092 (1.00)

Plant conditions, Unit 3:

- The unit is in Mode 1 at 70% power.
- A clearance is in progress for valve repairs.
- Two valves to be positioned are outside.
- It is raining very heavily.

Which ONE of the following describes the action to be taken to position the two valves that are outside?

- a. Position all other components on the Clearance Order first to give the weather a chance to improve.
- b. Hand copy the valve identification and their clearance positions onto a separate list to be taken and used outside.
- c. Use a radio to communicate the valve identification and position to the outside person positioning the valve.
- d. Make a photo-copy or equivalent of the Clearance Order and take the copy into the field to identify and position the valves.

QUESTION: 093 (1.00)

Which ONE of the following describes a restriction on overtime?

- a. If a licensed operator is required to work in excess of eight hours continuously then his duties at the control boards should be restricted to 6 hours or less.
- b. An individual should not be permitted to work more than 16 hours straight including shift turnover time.
- c. There should be at least eight hours break between all work periods not including shift turnover time.
- d. An individual should work no more than seventy-two hours in any seven day period.

QUESTION: 094 (1.00)

Which ONE of the following describes an entry which would be made in the Night Order Book?

- a. Notification of a change in procedures for preparing clearances for air systems.
- b. Guidance for handling situations that have short-term applicability.
- c. Safety related maintenance in progress.
- d. Problems encountered during normal operations.

QUESTION: 095 (1.00)

Plant conditions, Unit 3:

- A plant startup is in progress.
- The RCO logged the time of criticality and pertinent plant data at $10E-8$ amps
- Power was increased 10%.
- The same RCO later in the shift recognized that the boron concentration at the time of criticality was not logged in the RCO log book.

Which ONE of the following states the correct method of logging the boron concentration at the time of criticality?

- a. Enter the boron concentration at the end of the criticality entry previously made.
- b. Enter the boron concentration in the margin by the criticality entry and initial the entry.
- c. Enter "L.Ent.", record the current time, enter the time and date the boron concentration should have been recorded with the value, initial the entry.
- d. Enter "L.Ent.". record the time the boron concentration should have been recorded with the value, initial the entry.

QUESTION: 096 (1.00)

Plant conditions:

- Unit 3 is in Mode 1.
- Unit 4 has been tripped from Mode 1.
- Unit 3 has ONOP-047.1, "Loss of Charging Flow in Modes 1-4" in progress.
- Unit 4 has EOP-E-1, "Loss of Reactor or Secondary Coolant" in progress.

Which ONE of the following describes the proper response of the Third Licensed Operator to this situation?

- a. Assist the Unit 3 RCO in the performance of the event mitigating strategies.
- b. Perform field operator actions as directed by the Unit 4 RCO.
- c. Monitor the Unit 4 Critical Safety Function Status Trees under the supervision of the Nuclear Plant Supervisor.
- d. Read procedure EOP-E-1 and perform Unit 4 event mitigating strategies until relieved by the ANPS or the Nuclear Watch Engineer.

QUESTION: 097 (1.00)

Which ONE of the following lists the color of locks used on Component Cooling Water (CCW) valves that have the potential to cross connect the Unit 3 and the Unit 4 CCW systems?

- a. Orange
- b. Green
- c. Blue
- d. Tan

QUESTION: 098 (1.00)

Which ONE of the following describes a situation in which concurrent dual verification should be used?

- a. A valve lineup is being performed by a trainee under the guidance of a qualified operator.
- b. The position of a manual valve operated by a reach rod in a high radiation area is to be verified.
- c. The position of a Motor Operated Valve (MOV) is to be verified by monitoring the flow rate through the valve.
- d. A valve lineup is being performed to restore the AFW feed flow control valve neutral alignment during power operation.

QUESTION: 099 (1.00)

Which ONE of the following describes the purpose of the log entry when a Human Clearance is used?

- a. To ensure that anyone assuming Unit Duties will be aware of the Human Clearance and the associated boundaries.
- b. To ensure that the use of a Human Clearance is documented in the event of a casualty resulting from its use.
- c. To document the identity of the Human Clearance for further clearance reference.
- d. To document that the Human Clearance has been briefed on his duties and fully understands the boundaries.

QUESTION: 100 (1.00)

Which ONE of the following states the reason for using the back of the hand when checking equipment temperature?

- a. The back of the hand is more easily exposed when wearing gloves.
- b. Decontamination of skin on the back of the hand is easier than the palm.
- c. The muscular contraction in the event of an electrical shock would pull the hand away.
- d. A burn injury to the back of an employee's hand is will result in less lost work.

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

RO ANSWER KEY

ANSWER KEY

MULTIPLE CHOICE

001	d	024	d
002	b	025	a
003	b	026	c
004	c	027	c
005	b	028	c
006	a	029	a
007	d	030	d
008	b	031	b
009	d	032	c
010	b	033	c
011	c	034	c
012	c	035	a
013	a	036	d
014	d	037	a
015	c	038	b
016	b	039	a
017	c	040	d
018	d	041	d
019	a	042	c
020	b	043	a
021	a	044	c
022	b	045	a
023	d	046	c

ANSWER KEY

MULTIPLE CHOICE

047 d	070 b <i>or d. ✓</i>
048 a	071 b
049 b	072 c
050 a	073 a
051 c	074 b
052 b	075 b
053 a	076 b
054 a	077 b
055 b	078 d
056 c	079 c
057 c	080 d
058 b	081 a
059 a	082 d
060 c	083 b
061 b	084 a
062 b	085 a
063 c	086 d
064 b	087 b
065 a	088 d
066 d	089 b
067 d	090 a
068 d	091 d
069 c <i>or a. ✓</i>	092 d

ANSWER KEY

MULTIPLE CHOICE

- 093 d
- 094 d or b. *ff*
- 095 d
- 096 a
- 097 b
- 098 d
- 099 a
- 100 c

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

20

ar a. ps
ar d. ps

Section _____

Full Name _____

See _____

ar b. ps



FPL

TURKEY POINT PLANT
NUCLEAR TRAINING
DEPARTMENT

