U.S. NUCLEAR REGULATORY COMMISSION
OPERATOR LICENSING EXAMINATION REPORT

Examination Report No.:	92-08 (OL)
Facility Docket No.:	50-354
Facility License No.:	NPF-57
Licensee:	Public Service Electric and Gas Company Post Office Box 236 Hancocks Bridge, New Jersey 08038
Facility:	Hope Creek
Examination Dates:	June 8 - 12, 1992
Examiners:	R. Conte, Chief, BWR Section S. Stewart, Operation Engineer J. Hammer, Examiner, PNL M. Mitchell, Examiner, PNL
Chief Examiner:	Carl Sisco 7/4/92 C. Sisco, Operations Engineer Date
Approved by:	Richard J Conte 7/6/92 Richard J. Conte, Chief Date BWR Section, Operations Branch DRS

EXAMINATION SUMMARY

Initial examinations were administered to four SRO upgrade and two SRO instant candidates. In addition, an operating (retake) examination was administered to one RO and a written (retake) examination was administered to an additional RO applicant. All applicants were well prepared and passed the examinations. The facility staff demonstrated considerable technical expertise and cooperation with the NRC Examiners during the examination preparation and administration.

Unresolved Item 354/89-12-01 (OL) was CLOSED. This item concerned the effectiveness of the requalification program corrective actions. Based on a review of the facility's documentation, this item is closed. Section 4.0 contains the details of this item.

Unresolved Item 50-354/90-18-01 (OL) remains open. This item concerns the technical adequacy of deviations from the Emergency Procedure Guidelines. The facility stated the procedures would be revised, validated and verified as appropriate by November, 1992. This item remains OPEN pending additional regulatory review.

DETAILS

1.0 INTRODUCTION AND OVERVIEW

The NRC examiners administered initial examinations to four SRO upgrade and two SRO instant applicants. In addition, an operating (retake) examination was administered to one RO and a written (retake) examination was administered to an additional RO applicant. The examinations were administered in accordance with NUREG 1021, Examiner Standards, Revision 6. The results of the exar ination are summarized below:

	SRO Pass/Fail	RO Pass/Fail
Written	6/0	1/0
Operating	6/0	1/0
Overall	6/0	2/0

2.0 PREEXAMINATION ACTIVITIES

The facility reviewed the written examinations in the facility training center on May 26, 1992. The review team included the Principal Training Supervisor, two Senior Training Instructors, and a licensed Senior Reactor Operator from the operations group. On May 28, 1992, the simulator scenarios used for the operating section of the examinations were validated on the facility's simulator. Facility staff who were involved with these reviews signed security agreements to ensure that the examination was not compromised.

3.0 EXAMINATION-RELATED FINDINGS, OBSERVATIONS AND CONCLUSIONS

The following is a summary of the strengths and weaknesses noted during examination administration. This information is being provided to aid the licensee in upgrading their training program.

3.1 Written Section

The following subjects were missed by at least half of the SRO candidates, indicating a weak performance in these areas:

- Knowledge of ALARA review and approval for work activities with an anticipated exposure of 27 person-rem.

- Knowledge of the scram functions required to be operable with the mode

switch in Refuel.

- Knowledge of the basis for the 90 minute delay imposed on the containment hydrogen/oxygen monitoring when an analyzer is placed in operation.

- Knowledge of the number of safety relief valves that will actuate at 1050 psig when plant control has been established at the remote shutdown panel.

3.2 **Walk-Through Section**

No generic weaknesses were noted with respect to the candidates performance during the walk-through section of the examinations. The NRC Examiners noted the use of multiple procedures to arrive at decisions necessary to solve complex problems was a strength demonstrated by all applicants.

3.3 **Simulator Section**

Strengths

The demonstrated ability of Control Room Command function by the SRO's.

The demonstration of teamwork and effective communications by all applicants.

The use of multiple procedures to arrive at decisions necessary to solve complex problems was a strength demonstrated by all applicants.

Weaknesses

The NRC Examiners identified isolated instances of individual weaknesses; however, generic weaknesses were not observed.

3.4 **Other Observations**

The Examiners noted the material condition of the plant was outstanding. Access into the plant and through the radiation control areas was uneventful. The control room atmosphere was conducive to the conduct of the examinations. The quality of the reference materials used for examination preparation was very good.

The technical abilities and cooperation of the training staff during the examination preparation and administration, especially during the simulator examinations, is a training program strength.

3.5 Summary/Conclusions

The use of multiple procedures to arrive at decisions necessary to solve complex problems was a strength demonstrated by all applicants. In addition, the applicants demonstrated abilities of control room command function, teamwork and effective communications was a strength. Isolated instances of individual weaknesses were observed; however, generic weaknesses were not observed. The NRC Examiners concluded the applicants were well prepared for the examinations.

4.0 LICENSEE ACTIONS ON PREVIOUSLY IDENTIFIED FINDINGS

(CLOSED) Unresolved Item (354/89-12-01): This item concerned weaknesses in the procedural guidance necessary to prepare, grade, review and analyze the results of licensed operator requalification examinations.

During the week of May 25, 1992, the inspectors reviewed a training department document "Guidelines For Developing and Conducting Licensed Operator Requalification Examinations". Based on the review, the inspectors determined the facility has provided adequate procedural guidance to ensure quality in the preparation, grading, and analyzing of results of requalification examinations. This item is CLOSED.

(OPEN) Unresolved Item (354/90-18-01): This Item concerns the technical adequacy of deviations which the facility has taken from the Emergency Procedures Guidelines (EPGs). The EPGs are used to develop symptom based Emergency Operating Procedures (EOPs). The deviations are in the following areas:

The EPGs states the entry condition into the RPV Control procedure (EOP-101) at a reactor level of +12.5 inches. The facility enters the procedure at a reactor level of -38 inches.

The EPGs states to include the reactor water cleanup system, high pressure coolant injection (HPCI), and reactor core isolation cooling systems into the Secondary Containment Control procedure (EOP-103) as a possible primary system discharging into the secondary containment. The facility has excluded these systems from the procedure. Following additional review by the facility staff, the licensee has agreed to include these systems in EOP-103.

In addition, the facility's procedural guidance on the necessity to terminate and prevent the injection of the HPCI system during an Anticipated Transient Without a Scram event is not clearly stated.

The facility stated the EOPs would be revised, validated and verified as appropriate in November, 1992. This item remains OPEN pending additional regulatory review.

5.0 EXIT MEETING

An exit meeting was conducted June 12, 1992, following the administration of the examinations. Exit attendees are listed in Attachment 5. The facility presented their comments on the written examinations (Attachment 3). Generic findings regarding the applicants performance and training program strengths were discussed. Unresolved Item 50-354/89-12-01 was closed. Unresolved Item 50-354/90-18-01 was discussed briefly, but remains OPEN until the Emergency Operating Procedures are revised and the changes reviewed by NRC staff.

ATTACHMENT 3
Facility Comments and NRC Resolution

Comment Number 1;
SRO question number 11 involved classification of an emergency event. The facility commented that the stem of the question led to unnecessary confusion in selecting the correct response. The facility recommended that two answers, "b" or "c" be considered correct.

NRC Resolution;
Comment accepted

Comment Number 2;
SRO question number 26 involved the operation of ADS circuitry when specified plant conditions exist. The facility commented that the plant conditions and operator actions specified were insufficient to distinguish between two of the answers provided. The facility recommended that two answers, "a" or "b" be considered correct.

NRC Resolution;
Comment accepted

Comment Number 3;
SRO question number 27 involved the operation of ADS circuitry when specified plant conditions exist. The facility commented that the plant conditions specified in the question were insufficient to support any of the answers. The facility recommended that the question be deleted from the examination.

NRC Resolution;
Comment accepted

Comment Number 4;
SRO question number 73 involved operation of safety relief valves once emergency transfer switches had been placed in the "emergency" position. The facility commented that only one SRV will respond to Low-Low Set Logic with control transferred to the remote shutdown panel. The facility recommended that answer "b" only be accepted as the correct answer.

NRC Resolution;
The typographical error of the answer key was revised to answer "b".

Comment Number 5;
SRO question number 77 involved the basis for the operator tripping the main turbine following a reactor scram. The facility commented that the turbine is tripped at 50 MWe to ensure both that reactor heat has been dissipated and to prevent reliance on an automatic actuation on reverse power. The facility recommended that two answers, "a" or "c" be considered correct.

Attachment 3 (Cont.)

Facility Comments and NRC Resolution

NRC Resolution;
Comment accepted

Comment Number 6;
RO question number 99 involved the generation of hydrogen following a reactor accident. The facility commented that answer "a" was the only possible correct answer. The facility recommended that answer "a" be accepted as correct.

NRC Resolution;
The typographical error of the answer key was revised to answer "a".

ATTACHMENT 4

SIMULATION FACILITY REPORT

Facility License: NPF-57

Facility Docket No.: 50-354

Operating Tests Administered on: June 9, 1992

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

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

ITEM	DESCRIPTION

There were no observations of simulator deficiencies.

ATTACHMENT 5

Licensee Personnel

J. Hagan	General Manager, Hope Creek
R. Hovey	Operations Manager, Hope Creek
A. Orticelle	Manager, Nuclear Training
B. Gott	Principal Training Supervisor
G. Mecchi	Principal Trainer
M. Cirelly	Licensing Engineer
B. Berg	Senior Staff Engineer

NRC Personnel

R. Conte	Chief, BWR Section
C. Sisco	Operations Engineer, Chief Examiner
S. Stewart	Operations Engineer
K. Lathrop	Resident Inspector, Hope Creek

Nuclear Regulatory Commission
Operator Licensing
Examination

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

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

CANDIDATE'S NAME:_____

FACILITY: Hope Creek 1

REACTOR TYPE: BWR-GE4

DATE ADMINISTERED: 92/06/08

INSTRUCTIONS TO CANDIDATE:

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

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

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

_____
Candidate's Signature

A N S W E R S H E E T

Multiple Choice (Circle or X your choice)

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

MULTIPLE CHOICE

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

A N S W E R S H E E T

Multiple Choice (Circle or X your choice)

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

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

A N S W E R S H E E T

Multiple Choice (Circle or X your choice)

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

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

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

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)

In accordance with NC.NA-AP.ZZ-0005(Q) "Station Operating Practices," SELECT the normal complement of Fire Brigade personnel for power operations.

a. 3

b. 4

c. 5

d. 6

QUESTION: 002 (1.00)

A normally locked-open, manual valve has been positioned from the shut position to the open position during the completion of a valve lineup. Which of the following is a required action for signing a SECOND verification that the valve is in its normal locked-open position?

a. observe the initial positioner opening the valve and installing the locking device

b. receive a verbal report from the initial positioner that the valve has been opened, then install the locking device

c. physically move the valve in the closed direction enough to ensure that the valve is open, then install the locking device

d. physically move the valve in the closed position without removing the locking device, only enough to verify movement

QUESTION: 003 (1.00)

Using Attachment 3 of NC.AP.ZZ-005(Q),[attached as Figure 1], which of the following specifies the areas and condition where the operator "at the controls" is permitted during reactor operation?

a. Area 1 to receive NSS approval to bypass an APRM

b. Area 2 to brief the SNSS of plant conditions during a plant fire

c. Area 3 to second verify a red blocking tag

d. Area 3 to respond to a Radiation Monitoring Alarm

QUESTION: 004 (1.00)

Which of the following is a tag which unconditionally, blocks and prohibits the operation of equipment bearing the tag?

a. Red Blocking Tag

b. Yellow Permissive Tag

c. Worker's Blocking Tag

d. White Caution Tag

QUESTION: 005 (1.00)

A whole body frisk is to be performed using a RM-14/HP-210 "FRISKER". Which of the following is a proper practice to follow in performing the frisk?

a. Verify the frisker is on the X10 scale

b. Complete the frisk in about one minute

c. Ensure a background reading of 300 cpm or less

d. The probe is held at one inch from the surface being surveyed

QUESTION: 006 (1.00)

Which of the following is a precaution to be followed in the safe storage of compressed gas cylinders?

a. Full cylinders shall be stored in a horizontal position

b. Cylinders shall be protected from freezing temperatures

c. Empty cylinders shall be stored with the outlet valve open

d. Cylinders may be stored outdoors, but shall be protected from the ground beneath

QUESTION: 007 (1.00)

Which one of the following describes a potential hazard associated with the failure of Battery Room Ventilation during battery charging?

a. Buildup of hazardous lead sulfate (PbSO4) dust on Battery Room components

b. Explosive hydrogen in air mixture in the Battery Room

c. Electrical fire caused when moisture condenses across battery terminals

d. Heat induced cracking of the battery cells

QUESTION: 008 (1.00)

Which of the following color codes is used by SPDS to indicate that the first alarm point only [for example, low] has been exceeded for a parameter consisting of two alarm points [low and low-low]?

a. green

b. yellow

c. red

d. white

QUESTION: 009 (1.00)

The following plant conditions exist:

Reactor startup is in progress
Recirculation flow transient has occurred
Reactor power is 53% and constant
Core flow is 36%

Given the Power to Flow Map [attached as Figure 2], which of the following actions is appropriate to ensure core stability?

a. Insert control rods in accordance with the Rod Pull Listing to reduce power below 50%

b. Increase recirculation pump speed to greater than 45%

c. Reactor startup may continue with careful monitoring of both IRMs and APRMs

d. The reactor must be MANUALLY SCRAMMED

QUESTION: 010 (1.00)

Which one of the following is the MINIMUM emergency event classification in which the entire emergency response organization is required to be activated, including manning of the TSC and EOF?

a. Unusual Event

b. Alert

c. Site Area Emergency

d. General Emergency

QUESTION: 011 (1.00)

Which one of the following modifications requires implementation of NC.NA-AP.ZZ-0013 "Control of Temporary Modifications", including a 10CFR50.59 Safety Review prior to implementation?

a. Connection of a sample tube to a sampling connection to obtain a condensate sample

b. Hanging of lead shielding over a radioactive "hot spot" during the conduct of maintainence on a nearby component

c. Installation of a pressure gauge on an instrument tap during the conduct of a system pressure test

d. Hookup of an air supply hose to a station air manifold during maintainence

QUESTION: 012 (1.00)

The following plant conditions exist:

Reactor Power is 83 %
Four Circulating Water pumps are operating
Condenser pressure is 2.8 inches HgA

A Circulating Water pump trips causing Condenser pressure to instantaneously increase from 4.2 to 4.8 inches HgA. Which one of the following describes the response of the Recirculation Flow Control System?

a. The scoop tube will lockup [brake]

b. An intermediate runback [Speed limiter #2 to 45%] will occur

c. A full runback [Speed limiter #1 to 30%] will occur

d. The recirculation drive motor breaker will trip

QUESTION: 013 (1.00)

The following plant conditions exist:

A reactor transient is in progress
Drywell pressure is 3.0 psig

High Reactor Vessel water level (54 inches) causes the HPCI turbine to trip and water level to drop. Which of the following will cause HPCI to inject?

a. Reactor Vessel water level decreases to 12.5 inches

b. Level 8 seal-in pushbutton is depressed

c. HPCI Booster pump suction pressure drops below 15 inches Hg

d. Reactor Vessel water level decreases to -30 inches

QUESTION: 014 (1.00)

The following plant conditions exist:

A reactor transient is in progress
Drywell Pressure is 2.2 psig

The HPCI "TURBINE TRIP" manual pushbutton is depressed. Which of the following states a response of the HPCI system?

a. HPCI inboard steam supply valve, HV-F002 and the warmup line isolation valves will shut, the turbine will trip, and the isolation valve control switches must be taken out of OPEN and placed back in OPEN before release of the TRIP pushbutton will allow HPCI restart

b. HPCI turbine steam stop valve, FV-4880, only, will shut, but will reopen and injection will reinitiate when the TRIP pushbutton is released

c. HPCI turbine steam stop valve, FV-4880, the pump minimum flow valve, HV-F012, as well as both discharge valves to core spray and feedwater shut, but will reopen and injection will reinitiate when the TRIP pushbutton is released

d. HPCI turbine steam stop, FV-4880, only, will shut, and must be manually reopened to reinitiate injection after the TRIP pushbutton is released

QUESTION: 015 (1.00)

The following plant conditions exist:

A reactor transient is in progress
Drywell Pressure is 2.8 psig
Reactor pressure is 500 psig

Which of the following states the operational lineup of Core Spray ?

a. Four pumps are running with suction from the CST, both upstream and downstream injection valves [F004A/B and F005A/B] are open, flow is into the reactor thru the Core Spray Spargers

b. Four pumps are running with suction from the CST, upstream injection valves [F004A/B] are open, downstream injection valves [F005A/B] are closed, flow is thru the minimum flow lines back to the CST

c. Four pumps are running with suction from the Torus, upstream injection valves [F004A/B] are open, downstream injection valves [F005A/B] are closed, flow is thru the minimum flow lines to the Suppression Pool

d. Four pumps are running with suction from the Torus, both upstream and downstream injection valves [F004A/B and F005A/B] are open, flow is into reactor thru the Core Spray Spargers

QUESTION: 016 (1.00)

The following plant conditions exist:

Loss of offsite power [LOP] has occurred
Standby Diesel Generator D failed to start

The NSS has ordered that boron be injected into the reactor using Standby Liquid Control. Which of the following states the electrical availability of SLC for injection?

a. Both SLC pumps and both squib valves

b. SLC pump A and squib valve F004A ONLY

c. SLC pump B and squib valve F004B ONLY

d. NEITHER SLC pump is available

QUESTION: 017 (1.00)

The Reactor Mode Switch is in the REFUEL position. Which of the following Scram functions is REQUIRED?

a. Main steam line Hi radiation

b. Hi Drywell pressure

c. APRM Hi neutron flux [15%]

d. Reactor vessel water level, Low Level 3

QUESTION: 018 (1.00)

Which one of the following will cause the APRM A "UPSC TR OR INOP" [red] status lite to actuate?

a. APRM A bypassed

b. less than 2 LPRM inputs for level C to APRM A

c. APRM power less than 4 percent

d. less than 14 LPRM inputs to APRM A

QUESTION: 019 (1.00)

The following plant conditions exist:

A steam line break has occurred
ECCS injection has occurred
Vessel shell temperature is 95 degrees F
Vessel head temperature is 101 degrees F
Recirculation pump A is operating

Which of the following reactor vessel level instruments would provide the most accurate indication of vessel level, without correction?

a. Wide Range

b. Upset Range

c. Shutdown Range

d. Fuel Zone Range

QUESTION: 020 (1.00)

In which of the following RCIC trips, is local operation of the trip mechanism required to restore RCIC to operation?

a. Mechanical Overspeed at 125% of 4500 RPM

b. Hi turbine exhaust pressure

c. Turbine trip pushbutton depressed

d. Reactor vessel Hi level 8

QUESTION: 021 (1.00)

The following plant conditions exist:

A reactor transient is in progress
Drywell Pressure is 2.1 psig and increasing
Reactor level is -136 inches and dropping
RHR pumps A and C are running
100 seconds have timed out on the ADS timer

The ADS "INIT AND SEAL IN RESET" pushbutton is depressed. Assuming no change in plant conditions, which of the following identifies the status of ADS?

a. ADS will initiate in 5 seconds

b. ADS will initiate in 105 seconds

c. ADS will initiate in 5 minutes

d. ADS will not auto-initiate

QUESTION: 022 (1.00)

The following plant conditions exist:

A reactor transient is in progress
Drywell pressure is 1.69 psig
Reactor level is -140 inches
30 seconds have timed on the ADS timer

At 90 seconds on the ADS timer, Drywell pressure has been reduced to 1.6 psig. Which of the following states the response of ADS to plant conditions?

a. ADS will not auto-actuate

b. ADS will auto-actuate in 15 seconds

c. ADS will auto-actuate in 3.5 minutes

d. ADS will auto-actuate in 5 minutes

QUESTION: 023 (1.00)

An ADS-SRV has actuated and has shut. Which of the following would be a consequence if the associated SRV tailpipe vacuum breaker was stuck in place and would not actuate?

a. Damage to the T-Quencher during a subsequent ADS actuation

b. Drift of the ADS lift setpoint

c. Corrosion of the ADS valve internals

d. Torus atmosphere fills the tailpipe after ADS actuation

QUESTION: 024 (1.00)

Which of the following is a function of the Torus-to-Drywell Vacuum Breakers?

a. Prevents Torus pressure from damaging the drywell after a LOCA

b. Allow non-condensible gasses to enter the drywell to prevent exceeding the drywell design external pressure limit

c. To allow hot liquid to enter the Torus during the blowdown phase of a LOCA

d. Prevent the drawing of Torus water into the drywell vents during steam condensation after a LOCA

QUESTION: 025 (1.00)

A limitation stated in HC.OP-SO.GS-0002, HYDROGEN/OXYGEN ANALYZER SYSTEM OPERATION, states that when changing the system from STANDBY to ANALYZE, 90 minutes shall be allowed. Which of the following is the basis for this limitation?

a. To permit the analyzers to warmup

b. To ensure adequate containment atmosphere mixing prior to sampling

c. To ensure the sample being analyzed is representative of containment conditions

d. To allow chemistry technicians time to calibrate the analyzer

QUESTION: 026 (1.00)

Using the attached Figure 4, which of the following describes the Instrumentation Status indicated by flashing of the Channel A, Amber, Containment Isln Man Initiation, TRIPPED, . te?

a. Half trip of PCIS Channel A from Core Spray logic

b. PCIS Channel A isolation from Level 2 logic

c. Half trip of A inboard and outboard MSIVs

d. Isolation of A inboard MSIVs

QUESTION: 027 (1.00)

The following plant conditions exist:

OP-EO.ZZ-102A, Primary Containment Control, is being implemented
Loop A of RHR is being aligned for Drywell Spray.

Which one of the following provides the suction source for the A RHR pump?

a. Spent Fuel Pool

b. B Loop Reactor Recirculation

c. Condensate Storage Tank

d. Torus Water

QUESTION: 028 (1.00)

The following plant conditions exist:

Control has been established at the RSP
All Emergency Transfer Switches have been placed in EMERGENCY
Plant pressure is 1050 psig.

Which of the following states the number of Safety Relief Valves that open in response to the high pressure?

a. None

b. 1

c. 2

d. 3

QUESTION: 029 (1.00)

The following plant conditions exist:

Reactor Power is 88 percent
Equilibrium Xenon exists

The Steam Throttle Pressure to the A EHC regulator fails downscale. Which of the following states the resulting affect of the failure on reactor pressure? [See attached Figure 5, EHC Logic]

a. Pressure increases by 3 psig

b. Pressure decreases by 3 psig

c. Pressure increases causing a reactor scram

d. Pressure decreases causing an MSIV isolation

QUESTION: 030 (1.00)

Which of the following states the consequence to plant operation of the failure of the Setpoint Set-Down feature of Reactor Water Level Control, assuming a reactor scram has occurred ?

a. Reactor feedpumps trip on overspeed

b. Cavitation of the Reactor Recirculation pumps

c. Reactor feedpumps trip on high reactor level

d. Group 1 isolation causes loss of the main condenser as a heat sink

QUESTION: 031 (1.00)

The following plant conditions exist:

Reactor Power is 94 percent
Reactor Water Level Control Channel A is selected
Master Level Controller is in AUTO

A small leak develops through the channel A level detector equalizing line. Which of the following states a response of the Reactor Water Level Control system to the leak?

a. Actual reactor water level will increase resulting in a High Level Alarm

b. The reactor feed pump will lock and actual reactor level will remain unchanged

c. A recirculation pump runback will occur

d. Actual reactor water level will fall resulting in a lower indicated Channel B level

QUESTION: 032 (1.00)

The following plant conditions exist:

Refueling is in progress
All RBVS and RBVE fans are running

Refuel floor ventilation exhaust Hi-Hi radiation occurs. Which of the following states the lineup of containment ventilation?

a. All RBVS and RBVE fans trip, 6 FRVS recirc fans start

b. All RBVS and RBVE fans trip, 4 FRVS recirc fans start

c. The C RBVS and RBVE fans continues to operate, 4 FRVS recirc fans start

d. The C RBVS and RBVE fans continues to operate, 6 FRVS recirc fans start

QUESTION: 033 (1.00)

Which of the following states the MINIMUM number of independent cold diesel engine starts provided by the Two Air Receiver Tanks associated with each EDG?

a. 3

b. 5

c. 7

d. 9

QUESTION: 034 (1.00)

Using the attached Figure 6, CRD Hydraulic System, which of the following is the Directional Control Valve NOT used during the a control rod Insert?

a. 120

b. 121

c. 122

d. 123

QUESTION: 035 (1.00)

During a reactor startup, the reactor engineer requests that a control rod be continuously withdrawn from the full in to the full out position. Which one of the following describes the operator actions necessary to perform this continuous withdrawal?

a. Depress and hold the WITHDRAW pushbutton

b. Depress and hold the CONTINUOUS WITHDRAW pushbutton

c. Depress and hold the ROD DRIFT RESET and the CONTINUOUS WITHDRAW pushbuttons

d. Depress and hold the WITHDRAW and CONTINUOUS WITHDRAW pushbuttons

QUESTION: 036 (1.00)

The following plant conditions exist:

Reactor startup is in progress
Next rod pull is step 341, sheet 19, attached as Figure 7
The operator mistakenly selects control rod 34-27,[step 342].
Reactor power is 13 percent

If an RSCS failure to limit rod motion occurs, which of the following is the MAXIMUM position that rod 34-27 can be pulled?

a. Notch 08, [no rod motion will occur]

b. Notch 12

c. Notch 24

d. Notch 48, [no rod block will be activated]

QUESTION: 037 (1.00)

The following plant conditions exist:

Reactor startup is in progress
Next rod pull is Sheet 33, step 574, attached as Figure 8
APRM power is 22 percent
Total steam flow is 21 percent
Feedwater Control is in manual
Turbine first stage pressure channel A is 22 percent
Turbine first stage pressure channel B is 18 percent

The operator selects rod 46-15 and begins the rod pull. Which of the following states the MAXIMUM position and expected indication to which the selected rod can be pulled?

a. Position 04 with an RWM block

b. Position 06 with an RWM block

c. Position 48 with an RWM WITHDRAW ERROR alarm

d. Position 04 with an RSCS WITHDRAW BLOCK

QUESTION: 038 (1.00)

A reactor transient causes water level to fall to -38 inches. Which of the following states the result of -38 inch reactor level on the reactor recirculation system?

a. The scoop tube positioner will runback to 30 percent and then the positioner will lock

b. Both the generator drive motor breaker and the recirculation pump power supply breaker [RPT] will open

c. Both the recirculation pump power supply breaker [RPT] and the generator field breaker will open

d. The scoop tube positioner will runback to 30 percent and then the generator drive motor breaker will open

QUESTION: 039 (1.00)

The following plant conditions exist:

Reactor power is 84 percent
Reactor Water Cleanup is in a normal lineup
RWCU isolation valve, HVF0004, is failed open and will not shut

Which of the following states the immediate impact on plant operations of the isolation of RACS flow to the RWCU non-regenerative heat exchangers?

a. High differential temperature in the non-regenerative heat exchangers will cause excessive stress and possible tube failure

b. High temperature flow in the RWCU filter demins will cause breakdown of the resins

c. Boiling in the non-regenerative heat exchangers will cause the RWCU pumps to trip on low flow

d. High pressure in the non-regenerative heat exchangers will cause the shell side relief valve to lift

QUESTION: 040 (1.00)

Which of the following will result in a Rod Block Monitor trip [control rod withdrawal block] ?

a. The RBM count circuit detects 3 of 8 LPRM inputs for the selected rod above the downscale trip setpoint

b. With two recirculation pumps operating at 25 percent flow, the RBM averaging circuit output signal is 38 percent

c. APRM Channel A reads 25 percent power

d. A peripheral control rod is selected with the RBM bypass switch in the CHANNEL A position

QUESTION: 041 (1.00)

The reactor is operating at full power when the main turbine front standard trip lever is actuated. Which of the following valve groups if closed, will open in response to the turbine trip?

a. Intercept valves

b. Intermediate stop valves

c. Extraction steam supply line drain valves

d. Feedwater heater extraction non-return (bleeder trip) valves

QUESTION: 042 (1.00)

During feedwater pump startup using OP-SO.AE-0001, Feedwater System Operation, Reactor Feed Pump Min Recirc Line Isolation, is opened before steam is admitted to the turbine. Which one of the following states why the recirculation line isolation valve is MANUALLY cracked open prior to energizing the motor actuator?

a. To prevent water hammer in the recirculation line

b. To limit the thermal stress on the condenser piping

c. To prevent cavitation in the Number 6 feedwater heaters

d. To ensure the valve disc is not thermally bound to the seat

QUESTION: 043 (1.00)

Which of the following describes the power supply arrangement to loads having an Uninteruptable Power Supply [UPS] ?

a. 480 VAC as the preferred source is rectified and auctioneered with 480 VAC backup power. The auctioneered output is input to the static inverters thru a static switch. The inverter output is auctioneered with 125 VDC to provide power to the loads.

b. Normal 480 VAC is rectified and provided to the static inverters. The static switch is used to select either the inverter output or unregulated 120 VAC backup power to supply the loads.

c. The static switch is used to select a 480 VAC power supply to the static inverter. The inverter output is provided directly to the loads.

d. 480 VAC is rectified and auctioneered with 125 VDC to supply the static inverters. The static switch selects either the inverter output or the regulated 120 VAC backup supply to provide power to the loads.

QUESTION: 044 (1.00)

Which of the following states the automatic actuation sequence for the Fire Protection System fire pumps?

a. The jockey pump cycles on at 115 psig and off at 125 psig fire main pressure. The motor driven pump which starts at 110 psig and the diesel driven pump which starts at 100 psig must both be manually stopped.

b. The jockey pump cycles on at 115 psig and off at 125 psig fire main pressure. The motor driven pump cycles from 110 to 130 psig and the diesel pump cycles from 100 to 140 psig.

c. The jockey pump starts at 115 psig, the motor driven pump starts at 110 psig, and the diesel driven pump starts at 100 psig. All three pumps must be manually stopped.

d. The jockey pump cycles on at 115 psig and off at 125 psig. The motor driven pump will start at 110 psig and must be manually stopped. The diesel pump is manually started and stopped as needed.

QUESTION: 045 (1.00)

Which of the following will cause the Control Room Ventilation system to automatically shift to the Isolate Mode of operation ?

a. Smoke in the control room air supply

b. Greater than 4 percent hydrogen in control room air exhaust

c. High radiation in the air supply intake

d. Reactor low level 2 [-38 inches]

QUESTION: 046 (1.00)

A Traversing In-Core Probe trace is being performed using automatic operation. Which of the following states the response of the TIP system when a NSSSS Channel A isolation is actuated with one detector in the core?

a. The shear valve associated with the inserted detector fires isolating that detector. Other TIP guide tubes are isolated by the normally closed ball valves.

b. The inserted detector is withdrawn at fast speed to the in-shield position and the associated ball valve will close.

c. All shear valves will actuate isolating the guide tubes.

d. The trace continues unaffected by the isolation however the NSSSS must be reset before any additional detectors can be inserted into the core.

QUESTION: 047 (1.00)

Which of the following systems removes heat directly from the fuel pool cooling heat exchangers ?

a. SACS

b. RACS

c. Service Water

d. Residual Heat Removal

QUESTION: 048 (1.00)

The plant is operating at full power with the A MSL radiation monitor failed upscale, [INOP]. A faulty fuse in the B RPS power supply causes a loss of power to the B MSL radiation monitor. Which of the following describes the automatic action that occur ?

a. All MSIVs will shut and a reactor scram will occur

b. Two steam lines will isolate and a 1/2 reactor scram [MSIV closure] will be generated

c. MSIVs remain open and a 1/2 reactor scram [MSL HI RAD] will be generated

d. All MSIVs remain open but a reactor scram [MSL HI RAD] occurs

QUESTION: 049 (1.00)

The following plant conditions exist:

All feedwater pumps have tripped
Reactor power is 70 percent
SLC initiation timer has been actuated on Low level ONLY

One minute after the SLC initiation timer has timed out, which of the following conditions will result in the immediate automatic actuation of the Standby Liquid Control ?

a. One SRV is cycling open and shut
All APRM mode switches are in STANDBY
Reactor Water level is 1[illegible] inches and rising
A reactor feedwater pump has been started

b. Reactor Pressure is 950 psig
Four APRMs read 14 percent power
Reactor Water level is -47 inches
RRCS RESET pushbutton has been depressed

c. Three SRVs are actuated
All APRMs are downscale
Reactor Water level is - 47 inches
RRCS Manual Initiation pushbutton has been epressed

d. All SRVs are shut
Five APRMs read 20 percent power
Reactor Water level is -12 inches and falling
A reactor feedwater pump has been started

QUESTION: 050 (1.00)

OP-EO.ZZ-104, Radioactive Release Control, directs that if Turbine Building Ventilation is shutdown, then Restart Turbine Building Ventilation. Which of the following is a basis for this action ?

a. The ventilation system maintains a positive pressure which would mitigate reactor building leakage into the turbine building

b. The ventilation system would assist in monitoring of the off-site release

c. Use of the turbine building ventilation would limit intrusion of radioactive contamination into the control room

d. Turbine building instrumentation is not qualified for operation in a radiation environment hence, radiation levels must be minimized for plant monitoring

QUESTION: 051 (1.00)

A trip of circulating water pumps has caused a severely degraded main condenser vacuum condition which has resulted in a Main Turbine Trip [7.5 inches HGA]. Which of the following Automatic Actions should have preceeded the main turbine trip as vacuum was degrading ?

a. Reactor Feedwater Pump trip

b. Bypass Valve closure

c. MSIV closure

d. Recirc Pump full runback

QUESTION: 052 (1.00)

During the mitigation of a reactor transient, suppression pool level drops to below 74.5 inches. OP-EO.ZZ-102, Primary Containment Control, requires that suppression pool level be restored. Which of the following is NOT a method of adding water to the suppression pool as authorized by the Primary Containment Control procedure ?

a. Makeup from the Hope Creek Fire Truck thru RHR Loop B

b. Makeup from the CST using the RCIC pump discharging thru the minimum flow valve

c. Makeup from the Main Condenser Hotwell thru the Loop A Core Spray pumps thru the minimum flow valves

d. Makeup from Service Water thru the RHR system

QUESTION: 053 (1.00)

The following plant conditions exist:

Reactor Power is 12 percent
Control rod withdrawal is in progress

Which of the following states an immediate operator action when a power increase due to a dropped control rod occurs ?

a. Allow power to stabilize, then override the RSCS and RWM rod blocks and insert the dropped control rod

b. Raise the drive water to reactor pressure to 300 psig then take action to fully insert the dropped control rod

c. Insert control rods, in sequence, to terminate the power increase

d. Continue to withdraw control rods until power is stabilized at greater than 20 percent

QUESTION: 054 (1.00)

The reactor is operating at 98 percent power with water level control in three-element, automatic control when the following automatic actuations are received:

Reactor Feedwater pumps runback to 80 percent
Recirculation pumps runback to 45 percent

Which of the following is a cause for the automatic actuations ?

a. One primary condensate pump has tripped

b. One secondary condensate pump has tripped

c. A circulating water pump has tripped resulting in degraded condenser vacuum

d. The Redundant Reactivity Control System has been actuated

QUESTION: 055 (1.00)

In accordance with OP-EO.ZZ-102 B, Primary Containment Control, Drywell sprays have been initiated when the following conditions were reached;

Suppression Chamber Pressure 10.2 psig
Suppression Pool level 102 inches
Drywell Pressure 7 psig
Drywell Temperature 228 degrees F

Which of the following is a condition and a reason for terminating Drywell Spray ?

a. When drywell temperature drops below 100 degrees F to prevent exceeding the suppression chamber dynamic loading limits

b. When suppression chamber pressure falls below 2.7 psig to prevent cavitation of the RHR pumps

c. When drywell pressure falls below 2.7 psig to prevent saturated conditions in the drywell

d. When drywell pressure drops below 1.68 psig to ensure the integrity of the primary containment

QUESTION: 056 (1.00)

The following plant conditions exist:

Reactor Mode Switch is in Shutdown
Reactor Vessel Level 60 inches
Recirculation Pump A is isolated due to a seal leak
Reactor Pressure is 90 psig
Reactor Cooldown is in progress using the Bypass Jack

A complete loss of Condenser Vacuum and an MSIV closure occur. Which of the following systems would be available to continue reactor cooldown ?

a. Shutdown Cooling [RHR]

b. Reactor Water Cleanup in recirculation mode

c. HPCI

d. Main Feedwater

QUESTION: 057 (1.00)

The following plant conditions exist:

A reactor scram has occurred
Turbine bypass valves have failed to actuate
SRVs have failed to actuate

SELECT the method that can provide the largest cooldown rate:

a. One reactor feedpump operating with the pump discharge valve closed and the pump running on minimum flow

b. Operating the RWCU in the recirculation mode

c. RCIC operating at rated flow CST to CST

d. HPCI operating at rated flow CST to CST

QUESTION: 058 (1.00)

The plant is operating at 70% Rx power and a main generator stator cooling high temperature condition occurs. Assume the high temperature condition does not clear and no operator response. Select the expected plant response.

a. A scram occurs on due to the resultant high pressure transient.

b. The main generator control valves close and the turbine bypass valves open until reactor power is stabilized at a lower steady state value.

c. A scram occurs on reactor low level.

d. A scram occurs on low ETS pressure due to TCV fast acting solenoids energizing.

QUESTION: 059 (1.00)

Which of the following conditions requires an immediate MANUAL trip of the main turbine ?

a. Reactor vessel low level 3 with no rod motion

b. Low ETS hydraulic fluid pressure downstream of the Master Trip Solenoid valve

c. The "UNIT PROT LOCKOUT RELAY TRIP" annunciator [E1-A5] is received

d. Main turbine journal bearing vibration increasing past 12 mils at rated power

QUESTION: 060 (1.00)

The RPV Pressure leg of OP-EO.ZZ-101,requires that if any SRVs are cycling, other than on low-low set, then SRVs will be opened to reduce pressure to less than 935 psig. Which of the following is NOT a basis for reducing pressure below 935 psig ?

a. Terminating the pressure reduction at 935 psig during an ADS blowdown limits the heat discharged to the suppression pool

b. Terminating the pressure reduction at 935 psig allows continued heat rejection to the main condenser thru the bypass valves

c. Reducing pressure to 935 psig minimizes the possibility of an uncontrolled discharge into the suppression pool

d. Reducing pressure to 935 psig provides an operational margin to the lowest SRV lift setpoint if the MSIVs are shut

QUESTION: 061 (1.00)

The suppression pool temperature leg of OP-EO.ZZ-102A, Primary Containment Control, requires emergency RPV depressurization if plant conditions cannot be maintained below the HCTL curve of SPT-T-1, attached as Figure 9. Which of the following states the reason that emergency depressurization is performed if the limits of the HCTL cannot be maintained ?

a. Ensures that the suppression pool temperature instrument will provide accurate readings

b. Prevents RHR pump cavitation

c. Prevents containment failure

d. Ensures adequate core cooling

QUESTION: 062 (1.00)

A malfunction in the recirculation pump trip circuitry causes a trip of the A recirculation pump resulting in the following transient plant conditions:

Core Flow 35 percent
Reactor power 46 percent

The second recirculation pump then trips when its RPT breaker opens. Using the attached Power to Flow map, which of the following actions is appropriate ?

a. Drive rods using the stuff sheet to reduce power to less than 42 percent

b. Place the reactor mode switch in SHUTDOWN

c. Verify indications of core flow and ensure reactor power is stable to within 10 percent power oscillations, otherwise, Scram the reactor

d. Within 15 minutes, take action to restore one recirculation pump to operation

QUESTION: 063 (1.00)

Which of the following will cause an automatic start of the Secondary Containment Filtration, Recirculation, and Ventilation System?

a. 1.50 psig in the drywell

b. LOCA sequencer actuation

c. Low Reactor Building differential pressure at 0.1 inches of water

d. Reactor Building ventilation exhaust Hi - Hi radiation at 2x10E-4 uCi/cc

QUESTION: 064 (1.00)

The reactor is operating at full power when a trip of the RPS B MG Set occurs. Assuming no other system faults, which of the following automatic actions will have occurred ?

a. The Traversing incore probe will be withdrawn and its ball valve will close

b. The Primary Instrument Gas supply valves will shut

c. The Reactor Water Cleanup system will isolate

d. The reactor will Scram

QUESTION: 065 (1.00)

Refueling is in progress when the Refueling SRO leaves the refueling area. Which of the following conditions is required as the SRO leaves ?

a. The SRO must conduct a complete turnover with the refueling bridge operator for fuel movement to continue

b. A control room SRO must continually monitor Source Range counts during any continued core alterations

c. The refueling platform shall not be placed over the reactor cavity for continued core alterations

d. Only core alterations involving incore instruments and reactivity controls can be conducted

QUESTION: 066 (1.00)

The core is being unloaded into the fuel pool wher the following alarms are received:

FUEL POOL LEVEL HI/LO
FUEL POOL COOLING LEAKAGE HI
FUEL POOL COOLING SYS TROUBLE
REFUELING FLOOR AIRBORNE ACTIVITY HI

Which of the following is actions would be appropriate ?

a. Isolate Service/Instrument Air to the Reactor Well to Dryer Seperator Pool gate seals

b. Dispatch operators to the refueling floor to monitor fuel pool level

c. Lower an irradiated fuel assembly into the vessel

d. Trip the Fuel Pool Cooling Pumps

QUESTION: 067 (1.00)

Select the basis for tripping the Main Turbine at 50 MWe during the conduct of OP-EO.ZZ-100, Reactor Scram.

a. To minimize the possibility of damage to the Main Generator

b. To prevent turbine damage from carryover of wet steam

c. To minimize the possibility of using SRVs for pressure control

d. To prevent thermal stratification of the Reactor Vessel

QUESTION: 068 (1.00)

The reactor is operating at full power when the following conditions are identified:

DRYWELL PRESSURE HI/LO annunciator
Drywell pressure is increasing

Which of the following actions is taken if a reactor scram has not occurred?

a. Reduce reactor power

b. Initiate Suppression Pool Cooling

c. Initiate Drywell Sprays

d. Increase Drywell Cooling

QUESTION: 069 (1.00)

The reactor has been operating at full power when a transient results in two minutes of operation with a stuck open SRV. Which of the following actions is required ?

a. Reduce pressure to less than 875 psig by adjusting the Pressure Set pushbuttons

b. Reduce reactor power by inserting control rods

c. Place the mode switch in SHUTDOWN

d. Reduce recirculation to minimum speed

QUESTION: 070 (1.00)

A fire is in progress and the SNSS has determined that the control room will be abandoned. The reactor mode switch has been placed in SHUTDOWN. Which of the following immediate actions is also required by OP-AB.ZZ-130, Control Room Evacuation ?

a. Ventilate the control room with outside air

b. Trip the main turbine

c. Start one train of ECCS

d. Open 5 SRVs to depressurize the reactor

QUESTION: 071 (1.00)

HC.OP-AB.ZZ-0133, Loss of Instrument Gas, requires that before Instrument Gas Pressure drops below 45 psig, reactor power be reduced with both recirculation and control rods as quickly as possible. Select a reason why the action is "as quickly as possible".

a. Ensure reactor shutdown before ADS is inoperable

b. Mitigate the effect of MSIV closure

c. Reduce heat load in the drywell

d. Mitigate the effect of multiple control rods drifting

QUESTION: 072 (1.00)

In accordance with the immediate actions of OP-AB.ZZ-131, Loss of Instrument Air and/or Service Air, which of the following states a requirement for initiating a manual reactor Scram ?

a. The standby Service Air Compressor fails to start in 45 seconds

b. Two control rod drifts are detected

c. The H2O2 injection valves have isolated

d. An accumulator trouble alarm occurs

QUESTION: 073 (1.00)

OP-EO.ZZ-101, RPV Control, Step RC/L-6, directs that level be maintained above -161 inches if it cannot be maintained above 12.5 inches as directed in RC/L-4. Which of the following provides a basis for the lower control band limit of -161 inches ?

a. This limit assures that MSIV's will remain open to allow the main condenser to be used as a heat sink

b. This limit assures core cooling because the core remains submerged

c. This limit allows steam cooling as 2/3 of the core remains submerged

d. This limit assures that the ADS timer does not actuate

QUESTION: 074 (1.00)

OP-EO.ZZ-206, Reactor Flooding, states in step RF-19 that injection into the RPV should continue so long as RPV pressure remains at least 75 psig above suppression chamber pressure. Select the basis for maintaining the 75 psig pressure margin between the reactor and the suppression chamber:

a. Assures that RHR heat exchanger thermal limits will not be exceeded

b. Assures that decay heat will be adequately removed from the reactor

c. Assures that the required number of SRVs will remain open

d. Assures that water will not be siphoned into the SRV tailpipes

QUESTION: 075 (1.00)

The following plant conditions exist:

Reactor power is 98 percent
EDG D is being operated for surveillance testing

Swamp grass causes clogging and loss of Service Water flow to ALL SACS heat exchangers. Which of the following is the appropriate immediate operator response ?

a. Slowly unload and secure the EDG

b. Fully open the SACS heat exchanger bypass valves and place the temperature controllers in MANUAL

c. Place the Reactor Mode Switch in SHUTDOWN

d. Initiate a Manual depressurization using ADS valves

QUESTION: 076 (1.00)

The following plant conditions exist:

Reactor power 98 percent
RACS pump C is out-of-service

A malfunction in the LOCA Level 1 protection system causes the simultaneous trip of both RACS A and B pumps. Which of the following operator actions is required by HC.OP-AB.ZZ-123, Loss of Reactor Auxiliary Cooling ?

a. Trip both Reactor Recirculation pumps

b. Augment Fuel Pool Cooling with RHR

c. Inhibit auto-start of HPCI

d. Depressurize the reactor using 5 ADS SRVs

QUESTION: 077 (1.00)

A plant startup is in progress with Rx power 1% and Rx pressure 150 psig when a loss of both CRD pumps occurs. Select the condition that requires a manual Rx scram to be initiated.

a. More than one accumulator trouble alarm

b. More than one control rod high temperature alarm

c. Any control rod verified drifting inward

d. Charging header pressure less than 550 psig

QUESTION: 078 (1.00)

The plant has just achieved cold shutdown when an inadvertant shutdown cooling isolation occurs. None of the shutdown cooling injection valves can be re-opened. SELECT the method of decay heat removal appropriate for these conditions.

a. Start a Recirculation pump and use RWCU maximizing RACS to the non-regenerative heat exchangers.

b. Recirculate the suppression pool through open SRVs and establish RPV pressure at greater than 75 psid above suppression chamber pressure.

c. With MSIVs open, start a mechanical vacuum pump and allow steam to dump to the main condenser

d. Raise and maintain RPV level to 227" to 243" on the upset range to establish natural circulation

QUESTION: 079 (1.00)

The following plant conditions exist:

Reactor scram has occurred
OP-EO.ZZ-100, "Reactor Scram" is being performed
Two Control Rod Drive Water Pumps have tripped

One minute later, Drywell Pressure is 1.7 psig and increasing. Which of the following actions is appropriate?

a. Continue OP-EO.ZZ-100 and monitor Drywell Pressure

b. Exit OP-EO.ZZ-100 and inform the NSS to enter OP-AB.ZZ-201 "Drywell High Pressure"

c. Exit OP-EO.ZZ-100 and inform the NSS to enter OP-EO.ZZ-101 "Reactor Pressure Vessel (RPV) Control" and OP-EO.ZZ-102 "Primary Containment Control"

d. Continue OP-EO.ZZ-100 and dispatch the Equipment Operator to the CRD pump area for remote starting of a CRD pump

QUESTION: 080 (1.00)

A high drywell pressure, LOCA initiation causes a load shed of drywell cooling fans. Select the actions required to restore drywell cooling:

a. Close the 1E breakers and restart the fans

b. Open RACS isolation valves to the Drywell coolers and restart the fans.

c. Depress th 1E breaker motor OVERRIDE switches, close the 1E breaker, and the fans will auto-start

d. Depress the 1E breaker motor OVERRIDE switches, close the 1E breaker, and restart the fans.

QUESTION: 081 (1.00)

The plant is in a normal, full power electrical lineup. Which of the following describes the system response to depressing the TRIP pushbutton on control room panel 10C651E for the Normal supply breaker to bus 10A402?

a. The bus remains energized when the alternate supply breaker automatically shuts. The EDG is not affected.

b. The bus de-energizes, the EDG is not affected.

c. The bus de-energizes, the EDG starts, but the diesel output breaker does not shut.

d. The bus de-energizes, the EDG starts, and the output breaker shuts re-energizing the bus.

QUESTION: 082 (1.00)

SELECT the condition that would result in entry into OP-EO.ZZ-103 "Reactor Building Control."

a. "Reactor Cleanup Demineralizer System Equipment" digital alarm point of annunciator C6-A2 "RADIATION MONITORING ALARM/TRBL" high radiation alarm.

b. Reactor building HVAC exhaust radiation level of 1 x 10-4 uci/ml.

c. RWCU pump room temperature of 130 degree F.

d. RCIC pump room water level of 0.75 inches.

QUESTION: 083 (1.00)

The following plant conditions exist;

The control room has been abandoned
RCIC is shutdown
Reactor pressure is 820 psig
HPCI is injecting
Reactor Level is 40 inches and increasing

In accordance with OP-IO.ZZ-008, Shutdown from Outside the Control Room, which of the following methods will be used to prevent overfill of the reactor vessel ?

a. Trip the HPCI turbine at the RSP prior to exceeding Level 8 to limit the level increase

b. Shut the HPCI pump discharge valve from the Remote Shutdown Panel prior to reaching Hi Level 8

c. Dispatch an operator to the HPCI pump to manually throttle the discharge valve to limit the level increase

d. Open appropriate circuit breakers at the 125 VDC Distribution Panel to cause HPCI shutdown and isolation

QUESTION: 084 (1.00)

SELECT the method that will IMMEDIATELY start the "A" SLCS pump.

a. Place the "TEST SWITCH PUMP A" to the test position at panel 10C011

b. Place the key lock switch to the "ON" position on the pump A control bezel on panel 10C651

c. Depress the "AP208 START" (red) backlit pushbutton on the pump A control bezel on panel 10C651

d. Depress the "MANUAL INITIATION PERMISSIVE" and "MANUAL INITIATION" pushbuttons for both logic trains within Channel A of RRCS

QUESTION: 085 (1.00)

Given the following initial conditions:

The reactor is operating at 100%.
The value of the A recirculation flow signal is 99%
The value of the B recirculation flow signal is 100%
Recirculation flow unit C bypassed on control room panel 10C651.
The value of the D recirculation flow signal is 101%

A component in recirculation flow unit B fails resulting in a recirculation B flow signal of 110%. SELECT the response of the neutron monitoring system.

a. Upscale trip of the B flow unit and comparator trips of the A and B flow unit. No effect on the D flow unit. No scram signals generated.

b. Upscale trip of the B flow unit and comparator trips of the A, B, and D flow units. No scram signals generated

c. Inop trips of the A and C flow units and Inop scram signals on APRMs A, C, and E. No scram signals generated on APRMs B, D, and F.

d. Inop Scram signals on APRMs A, C, and E and Upscale thermal scram on APRMs B, D and F.

QUESTION: 086 (1.00)

Which of the following states the 2 HOUR, 110 PERCENT load limit for an emergency diesel generator ?

a. 6763 KW

b. 4430 KW

c. 6148 KW

d. 4873 KW

QUESTION: 087 (1.00)

SELECT the operator action which would result in the largest decrease in feedwater heating while operating at 100% power.

a. Opening HV-1625 around feedwater heaters one, two and the drain cooler.

b. Opening HV-1623 around feedwater heaters three, four and five.

c. Closing HV-1768A feedwater heater 6A inlet valve.

d. Opening HV-1783A RFP minimum recirculation flow control valve.

QUESTION: 088 (1.00)

All primary and secondary condensate pumps are running. SELECT the approximate system pressure downstream of the secondary condensate pumps with the secondary pumps running in a shutoff head condition.

a. 202 psig.

b. 450 psig.

c. 535 psig.

d. 720 psig.

QUESTION: 089 (1.00)

A recirculation pump trip occurs at 9:00 a.m. and the pump is immediately restarted. The pump trips again at 9:05 a.m. In accordance with OP-AP.ZZ-109(Q) "Equipment Operation Control," WHICH of the following is the minimum amount of time required before the recirculation pump may again be restarted?

a. 1 min

b. 45 min

c. 4 hours

d. 12 hours

QUESTION: 090 (1.00)

The Gaseous Radwaste system contains two pretreatment radiation monitors. Which of the following is a consequence of having the alarm setpoints for these monitors miscalibrated so that the alarm will not actuate under any conditions ?

a. the efficiency of the treatment system will be diminished

b. a fuel failure could be undetected

c. the effluent will not isolate on high radiation

d. the gaseous radioactive release will be unmonitored

QUESTION: 091 (1.00)

The shutdown cooling suction valve [F006A] is to be opened in preparation for commencing shutdown cooling. Which ONE of the following valves does NOT have to be closed to open F006A?

a. HV-F017A [RHR LPCI Injection Valve]

b. HV-F027A [Torus Spray isolation]

c. HV-F004A [RHR pump suction-LPCI mode]

d. HV-F024A [Test return line valve]

QUESTION: 092 (1.00)

Select the condition that will cause the RHR Head Spray Isolation valves, HV-F022 and HV-F023, to automatically shut:

a. Reactor Vessel Level 4

b. Reactor Pressure 82 psig

c. Channel A Remote Shutdown Transfer Switch is placed in EMERGENCY

d. RHR pump BP202 trips

QUESTION: 093 (1.00)

Which of the following is a consequence of excessive steam carryunder ?

a. indicated water level will be higher than actual water level

b. recirculation pumps will cavitate

c. steam flow to the main turbine will increase

d. increased voiding will cause a power increase

QUESTION: 094 (1.00)

Control rods are used to increase reactor power from 60 to 75 percent. Which of the following states the affect of the power change on individual fuel channel flow ?

a. decrease flow in the higher powered fuel channels only.

b. increase flow in the lower powered fuel channels only.

c. increase flow in the higher powered fuel channels only.

d. insignificant change in flow in the fuel channels.

QUESTION: 095 (1.00)

Which ONE of the following conditions would require entry into OP-EO.ZZ-102, "Primary Containment Control"?

a. Suppression Pool level of 78.0 inches.

b. Suppression Pool temperature of 90 degrees F.

c. Primary Containment hydrogen concentration of 3.5%.

d. Primary Containment oxygen concentration of 2.5%.

QUESTION: 096 (1.00)

The Reactor Mode Switch is in RUN, when the reactor engineer reports that the Minimum Critical Power Ratio, [MCPR] is 1.03. Which of the following states the required actions ?

a. Insert control rods in accordance with the Stuff sheet to increase MCPR to greater than 1.04

b. Increase reactor recirculation to increase MCPR to greater than 1.07

c. Commence a reactor shutdown and be in Hot Shutdown within 2 hours

d. Commence a reactor shutdown and be in at least Startup within 6 hours

QUESTION: C97 (1.00)

The plant is operating at 100% Rx power when the normal supply breaker to Bus 10A402, from SST 1BX501, fails open. Concerning bus 4KV emergency bus 10A402, SELECT the following that is NOT an expected automatic response to this condition;

a. The A EDG will auto-start

b. All motor circuit breakers trip

c. LOP sequencer is initiated

d. The alternate supply breaker will close to re-energize the bus

QUESTION: 098 (1.00)

Which of the following conditions requires entry into OP.EO.ZZ-101, RPV Control ?

a. Primary Containment Hydrogen above 2 percent

b. Drywell Temperature at 141 degrees

c. Two SRVs are open due to a high pressure condition

d. RPV Water Level below 12 inches, Reactor power 2 percent

QUESTION: 099 (1.00)

Which of the following would be a source of measurable hydrogen in the primary containment during a reactor transient ?

a. High temperature reaction of fuel clad with water

b. Fission product gasses

c. Breakdown of boric acid following SLC initiation

d. Breakdown of inerting gas from radiation

QUESTION: 100 (1.00)

A reactor transient has caused reactor water level to fall below the Low level LOCA setpoint. Which of the following states the response of the RHR system to the transient ?

a. All RHR pumps start immediately when the low level setpoint is reached

b. The A and B RHR pumps start when the low level setpoint is reached, the C and D pumps start after a 5 second time delay

c. RHR pumps are started in 5 second intervals and after 15 seconds, all pumps are operating

d. The C and D RHR pumps start immediately, and the A and B pumps are started after a 3 minute time delay

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

ANSWER: 001 (1.00)

d

REFERENCE:

NC.NA-AP.ZZ-005(Q)
302H-000.00H-00113A-04,ELO.R10

[3.5,3.8]

294001K116 ..(KA's)

ANSWER: 002 (1.00)

d

REFERENCE:

OP-AP.ZZ-0109 Section 5.2
302H-000.00H-00113C-02 ELO-6

[3.7,3.7]

294001K101 ..(KA's)

ANSWER: 003 (1.00)

d

REFERENCE:

NC.NA-AP.ZZ-0005(Q), Section 5.32

[3.3,4.2]

294001A109 ..(KA's)

ANSWER: 004 (1.00)

a

REFERENCE:

NC.NA-AP.ZZ-000015(Q)
301H-000.00H-00TAGS-09,ELO-R2

[3.9,4.5]

294001K102 ..(KA's)

ANSWER: 005 (1.00)

c

REFERENCE:

SA-AP.ZZ-046(Q)
302H-000.00H-00113I-01,ELO-15,16

[3.3,3.8]

294001K103 ..(KA's)

ANSWER: 006 (1.00)

d

REFERENCE:

SA-SD.ZZ-15

[3.4,3.8]

294001K109 ..(KA's)

ANSWER: 007 (1.00)

b

REFERENCE:

302H-000.00H-000069-10, ELO-5

[3.4,3.8]

294001K115 ..(KA's)

ANSWER: 008 (1.00)

b

REFERENCE:

302H-000.00H-000107-03,ELO-3

[3.2,3.4]

294001A115 ..(KA's)

ANSWER: 009 (1.00)

d

REFERENCE:

HC.OP-IO.ZZ-0003

[3.3,4.3]
302H-000.00H-000020-11, ELO-R6

294001A111 ..(KA's)

ANSWER: 010 (1.00)

b

REFERENCE:

Emergency Plan, Section i (III.B)
215-002B-000-0, Emergency Plan Training, ELO-1.2

[2.9,4.7]

294001A116 ..(KA's)

ANSWER: 011 (1.00)

b

REFERENCE:

NC.NA-AP.ZZ-0013 Section 5.18, 5.19

[3.6,4.2]

294001A110 ..(KA's)

ANSWER: 012 (1.00)

b

REFERENCE:

302H-000.00H-000020-11, p.36
302H-000.00H-000019-11,ELO-R8.n

[3.1,3.1]

202002K104 ..(KA's)

ANSWER: 013 (1.00)

b

REFERENCE:

302H-000.00H-000026-13,p 106,ELO-R5

[4.2,4.1]

206000A309 ..(KA's)

ANSWER: 014 (1.00)

c

REFERENCE:

302H-000.00H-000026-13,p.101,ELO-8

[3.9,4.0]

206000K402 ..(KA's)

ANSWER: 015 (1.00)

c

REFERENCE:

302H-000.00H-000027-10, ELO-2,4

[3.6,3.7]

209001G007 ..(KA's)

ANSWER: 016 (1.00)

a

REFERENCE:

302H-000.00H-000023-09,ELO-5A

[3.1,3.2]

211000K202 ..(KA's)

ANSWER: 017 (1.00)

c

REFERENCE:

302H-000.00H-000022-10, ELO-15c
Technical Specification Basis 2.1.1
Technical Specifications, Table 3.3.1-1

[4.0,4.1]

212000A216 ..(KA's)

ANSWER: 018 (1.00)

d

REFERENCE:

302H.000-00H-000016-07,ELO-2.b

[3.3,3.2]

215005A105 ..(KA's)

ANSWER: 019 (1.00)

c

REFERENCE:

302H-000.00H-00002-10,ELO-5

[3.9,3.9]

295008A201 ..(KA's)

ANSWER: 020 (1.00)

a

REFERENCE:

302H-000.00H-000030-13, ELO-R19

[3.8,3.7]

217000A202 ..(KA's)

ANSWER: 021 (1.00)

a

REFERENCE:

HC.OP-SO.SN-0001, 3.3
302H-000.00H-000029-12,ELO-R6

[4.2,4.2]

218000A402 ..(KA's)

ANSWER: 022 (1.00)

b

REFERENCE:

302H-000.00H-000029-12,ELO-R4,IV.C.1.g

[3.8,3.8]

218000K501 ..(KA's)

ANSWER: 023 (1.00)

a

REFERENCE:

302H-000.00H-000029-12,ELO-R3.e

[3.9,3.9]

218000G007 ..(KA's)

ANSWER: 024 (1.00)

b

REFERENCE:

302H-000.00H-000031-08,ELO-3k

[2.9,3.1]

223001K405 ..(KA's)

ANSWER: 025 (1.00)

c

REFERENCE:

HC.OP-SO.GS-0002
302H-000.00H-000034-11,ELO-R9

[3.6,3.6]

223001A405 ..(KA's)

ANSWER: 026 (1.00)

a

REFERENCE:

302H-000.00H-000044-09,IV.A.1, ELO-2

[3.5,3.5]

223002A101 ..(KA's)

ANSWER: 027 (1.00)

d

REFERENCE:

HC.OP-SO.BC-1
302H-000.00H-000028-10,ELO-5

[3.1,3.4]

226001A105 ..(KA's)

ANSWER: 028 (1.00)

c

REFERENCE:

302H-000.00H-000230-03
302H-000.00H-000046-10,ELO-R5e

[3.9,4.0]

239002K401 ..(KA's)

ANSWER: 029 (1.00)

a

REFERENCE:

302H-000.00H-000051-11,ELO-R2b
HC.OP-AB.ZZ-120

[3.4,3.4]

241000K607 ..(KA's)

ANSWER: 030 (1.00)

c

REFERENCE:

302H-000.00H-000059-07.ELO-R4

[2.9,2.9]

259002K404 ..(KA's)

ANSWER: 031 (1.00)

d

REFERENCE:

302H-000.00H-000002-10,ELO-3
302H-000.00H-000059-7,ELO-R11

[3.5,3.5]

259002K605 ..(KA's)

ANSWER: 032 (1.00)

a

REFERENCE:

302H-000.00H-000042-07, ELO-11

[3.5,3.7]

295023K205 ..(KA's)

ANSWER: 033 (1.00)

b

REFERENCE:

302H-000.00H-000068-14,ELO-5

[3.8,3.7]

264000K408 ..(KA's)

ANSWER: 034 (1.00)

c

REFERENCE:

302H-000.00H-000006-09, ELO-3

[3.1,3.0]

201001K410 ..(KA's)

ANSWER: 035 (1.00)

d

REFERENCE:

302H-000.00H-000007-07,ELO-R3

[3.3,3.3]

201002K405 ..(KA's)

ANSWER: 036 (1.00)

c

REFERENCE:

302H-000.00H-000010-09,VII.C,ELO-8

[3.6,3.5]

215002A304 ..(KA's)

ANSWER: 037 (1.00)

d

REFERENCE:

302H-000.00H-000010-09,ELO-6
302H-000.00H-000009-07,ELO-R5

[3.5,3.7]

201004A305 ..(KA's)

ANSWER: 038 (1.00)

b

REFERENCE:

302H-000.00H-00001º-11,ELO-3L

[3.6,3.7]

202001K506 ..(KA's)

ANSWER: 039 (1.00)

b

REFERENCE:

302H-000.00H-000021-08,ELO-R7c

[3.2,3.4]

204000A201 ..(KA's)

ANSWER: 040 (1.00)

a

REFERENCE:

302H-000.00H-000017-06, ELO-R7

[3.2,3.1]

215002K102 ..(KA's)

ANSWER: 041 (1.00)

c

REFERENCE:

302H-000.00H-000048-11,ELO-9

[3.7,3.9]

245000A201 ..(KA's)

ANSWER: 042 (1.00)

a

REFERENCE:

HC.OP-SO.AE-0001

[3.2,3.3]

259001G010 ..(KA's)

ANSWER: 043 (1.00)

d

REFERENCE:

302H-000.00H-000066-14,ELO-5

[3.1,3.4]

262002K401 ..(KA's)

ANSWER: 044 (1.00)

a

REFERENCE:

302H-000.00H-000094-05,ELO-4

[3.3,3.5]

286000K402 ..(KA's)

ANSWER: 045 (1.00)

c

REFERENCE:

302H-000.00H-000096-03,ELO-R4

[3.4,3.5]

290003K101 ..(KA's)

ANSWER: 046 (1.00)

b

REFERENCE:

302H-000.00H-000018-07,ELO-R6

[3.3,3.4]

215001K105 ..(KA's)

ANSWER: 047 (1.00)

a

REFERENCE:

302H-000.00H-000043-08,ELO-R2

[3.2,3.3]

233000G007 ..(KA's)

ANSWER: 048 (1.00)

a

REFERENCE:

302H-000.00H-000022-10,P.32;P.34;302H-000.00H-000045-09,P.20,Fig 6,7a

[3.8,3.8]

239001K401 ..(KA's)

ANSWER: 049 (1.00)

b

REFERENCE:

302H-000.00H-000024-10,ELO-3, page 17

[4.0,4.2]

295037K202 ..(KA's)

ANSWER: 050 (1.00)

b

REFERENCE:

302H-000.00H-000128,ELO-3

[3.6,3.8]

295038K203 ..(KA's)

ANSWER: 051 (1.00)

d

REFERENCE:

302H-000.00H-000053-06,ELO-11

[3.7,3.8]

295002G011 ..(KA's)

ANSWER: 052 (1.00)

c

REFERENCE:

OP-EO.ZZ-102 A
302H-000.00H-00125B-08,ELO-R6

[3.7,3.8]

295030K202 ..(KA's)

ANSWER: 053 (1.00)

c

REFERENCE:

OP-AB.ZZ-0102

[3.8,4.3]

295014G012 ..(KA's)

ANSWER: 054 (1.00)

b

REFERENCE:

302H-000.00H-000059-07,ELO-15
302H-000.00H-000053-06,p.31

[3.2,3.3]

295009K301 ..(KA's)

ANSWER: 055 (1.00)

d

REFERENCE:

302H-000.00H-00126B-08,ELO-6

[4.2,4.2]

295024A111 ..(KA's)

ANSWER: 056 (1.00)

b

REFERENCE:

HC.OP-IO.ZZ-0004
302H-000.00H-00112D-04,ELO-8

[3.4,3.5]

204000A304 ..(KA's)

ANSWER: 057 (1.00)

d

REFERENCE:

Lesson plan 302H-000.00H-00124C pg 30 Objective 8

[3.8/3.8]

295025K303 ..(KA's)

ANSWER: 058 (1.00)

a

REFERENCE:

HC.OP-AB.ZZ-0145, Item 5.5

[4.0,4.1]]

295005K101 ..(KA's)

ANSWER: 059 (1.00)

d

REFERENCE:

HC.OP-SO.AC-0001
OP-AR.ZZ-015,Digital Point D4848
302H-000.00H-000048-10,ELO-8

[3.8,3.6]

295005G010 ..(KA's)

ANSWER: 060 (1.00)

a

REFERENCE:

302H-000.00H-00124C-08,ELO-8

[4.4,4.4]

295025A103 ..(KA's)

ANSWER: 061 (1.00)

c

REFERENCE:

302H-000.00H-00124C-08,p.23,ELO-8

[3.6,3.8]

295013K302 ..(KA's)

ANSWER: 062 (1.00)

b

REFERENCE:

HC-OP.SO-BB-0002, Caution 5.4.1

[3.5,3.8]

295001A201 ..(KA's)

ANSWER: 063 (1.00)

b

REFERENCE:

302H-000.00H-000042-07,p.38,ELO-7

[3.2,3.4]

261000K109 ..(KA's)

ANSWER: 064 (1.00)

c

FERENCE:

HC-OP.SO-ZZ-0110

[3.5,3.7]

295003A204 ..(KA's)

ANSWER: 065 (1.00)

c

REFERENCE:

302H-000.00H-00113B-02,ELO-5

[3.3,4.2]

295023G001 ..(KA's)

ANSWER: 066 (1.00)

c

REFERENCE:

HC.OP-AB.ZZ-0144
302H-000.00H-00113B-02,ELO-11

[3.4,3.7]

295023G009 ..(KA's)

ANSWER: 067 (1.00)

a

REFERENCE:

302H-000.00H-000127-06,ELO-4

[3.8,4.0]

295006K305 ..(KA's)

ANSWER: 068 (1.00)

d

REFERENCE:

OP-AB.ZZ-201

[3.4,3.4]

295010K302 ..(KA's)

ANSWER: 069 (1.00)

c

REFERENCE:

OP-AB.ZZ-120

[3.4,3.8]

295026G007 ..(KA's)

ANSWER: 070 (1.00)

b

REFERENCE:

OP-AB.ZZ-130

[3.8,3.6]

295016G010 ..(KA's)

ANSWER: 071 (1.00)

b

REFERENCE:

302H-000.00H-000076-08,ELO-R2

[3.4,3.4]

295019K205 ..(KA's)

ANSWER: 072 (1.00)

b

REFERENCE:

HC.OP-AB.ZZ-0131

[3.7,3.4]

295019G010 ..(KA's)

ANSWER: 073 (1.00)

b

REFERENCE:

302H-000.00H-00124A-07,ELO-R6

[3.7,4.0]

295031G007 ..(KA's)

ANSWER: 074 (1.00)

b

REFERENCE:

302H-000.00H-000134-07,ELO-5

[4.4,4.7]

295031K302 ..(KA's)

ANSWER: 075 (1.00)

c

REFERENCE:

HC.OP-AB.ZZ-0124,Step 4.9

[3.4,3.6]

295018K101 ..(KA's)

ANSWER: 076 (1.00)

a

REFERENCE:

HC.OP-AB.ZZ-123

[3.4,3.3]

295018G010 ..(KA's)

ANSWER: 077 (1.00)

a

REFERENCE:

HC.OP-AB.ZZ-104

[3.3,3.4]

295022K101 ..(KA's)

ANSWER: 078 (1.00)

a

REFERENCE:

302H-000.00H-00112D,ELO-8
OP-AB.ZZ-142

[3.6,3.8]

295021K305 ..(KA's)

ANSWER: 079 (1.00)

c

REFERENCE:

302H-000.00H-00113E-02, ELO-4b

[4.2,4.2]

294001A102 ..(KA's)

ANSWER: 080 (1.00)

d

REFERENCE:

302H-000.00H-000033-07, page 12,ELO-5

[3.2,3.2]

295020A102 ..(KA's)

ANSWER: 081 (1.00)

b

REFERENCE:

302H-000.00H-000066-14,ELO-R7

[3.4,3.5]

262001G007 ..(KA's)

ANSWER: 082 (1.00)

a

REFERENCE:

OP-AR.ZZ-011,A2-26
OP-EO.ZZ-103

[4.0,4.5]

295033G011 ..(KA's)

ANSWER: 083 (1.00)

d

REFERENCE:

OP-IO.ZZ-008
302H-000.00H-00112H.02

[3.7,3.8]

206000K107 ..(KA's)

ANSWER: 084 (1.00)

a

REFERENCE:

302H-000.00H-000023-09,ELO-12
302H-000.00H-000024-10,p.21

[4.2,4.0]

211000G009 ..(KA's)

ANSWER: 085 (1.00)

a

REFERENCE:

302H-000.00H-000016-06,ELO-5

[3.5,3.6]

215005A205 ..(KA's)

ANSWER: 086 (1.00)

d

REFERENCE:

302H-000.00H-000068-14,ELO-2

[3.4,3.4]

264000A203 ..(KA's)

ANSWER: 087 (1.00)

b

REFERENCE:

302H-000.00H-000058-07,ELO-4

[3.1,3.1]

259001K306 ..(KA's)

ANSWER: 088 (1.00)

d

REFERENCE:

302H-000.00H-000052-12 Condensate System Figure 1

[3.3,3.3]

256000K606 ..(KA's)

ANSWER: 089 (1.00)

b

REFERENCE:

OP-AP.ZZ-109(Q) ATTACHMENT 1 PG 3

294001K107 (3.3/3.6)

294001K107 ..(KA's)

ANSWER: 090 (1.00)

b

REFERENCE:

302H-000.00H-54-04,ELO-11

[3.0,3.2]

271000K602 ..(KA's)

ANSWER: 091 (1.00)

a

REFERENCE:

302H-000.00H-000028-10,ELO-3

[3.8,3.8]

205000K403 ..(KA's)

ANSWER: 092 (1.00)

b

REFERENCE:

302H-000.00H-000028-10,p.50,ELO-6

[3.7,3.8]

205000K402 ..(KA's)

ANSWER: 093 (1.00)

b

REFERENCE:

302H-000.00H-000001-07,ELO-3b

[3.1,3.2]

290002K401 ..(KA's)

ANSWER: 094 (1.00)

d

REFERENCE:

302H-000.00H-000001-07,ELO-8

[3.2,3.3]

290002K403 ..(KA's)

ANSWER: 095 (1.00)

c

REFERENCE:

OP-EO.ZZ-102

[4.3,4.5]

295029G011 ..(KA's)

ANSWER: 096 (1.00)

c

REFERENCE:

302H-00C.00H-000110-06,ELO-2
Technical Specifications

[4.2,4.2]

294001A102 ..(KA's)

ANSWER: 097 (1.00)

a

REFERENCE:

302H-000.00H-000066-14,ELO-15

[4.1,4.2]

295003K202 ..(KA's)

ANSWER: 098 (1.00)

c

REFERENCE:

OP-EO.ZZ-101
302H-000.00H-000046-10,p.19

[4.4,4.7]

295037G011 ..(KA's)

ANSWER: 099 (1.00)

a ~~d~~ 6/22/92

REFERENCE:

302H-000.00H-00126C-03,ELO-5

[3.2,3.4]

295010A107 ..(KA's)

ANSWER: 100 (1.00)

b

REFERENCE:

302H-000.00H-000028-10,ELO-9

[3.6,3.7]

203000K601 ..(KA's)

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

A N S W E R K E Y

MULTIPLE CHOICE

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

A N S W E R K E Y

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

A N S W E R K E Y

092 b

093 b

094 d

095 c

096 c

097 a

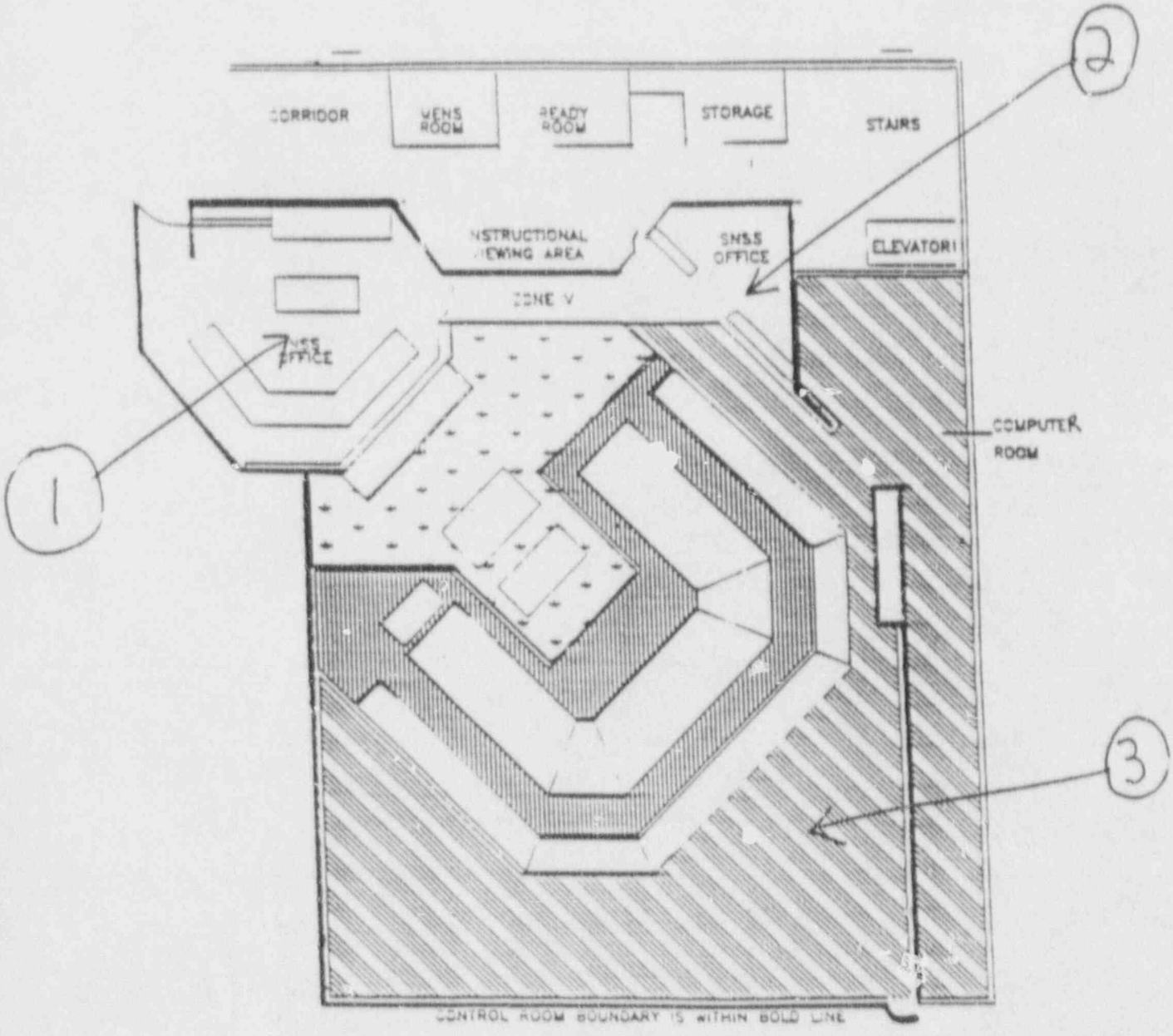
098 c

099 ~~c~~ a JS 6/22/92

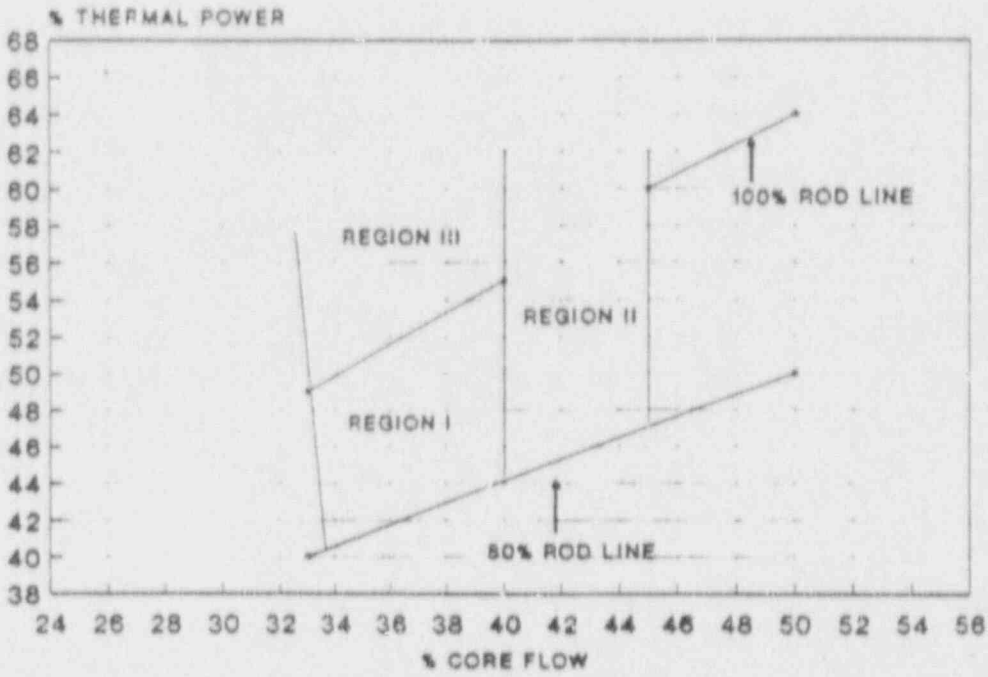
100 b

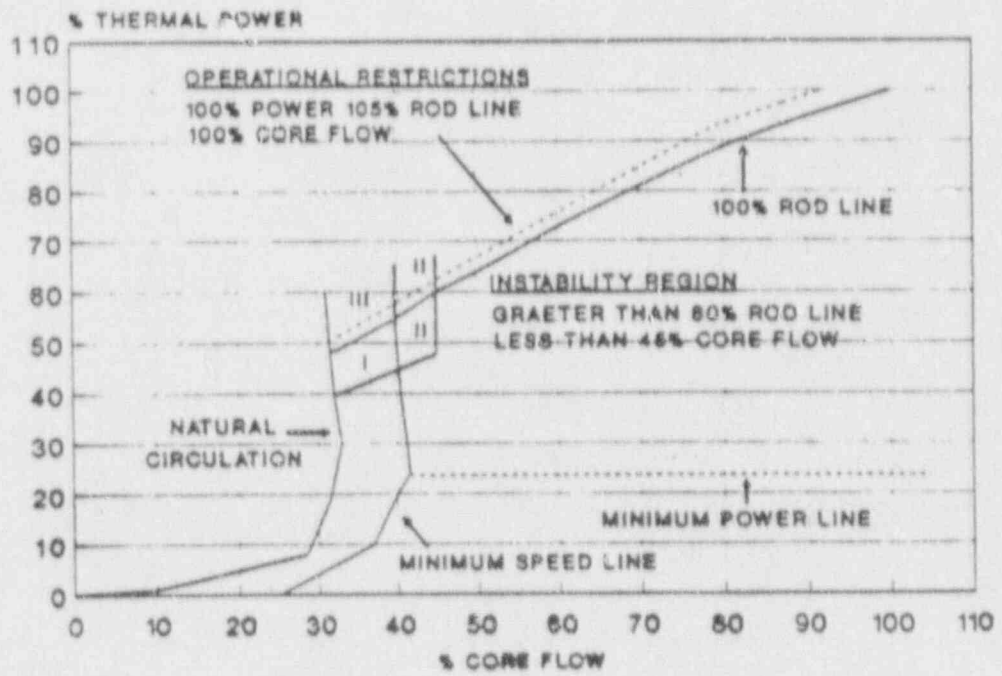
(********** END OF EXAMINATION **********)

FIGURE 1

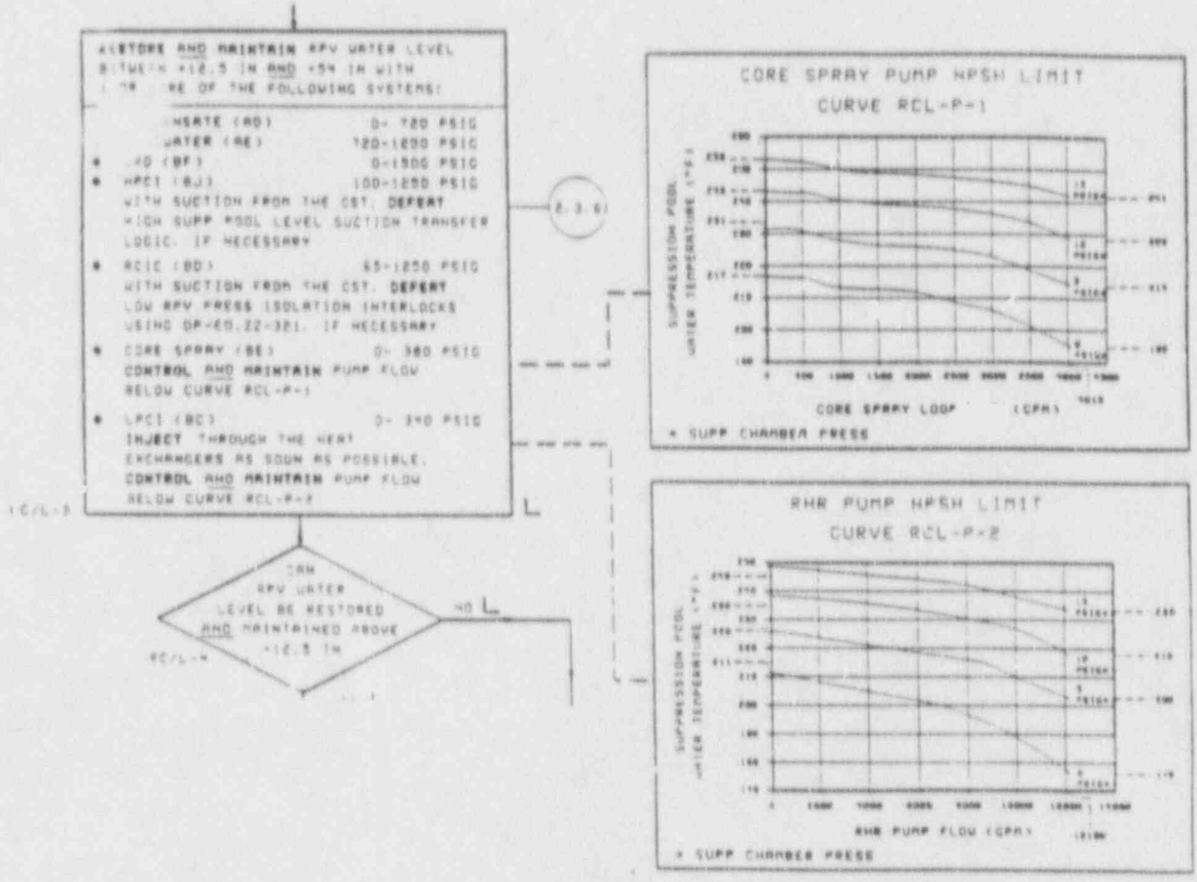

CORRIDOR
MENS ROOM
READY ROOM
STORAGE
STAIRS
INSTRUCTIONAL VIEWING AREA
SNSS OFFICE
ELEVATOR
ZONE V
SNSS OFFICE
COMPUTER ROOM
1
2
3
CONTROL ROOM BOUNDARY IS WITHIN BOLD LINE

FIGURE


% THERMAL POWER
68
66
64
62
60
58
56
54
52
50
48
46
44
42
40
38
REGION III
REGION II
REGION I
100% ROD LINE
80% ROD LINE
24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56
% CORE FLOW


% THERMAL POWER
110
100
90
80
70
60
50
40
30
20
10
0
OPERATIONAL RESTRICTIONS
100% POWER 105% ROD LINE
100% CORE FLOW
100% ROD LINE
III
II
I
INSTABILITY REGION
GRAETER THAN 80% ROD LINE
LESS THAN 45% CORE FLOW
NATURAL
CIRCULATION
MINIMUM POWER LINE
MINIMUM SPEED LINE
0 10 20 30 40 50 60 70 80 90 100 110
% CORE FLOW

FIGURE


RESTORE AND MAINTAIN RPV WATER LEVEL
BETWEEN +12.5 IN AND +54 IN WITH
ONE OR MORE OF THE FOLLOWING SYSTEMS:
CONDENSATE (AD) 0- 720 PSIG
FEEDWATER (AE) 720-1250 PSIG
HPCI (BJ) 0-1500 PSIG
HPCI (BJ) 100-1250 PSIG
WITH SUCTION FROM THE CST. DEFEAT
HIGH SUPP POOL LEVEL SUCTION TRANSFER
LOGIC. IF NECESSARY
RCIC (BD) 65-1250 PSIG
WITH SUCTION FROM THE CST. DEFEAT
LOW RPV PRESS ISOLATION INTERLOCKS
USING DP-EO.22-321. IF NECESSARY
CORE SPRAY (BE) 0- 380 PSIG
CONTROL AND MAINTAIN PUMP FLOW
BELOW CURVE RCL-P-1
LPCI (BC) 0- 340 PSIG
INJECT THROUGH THE HEAT
EXCHANGERS AS SOON AS POSSIBLE.
CONTROL AND MAINTAIN PUMP FLOW
BELOW CURVE RCL-P-2
CAN
RPV WATER
LEVEL BE RESTORED
AND MAINTAINED ABOVE
+12.5 IN
NO
CORE SPRAY PUMP NPSH LIMIT
CURVE RCL-P-1
SUPPRESSION POOL
WATER TEMPERATURE (°F)
CORE SPRAY LOOP (CFM)
* SUPP CHAMBER PRESS
RHR PUMP NPSH LIMIT
CURVE RCL-P-2
SUPPRESSION POOL
WATER TEMPERATURE (°F)
RHR PUMP FLOW (CFM)
* SUPP CHAMBER PRESS

FIGURE

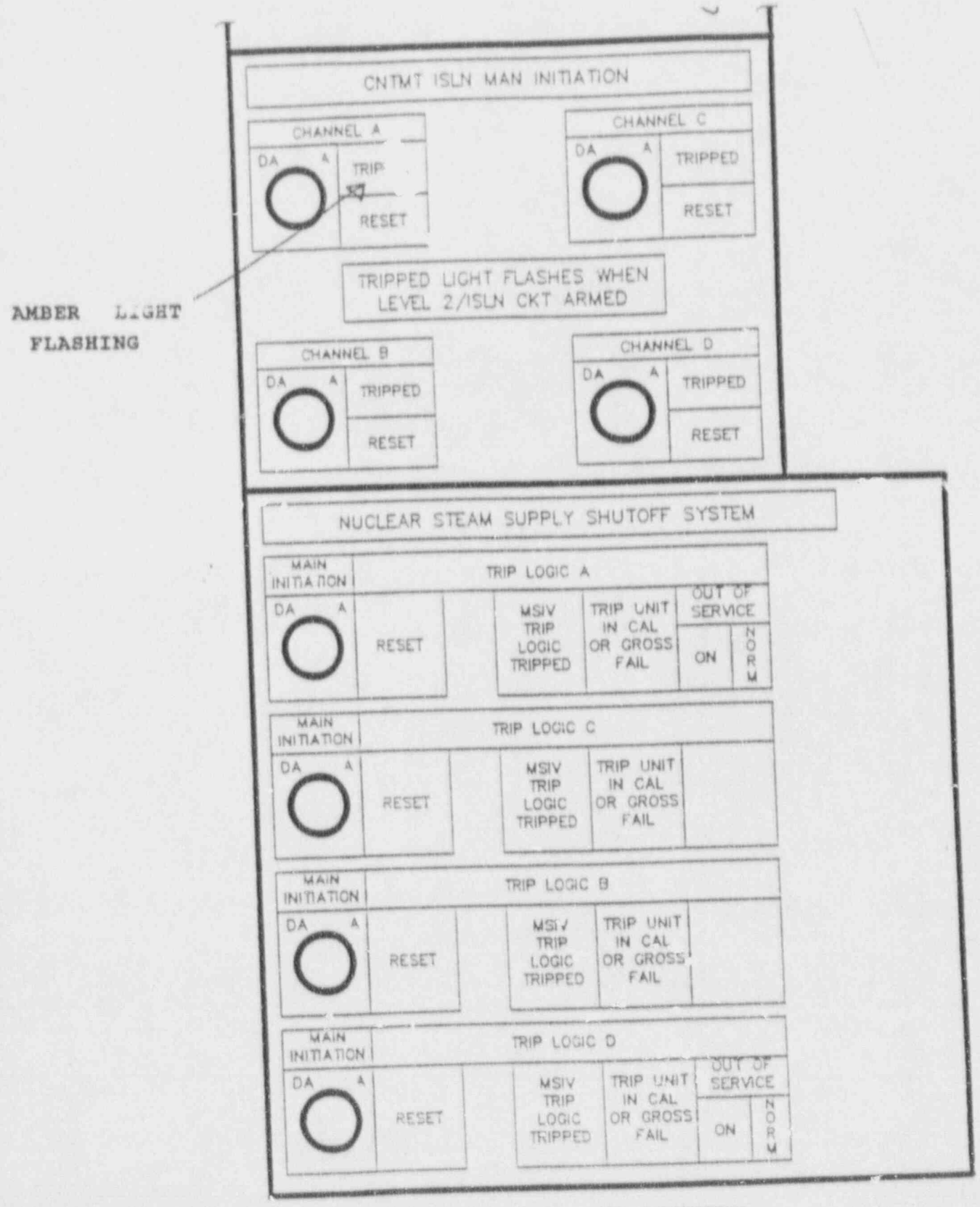

CNTMT ISLN MAN INITIATION
CHANNEL A
DA
A
TRIP
RESET
CHANNEL C
DA
A
TRIPPED
RESET
TRIPPED LIGHT FLASHES WHEN LEVEL 2/ISLN CKT ARMED
AMBER LIGHT FLASHING
CHANNEL B
DA
A
TRIPPED
RESET
CHANNEL D
DA
A
TRIPPED
RESET
NUCLEAR STEAM SUPPLY SHUTOFF SYSTEM
MAIN INITIATION
TRIP LOGIC A
DA
A
RESET
MSIV TRIP LOGIC TRIPPED
TRIP UNIT IN CAL OR GROSS FAIL
OUT OF SERVICE
ON
NORM
MAIN INITIATION
TRIP LOGIC C
DA
A
RESET
MSIV TRIP LOGIC TRIPPED
TRIP UNIT IN CAL OR GROSS FAIL
MAIN INITIATION
TRIP LOGIC B
DA
A
RESET
MSIV TRIP LOGIC TRIPPED
TRIP UNIT IN CAL OR GROSS FAIL
MAIN INITIATION
TRIP LOGIC D
DA
A
RESET
MSIV TRIP LOGIC TRIPPED
TRIP UNIT IN CAL OR GROSS FAIL
OUT OF SERVICE
ON
NORM

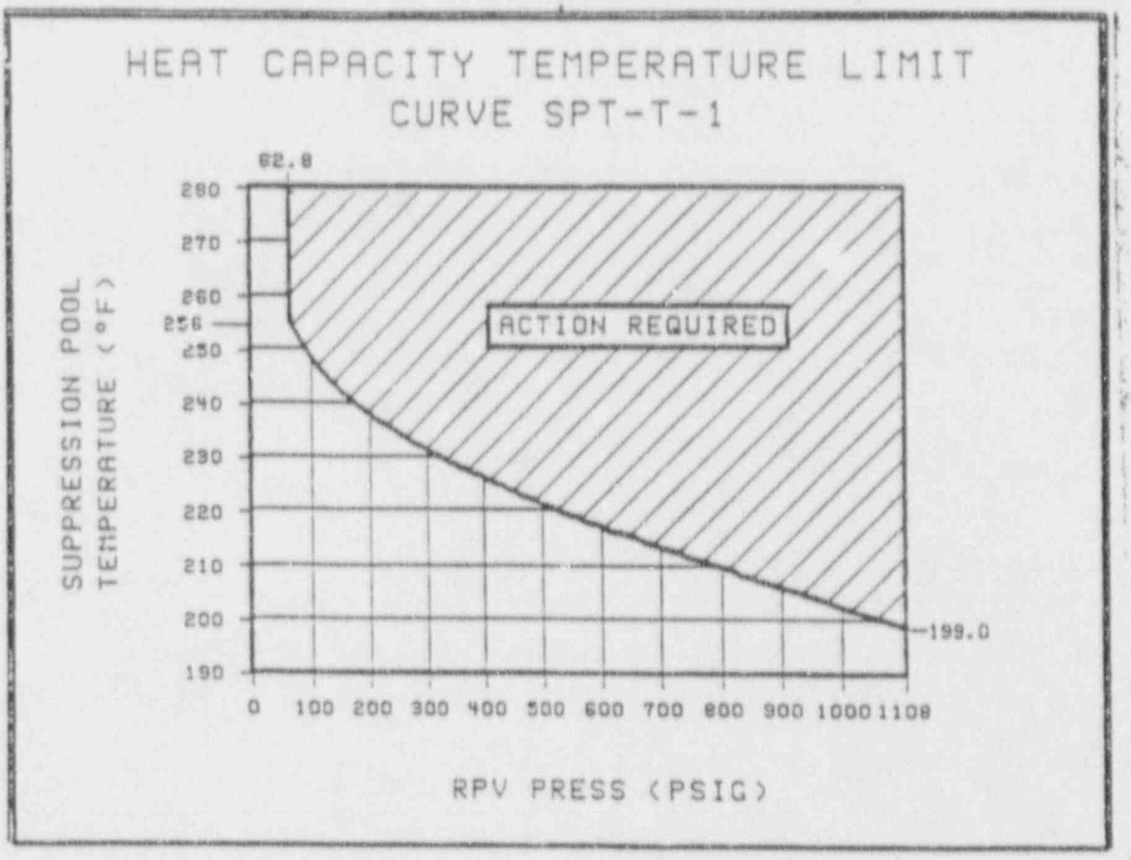
FIGURE 8

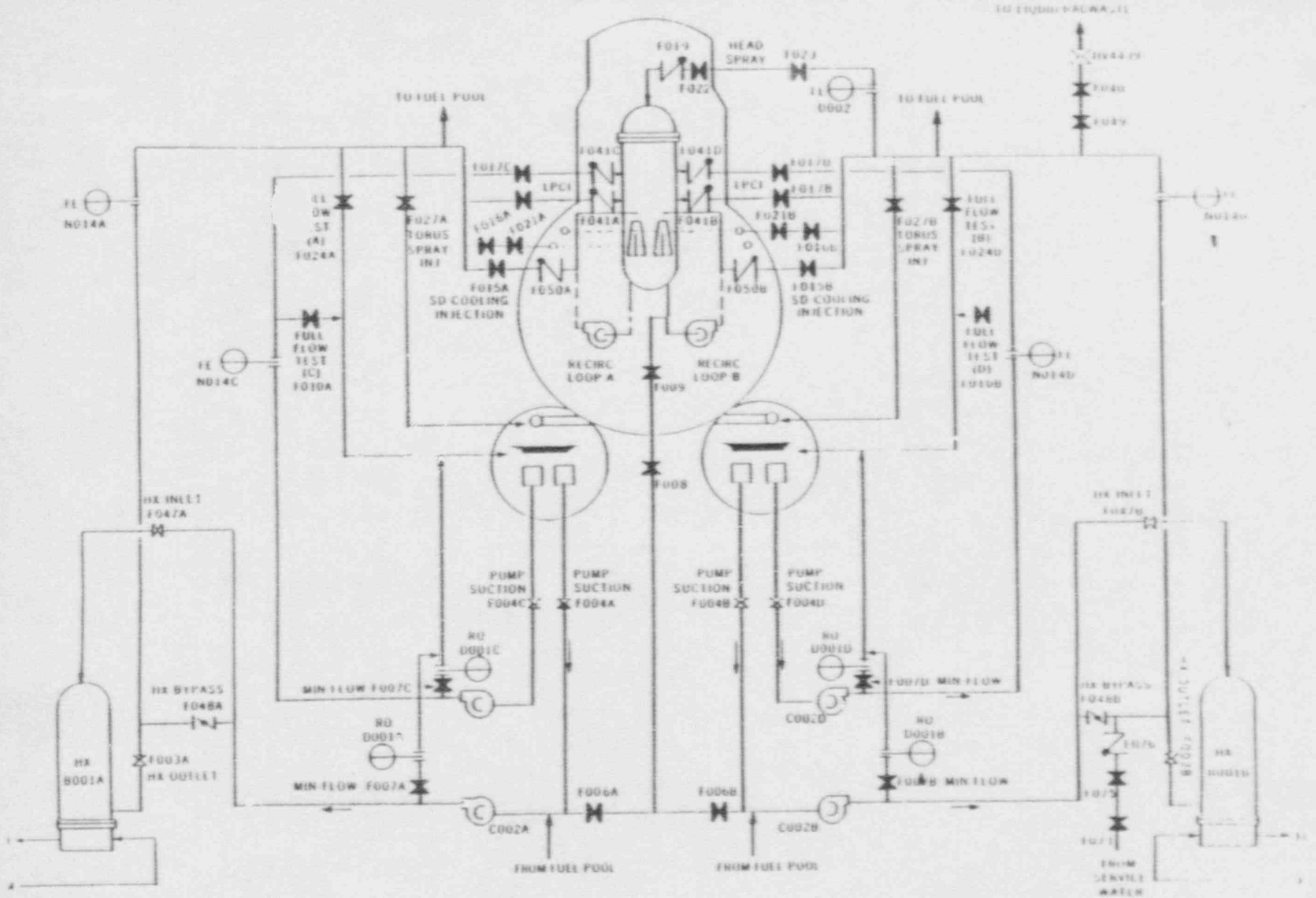
ROD PULL LISTING

Sheet 33

STEP NUMBER	ROD NUMBER	POSITION DATA		COUPLING/ NI CHECK* 4.1.3.6	OPERATORS INITIALS	POSITION DATA CHANGE	
		FROM	TO			FROM	TO
	RWM	GROUP 67	(RSCS	GROUP 9D)	—	—	—
573	14-47	00	04	N/A	JS	00	04
574	46-15	00	04	N/A			
575	46-47	00	04	N/A			
576	14-15	00	04	N/A			
	RWM	GROUP 68	(RSCS	GROUP 8)			
577	26-43	30	36	N/A			
578	34-19	30	36	N/A			
579	42-35	30	36	N/A			
580	18-27	30	36	N/A			
581	34-43	30	36	N/A			
582	26-19	30	36	N/A			
583	42-27	30	36	N/A			
584	18-35	30	36	N/A			
	RWM	GROUP 69	(RSCS	GROUP 8)			
585	18-51	30	36	N/A		✓	—
586	42-11	30	36	N/A			
587	50-43	30	36	N/A			
588	10-19	30	36	N/A			
589	10-43	30	36	N/A			

FIGURE 9


HEAT CAPACITY TEMPERATURE LIMIT
CURVE SPT-T-1
SUPPRESSION POOL
TEMPERATURE (°F)
92.8
280
270
260
256
250
240
230
220
210
200
190
ACTION REQUIRED
199.0
0 100 200 300 400 500 600 700 800 900 1000 1108
RPV PRESS (PSIG)



LP No	301H 000 00H BC01 302H 000 00H 028	REV 5
TITLE	RHR SIMPLIFIED	FIG

FIGURE 10

Nuclear Regulatory Commission
Operator Licensing
Examination

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

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

CANDIDATE'S NAME:_____

FACILITY: Hope Creek 1

REACTOR TYPE: BWR-GE4

DATE ADMINISTERED: 92/06/08

INSTRUCTIONS TO CANDIDATE:

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

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

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

_____
Candidate's Signature

A N S W E R S H E E T

Multiple Choice (Circle or X your choice)

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

MULTIPLE CHOICE

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

A N S W E R S H E E T

Multiple Choice (Circle or X your choice)

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

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

A N S W E R S H E E T

Multiple Choice (Circle or X your choice)

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

092 a b c d ___

093 a b c d ___

094 a b c d ___

095 a b c d ___

096 a b c d ___

097 a b c d ___

098 a b c d ___

099 a b c d ___

100 a b c d ___

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

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)

In accordance with NC.NA-AP.ZZ-0005(Q) "Station Operating Practices," SELECT the normal complement of Fire Brigade personnel for power operations.

a. 3

b. 4

c. 5

d. 6

QUESTION: 002 (1.00)

A normally locked-open, manual valve has been positioned from the shut position to the open position during the completion of a valve lineup. Which of the following is a required action for signing a SECOND verification that the valve is in its normal locked-open position?

a. observe the initial positioner opening the valve and installing the locking device

b. receive a verbal report from the initial positioner that the valve has been opened, then install the locking device

c. physically move the valve in the closed direction enough to ensure that the valve is open, then install the locking device

d. physically move the valve in the closed position without removing the locking device, only enough to verify movement

QUESTION: 003 (1.00)

Using Attachment 3 of NC.AP.ZZ-005(Q),[attached as Figure 1], which of the following specifies the areas and condition where the operator "at the controls" is permitted during reactor operation?

a. Area 1 to receive NSS approval to bypass an APRM

b. Area 2 to brief the SNSS of plant conditions during a plant fire

c. Area 3 to second verify a red blocking tag

d. Area 3 to respond to a Radiation Monitoring Alarm

QUESTION: 004 (1.00)

Which of the following is a tag which unconditionally, blocks and prohibits the operation of equipment bearing the tag?

a. Red Blocking Tag

b. Yellow Permissive Tag

c. Worker's Blocking Tag

d. White Caution Tag

QUESTION: 005 (1.00)

Which of the following is a precaution to be followed in the safe storage of compressed gas cylinders?

a. Full cylinders shall be stored in a horizontal position

b. Cylinders shall be protected from freezing temperatures

c. Empty cylinders shall be stored with the outlet valve open

d. Cylinders may be stored outdoors, but shall be protected from the ground beneath

QUESTION: 006 (1.00)

Which one of the following would approve the final ALARA review for a work activity with an anticipated exposure of 27 person-rem?

a. Senior Nuclear Performance Supervisor (ALARA)

b. Radiation Protection Engineer

c. Manager - Radiation Protection

d. General Manager - Hope Creek Operations for the Station ALARA Committee(SAC)

QUESTION: 007 (1.00)

Which of the following color codes is used by SPDS to indicate that the first alarm point only [for example, low] has been exceeded for a parameter consisting of two alarm points [low and low-low]?

a. green

b. yellow

c. red

d. white

QUESTION: 008 (1.00)

The following plant conditions exist:

Reactor startup is in progress
Recirculation flow transient has occurred
Reactor power is 53% and constant
Core flow is 36%

Given the Power to Flow Map [attached as Figure 2], which of the following actions is appropriate to ensure core stability?

a. Insert control rods in accordance with the Rod Pull Listing to reduce power below 50%

b. Increase recirculation pump speed to greater than 45%

c. Reactor startup may continue with careful monitoring of both IRMs and APRMs

d. The reactor must be MANUALLY SCRAMMED

QUESTION: 009 (1.00)

While implementing OP-EO.ZZ-101, Step RC/L-3 [attached as Figure 3], the following plant conditions exist:

Suppression Pool Temperature is 215 degrees F
RPV Water Level is 12.0 inches and increasing
RHR Pump AP202 is injecting at 5000 gpm
RHR Pump BP202 is injecting at 10000 gpm
Loop A Core Spray is injecting at 600 gpm
Loop B Core Spray is injecting at 1200 gpm
Suppression Chamber Pressure is 5.1 psig

Which one of the following actions is required by RC/L-3?

a. Reduce Loop B Core Spray flow

b. Secure RHR Pump AP202

c. Increase Loop A Core Spray Flow

d. Reduce RHR Pump BP202 flow

QUESTION: 010 (1.00)

The following plant conditions exist:

Reactor scram has occurred
All control rods are inserted
RPV water level is -39 inches and increasing
Drywell Pressure is 1.5 psig
OP-EO.ZZ-101 is being implemented

One minute later, the NCO reports the following:

Both CRD pumps have tripped
RCIC pump has tripped
RPV water level is -28 inches
Drywell Pressure is 1.7 psig

With respect to OP-EO.ZZ-101, which one of the following actions is required to mitigate the transient?

a. Continue with OP-EO.ZZ-101 with emphasis on restoration of reactor water level

b. Exit OP-EO.ZZ-101 and take action as necessary to restore the CRD pumps

c. Exit OP-EO.ZZ-101 and maximize drywell cooling using Drywell Ventilation

d. Exit OP-EO.ZZ-101 and restart the procedure at the beginning

QUESTION: 011 (1.00)

Which one of the following is the MINIMUM emergency event classification in which the entire emergency response organization is required to be activated, including manning of the TSC and EOF?

a. Unusual Event

b. Alert

c. Site Area Emergency

d. General Emergency

QUESTION: 012 (1.00)

SELECT the procedure change that would be acceptable to use an On-the-Spot Change.

a. Change to the purpose of the procedure

b. Addition of new acceptance criteria to the procedure

c. Addition of an equivalent operation of a system to that currently contained in the procedure

d. Removal of a QA hold point at the request of the QA supervisor

QUESTION: 013 (1.00)

Which one of the following modifications requires implementation of NC.NA-AP.ZZ-0013 "Control of Temporary Modifications", including a 10CFR50.59 Safety Review prior to implementation?

a. Connection of a sample tube to a sampling connection to obtain a condensate sample

b. Hanging of lead shielding over a radioactive "hot spot" during the conduct of maintainence on a nearby component

c. Installation of a pressure gauge on an instrument tap during the conduct of a system pressure test

d. Hookup of an air supply hose to a station air manifold during maintainence

QUESTION: 014 (1.00)

The following plant conditions exist:

Reactor Power is 83 %
Four Circulating Water pumps are operating
Condenser pressure is 2.8 inches HgA

A Circulating Water pump trips causing Condenser pressure to instantaneously increase from 4.2 to 4.8 inches HgA. Which one of the following describes the response of the Recirculation Flow Control System?

a. The scoop tube will lockup [brake]

b. An intermediate runback [Speed limiter #2 to 45%] will occur

c. A full runback [Speed limiter #1 to 30%] will occur

d. The recirculation drive motor breaker will trip

QUESTION: 015 (1.00)

The following plant conditions exist:

A reactor transient is in progress
Drywell pressure is 3.0 psig

High Reactor Vessel water level [54 inches] causes the HPCI turbine to trip and water level to drop. Which of the following will cause HPCI to inject?

a. Reactor Vessel water level decreases to 12.5 inches

b. Level 8 seal-in pushbutton is depressed

c. HPCI Booster pump suction pressure drops below 15 inches Hg

d. Reactor Vessel water level decreases to -30 inches

QUESTION: 016 (1.00)

The following plant conditions exist:

A reactor transient is in progress
Drywell Pressure is 2.2 psig

The HPCI "TURBINE TRIP" manual pushbutton is depressed. Which of the following states a response of the HPCI system?

a. HPCI inboard steam supply valve, HV-F002 and the warmup line isolation valves will shut, the turbine will trip, and the isolation valve control switches must be taken out of OPEN and placed back in OPEN before release of the TRIP pushbutton will allow HPCI restart

b. HPCI turbine steam stop valve, FV-4880, only, will shut, but will reopen and injection will reinitiate when the TRIP pushbutton is released

c. HPCI turbine steam stop valve, FV-4880, the pump minimum flow valve, HV-F01?, as well as both discharge valves to core spray and feedwater shut, but will reopen and injection will reinitiate when the TRIP pushbutton is released

d. HPCI turbine steam stop, FV-4880, only, will shut, and must be manually reopened to reinitiate injection after the TRIP pushbutton is released

QUESTION: 017 (1.00)

The following plant conditions exist:

A reactor transient is in progress
Drywell Pressure is 2.8 psig
Reactor pressure is 500 psig

Which of the following states the operational lineup of Core Spray ?

a. Four pumps are running with suction from the CST, both upstream and downstream injection valves [F004A/B and F005A/B] are open, flow is into the reactor thru the Core Spray Spargers

b. Four pumps are running with suction from the CST, upstream injection valves [F004A/B] are open, downstream injection valves [F005A/B] are closed, flow is thru the minimum flow lines back to the CST

c. Four pumps are running with suction from the Torus, upstream injection valves [F004A/B] are open, downstream injection valves [F005A/B] are closed, flow is thru the minimum flow lines to the Suppression Pool

d. Four pumps are running with suction from the Torus, both upstream and downstream injection valves [F004A/B and F005A/B] are open, flow is into reactor thru the Core Spray Spargers

QUESTION: 018 (1.00)

The following plant conditions exist:

Loss of offsite power [LOP] has occurred
Standby Diesel Generator D failed to start

The NSS has ordered that boron be injected into the reactor using Standby Liquid Control. Which of the following states the electrical availability of SLC for injection?

a. Both SLC pumps and both squib valves

b. SLC pump A and squib valve F004A ONLY

c. SLC pump B and squib valve F004B ONLY

d. NEITHER SLC pump is available

QUESTION: 019 (1.00)

The Reactor Mode Switch is in the REFUEL position. Which of the following Scram functions is REQUIRED?

a. Main steam line Hi radiation

b. Hi Drywell pressure

c. APRM Hi neutron flux [15%]

d. Reactor vessel water level, Low Level 3

QUESTION: 020 (1.00)

The following plant conditions exist:

Reactor is shutdown
RHR-Shutdown Cooling is in operation
MSIVs are open
RPS Bus Transfer Switch is in the ALT B position, RPS bus B is powered from backup supply MCC 10B131 through transformer 1BX432

Select the plant response to the positioning of the Bus Transfer Switch from ALT B to NORMAL;

a. RHR shutdown cooling isolation valves will close

b. A full scram signal will actuate

c. MSIVs will shut

d. Standby Diesel Generator B will start

QUESTION: 021 (1.00)

The plant is in operational condition 4 when the input power supply breaker to one 24 VDC battery charger [1AD304] for SRM Channel A and C Electronic Circuits is opened, removing the charger from service. Which of the following describes a LONG-TERM effect of disabling the charger on the corresponding SRM channels?

a. SRM channels A and C will continue to operate so long as the second battery charger remains in service

b. The SRMs will dissipate the battery power and over time, SRM channels A and C will drift downscale

c. The SRMs will dissipate the battery power and over time, SRM channels A and C will drift upscale

d. SRM channels A and C will continue to operate, but the SRM drive motors will not have adequate power to drive the detectors

QUESTION: 022 (1.00)

Which one of the following will cause the APRM A "UPSC TR OR INOP" [red] status lite to actuate?

a. APRM A bypassed

b. less than 2 LPRM inputs for level C to APRM A

c. APRM power less than 4 percent

d. less than 14 LPRM inputs to APRM A

QUESTION: 023 (1.00)

With regard to reactor vessel level indication, which of the following is Instrument Zero?

a. Top of the RPV bottom head

b. Top of the jet pump throat [2/3 core height]

c. Top of active fuel region

d. Bottom of steam dryer lower skirt

QUESTION: 024 (1.00)

The following plant conditions exist:

A steam line break has occurred
ECCS injection has occurred
Vessel shell temperature is 95 degrees F
Vessel head temperature is 101 degrees F
Recirculation pump A is operating

Which of the following reactor vessel level instruments would provide the most accurate indication of vessel level, without correction?

a. Wide Range

b. Upset Range

c. Shutdown Range

d. Fuel Zone Range

QUESTION: 025 (1.00)

In which of the following RCIC trips, is local operation of the trip mechanism required to restore RCIC to operation?

a. Mechanical Overspeed at 125% of 4500 RPM

b. Hi turbine exhaust pressure

c. Turbine trip pushbutton depressed

d. Reactor vessel Hi level 8

QUESTION: 026 (1.00)

The following plant conditions exist:

A reactor transient is in progress
Drywell Pressure is 2.1 psig and increasing
Reactor level is -136 inches and dropping
RHR pumps A and C are running
100 seconds have timed out on the ADS timer

The ADS "INIT AND SEAL IN RESET" pushbutton is depressed. Assuming no change in plant conditions, which of the following identifies the status of ADS?

a. ADS will initiate in 5 seconds

b. ADS will initiate in 105 seconds

c. ADS will initiate in 5 minutes

d. ADS will not auto-initiate

QUESTION: 027 (1.00)

The following plant conditions exist:

A reactor transient is in progress
Drywell pressure is 1.69 psig
Reactor level is -140 inches
30 seconds have timed on the ADS timer

Question 27 deleted JS 6/22/92

At 90 seconds on the ADS timer, Drywell pressure has been reduced to 1.6 psig. Which of the following states the response of ADS to plant conditions?

a. ADS will not auto-actuate

b. ADS will auto-actuate in 15 seconds

c. ADS will auto-actuate in 3.5 minutes

d. ADS will auto-actuate in 5 minutes

QUESTION: 028 (1.00)

An ADS-SRV has actuated and has shut. Which of the following would be a consequence if the associated SRV tailpipe vacuum breaker was stuck in place and would not actuate?

a. Damage to the T-Quencher during a subsequent ADS actuation

b. Drift of the ADS lift setpoint

c. Corrosion of the ADS valve internals

d. Torus atmosphere fills the tailpipe after ADS actuation

QUESTION: 029 (1.00)

Which of the following is a function of the Torus-to-Drywell Vacuum Breakers?

a. Prevents Torus pressure from damaging the drywell after a LOCA

b. Allow non-condensible gasses to enter the drywell to prevent exceeding the drywell design external pressure limit

c. To allow hot liquid to enter the Torus during the blowdown phase of a LOCA

d. Prevent the drawing of Torus water into the drywell vents during steam condensation after a LOCA

QUESTION: 030 (1.00)

The following plant conditions exist:

A LOCA has occurred
ECCS equipment is operating
Drywell pressure is 1.79 psig

Which of the following describes the operation of Drywell Ventilation during the mitigation of the transient?

a. Drywell cooling continues to operate, but is insufficient to prevent drywell pressurization

b. Drywell cooling fans have tripped and must be manually restarted

c. Drywell cooling fans trip when the LOCA is actuated, but are restored within 13 seconds by the sequencer

d. Drywell cooling continues to operate, but the cooling coils must be manually aligned to RACS

QUESTION: 031 (1.00)

A limitation stated in HC.OP-SO.GS-0002, HYDROGEN/OXYGEN ANALYZER SYSTEM OPERATION, states that when changing the system from STANDBY to ANALYZE, 90 minutes shall be allowed. Which of the following is the basis for this limitation?

a. To permit the analyzers to warmup

b. To ensure adequate containment atmosphere mixing prior to sampling

c. To ensure the sample being analyzed is representative of containment conditions

d. To allow chemistry technicians time to calibrate the analyzer

QUESTION: 032 (1.00)

Using the attached Figure 4, which of the following describes the Instrumentation Status indicated by flashing of the Channel A, Amber, Containment Isln Man Initiation, TRIPPED, lite?

a. Half trip of PCIS Channel A from Core Spray logic

b. PCIS Channel A isolation from Level 2 logic

c. Half trip of A inboard and outboard MSIVs

d. Isolation of A inboard MSIVs

QUESTION: 033 (1.00)

The following plant conditions exist:

Control has been established at the RSP
All Emergency Transfer Switches have been placed in EMERGENCY
Plant pressure is 1050 psig.

Which of the following states the number of Safety Relief Valves that open in response to the high pressure?

a. None

b. 1

c. 2

d. 3

QUESTION: 034 (1.00)

The following plant conditions exist:

Reactor Power is 88 percent
Equilibrium Xenon exists

The Steam Throttle Pressure to the A EHC regulator fails downscale. Which of the following states the resulting affect of the failure on reactor pressure? [See attached Figure 5, EHC Logic]

a. Pressure increases by 3 psig

b. Pressure decreases by 3 psig

c. Pressure increases causing a reactor scram

d. Pressure decreases causing an MSIV isolation

QUESTION: 035 (1.00)

Which of the following states the consequence to plant operation of the failure of the Setpoint Set-Down feature of Reactor Water Level Control, assuming a reactor scram has occurred ?

a. Reactor feedpumps trip on overspeed

b. Cavitation of the Reactor Recirculation pumps

c. Reactor feedpumps trip on high reactor level

d. Group 1 isolation causes loss of the main condenser as a heat sink

QUESTION: 036 (1.00)

The following plant conditions exist:

Reactor Power is 94 percent
Reactor Water Level Control Channel A is selected
Master Level Controller is in AUTO

A small leak develops through the channel A level detector equalizing line. Which of the following states a response of the Reactor Water Level Control system to the leak?

a. Actual reactor water level will increase resulting in a High Level Alarm

b. The reactor feed pump will lock and actual reactor level will remain unchanged

c. A recirculation pump runback will occur

d. Actual reactor water level will fall resulting in a lower indicated Channel B level

QUESTION: 037 (1.00)

Which of the following states the MINIMUM number of independent cold diesel engine starts provided by the Two Air Receiver Tanks associated with each EDG?

a. 3

b. 5

c. 7

d. 9

QUESTION: 038 (1.00)

Using the attached Figure 6, CRD Hydraulic System, which of the following is the Directional Control Valve NOT used during the a control rod Insert?

a. 120

b. 121

c. 122

d. 123

QUESTION: 039 (1.00)

During a reactor startup, the reactor engineer requests that a control rod be continuously withdrawn from the full in to the full out position. Which one of the following describes the operator actions necessary to perform this continuous withdrawal?

a. Depress and hold the WITHDRAW pushbutton

b. Depress and hold the CONTINUOUS WITHDRAW pushbutton

c. Depress and hold the ROD DRIFT RESET and the CONTINUOUS WITHDRAW pushbuttons

d. Depress and hold the WITHDRAW and CONTINUOUS WITHDRAW pushbuttons

QUESTION: 040 (1.00)

The following plant conditions exist:

Reactor startup is in progress
Next rod pull is step 341, sheet 19, attached as Figure 7
The operator mistakenly selects control rod 34-27,[step 342].
Reactor power is 13 percent

If an RSCS failure to limit rod motion occurs, which of the following is the MAXIMUM position that rod 34-27 can be pulled?

a. Notch 08, [no rod motion will occur]

b. Notch 12

c. Notch 14

d. Notch 48, [no rod block will be activated]

QUESTION: 041 (1.00)

The following plant conditions exist:

Reactor startup is in progress
Next rod pull is Sheet 33, step 574, attached as Figure 8
APRM power is 22 percent
Total steam flow is 21 percent
Feedwater Control is in manual
Turbine first stage pressure channel A is 22 percent
Turbine first stage pressure channel B is 18 percent

The operator selects rod 46-15 and begins the rod pull. Which of the following states the MAXIMUM position and expected indication to which the selected rod can be pulled?

a. Position 04 with an RWM block

b. Position 06 with an RWM block

c. Position 48 with an RWM WITHDRAW ERROR alarm

d. Position 04 with an RSCS WITHDRAW BLOCK

QUESTION: 042 (1.00)

A reactor transient causes water level to fall to -38 inches. Which of the following states the result of -38 inch reactor level on the reactor recirculation system?

a. The scoop tube positioner will runback to 30 percent and then the positioner will lock

b. Both the generator drive motor breaker and the recirculation pump power supply breaker [RPT] will open

c. Both the recirculation pump power supply breaker [RPT] and the generator field breaker will open

d. The scoop tube positioner will runback to 30 percent and then the generator drive motor breaker will open

QUESTION: 043 (1.00)

A multiple Reactor Recirculation Pump seal failure has occurred which requires that the affected pump be tripped and isolated. After tripping the pump, which of the following states why the pump suction valve would be closed before the pump discharge valve?

a. To ensure continued reactor water cleanup system operation

b. To prevent water hammer in RHR piping

c. To ensure that the leak can be isolated

d. To prevent a reactor water level transient

QUESTION: 044 (1.00)

The following plant conditions exist:

Reactor power is 84 percent
Reactor Water Cleanup is in a normal lineup
RWCU isolation valve, 'VF0004, is failed open and will not shut

Which of the following states the immediate impact on plant operations of the isolation of RACS flow to the RWCU non-regenerative heat exchangers?

a. High differential temperature in the non-regenerative heat exchangers will cause excessive stress and possible tube failure

b. High temperature flow in the RWCU filter demins will cause breakdown of the resins

c. Boiling in the non-regenerative heat exchangers will cause the RWCU pumps to trip on low flow

d. High pressure in the non-regenerative heat exchangers will cause the shell side relief valve to lift

QUESTION: 045 (1.00)

Which of the following will result in a Rod Block Monitor trip [control rod withdrawal block] ?

a. The RBM count circuit detects 3 of 8 LPRM inputs for the selected rod above the downscale trip setpoint

b. With two recirculation pumps operating at 25 percent flow, the RBM averaging circuit output signal is 38 percent

c. APRM Channel A reads 25 percent power

d. A peripheral control rod is selected with the RBM bypass switch in the CHANNEL A position

QUESTION: 046 (1.00)

The reactor is operating at full power when the main turbine front standard trip lever is actuated. Which of the following valve groups if closed, will open in response to the turbine trip?

a. Intercept valves

b. Intermediate stop valves

c. Extraction steam supply line drain valves

d. Feedwater heater extraction non-return (bleeder trip) valves

QUESTION: 047 (1.00)

During feedwater pump startup using OP-SO.AE-0001, Feedwater System Operation, Reactor Feed Pump Min Recirc Line Isolation, is opened before steam is admitted to the turbine. Which one of the following states why the recirculation line isolation valve is MANUALLY cracked open prior to energizing the motor actuator?

a. To prevent water hammer in the recirculation line

b. To limit the thermal stress on the condenser piping

c. To prevent cavitation in the Number 6 feedwater heaters

d. To ensure the valve disc is not thermally bound to the seat

QUESTION: 048 (1.00)

Which of the following describes the power supply arrangement to loads having an Uninteruptable Power Supply [UPS] ?

a. 480 VAC as the preferred source is rectified and auctioneered with 480 VAC backup power. The auctioneered output is input to the static inverters thru a static switch. The inverter output is auctioneered with 125 VDC to provide power to the loads.

b. Normal 480 VAC is rectified and provided to the static inverters. The static switch is used to select either the inverter output or unregulated 120 VAC backup power to supply the loads.

c. The static switch is used to select a 480 VAC power supply to the static inverter. The inverter output is provided directly to the loads.

d. 480 VAC is rectified and auctioneered with 125 VDC to supply the static inverters. The static switch selects either the inverter output or the regulated 120 VAC backup supply to provide power to the loads.

QUESTION: 049 (1.00)

Which of the following states the automatic actuation sequence for the Fire Protection System fire pumps?

a. The jockey pump cycles on at 115 psig and off at 125 psig fire main pressure. The motor driven pump which starts at 110 psig and the diesel driven pump which starts at 100 psig must both be manually stopped.

b. The jockey pump cycles on at 115 psig and off at 125 psig fire main pressure. The motor driven pump cycles from 110 to 130 psig and the diesel pump cycles from 100 to 140 psig.

c. The jockey pump starts at 115 psig, the motor driven pump starts at 110 psig, and the diesel driven pump starts at 100 psig. All three pumps must be manually stopped.

d. The jockey pump cycles on at 115 psig and off at 125 psig. The motor driven pump will start at 110 psig and must be manually stopped. The diesel pump is manually started and stopped as needed.

QUESTION: 050 (1.00)

Which of the following will cause the Control Room Ventilation system to automatically shift to the Isolate Mode of operation ?

a. Smoke in the control room air supply

b. Greater than 4 percent hydrogen in control room air exhaust

c. High radiation in the air supply intake

d. Reactor low level 2 [-38 inches]

QUESTION: 051 (1.00)

A Traversing In-Core Probe trace is being performed using automatic operation. Which of the following states the response of the TIP system when a NSSSS Channel A isolation is actuated with one detector in the core?

a. The shear valve associated with the inserted detector fires isolating that detector. Other TIP guide tubes are isolated by the normally closed ball valves.

b. The inserted detector is withdrawn at fast speed to the in-shield position and the associated ball valve will close.

c. All shear valves will actuate isolating the guide tubes.

d. The trace continues unaffected by the isolation however the NSSSS must be reset before any additional detectors can be inserted into the core.

QUESTION: 052 (1.00)

Which of the following systems removes heat directly from the fuel pool cooling heat exchangers ?

a. SACS

b. RACS

c. Service Water

d. Residual Heat Removal

QUESTION: 053 (1.00)

The plant is operating at full power with the A MSL radiation monitor failed upscale, [INOP]. A faulty fuse in the B RPS power supply causes a loss of power to the B MSL radiation monitor. Which of the following describes the automatic action that occur ?

a. All MSIVs will shut and a reactor scram will occur

b. Two steam lines will isolate and a 1/2 reactor scram [MSIV closure] will be generated

c. MSIVs remain open and a 1/2 reactor scram [MSL HI RAD] will be generated

d. All MSIVs remain open but a reactor scram [MSL HI RAD] occurs

QUESTION: 054 (1.00)

OP-EO.ZZ-102, Primary Containment Control, Step DW/P-10, allows the Suppression Pool to be vented if suppression pool level is 180 inches or less. Which of the following states a reason why venting is performed only when level is less than 180 inches ?

a. Prevents exceeding suppression pool loading limits

b. Ensures availability of RHR for long term cooling

c. Ensures integrity of the suppression pool vent piping

d. Prevents damage to the SRV tailpipe vacuum breakers

QUESTION: 055 (1.00)

The following plant conditions exist:

All feedwater pumps have tripped
Reactor power is 70 percent
SLC initiation timer has been actuated on Low level ONLY

One minute after the SLC initiation timer has timed out, which of the following conditions will result in the immediate automatic actuation of the Standby Liquid Control ?

a. One SRV is cycling open and shut
All APRM mode switches are in STANDBY
Reactor Water level is 11 inches and rising
A reactor feedwater pump has been started

b. Reactor Pressure is 950 psig
Four APRMs read 14 percent power
Reactor Water level is -47 inches
RRCS RESET pushbutton has been depressed

c. Three SRVs are actuated
All APRMs are downscale
Reactor Water level is - 47 inches
RRCS Manual Initiation pushbutton has been depressed

d. All SRVs are shut
Five APRMs read 20 percent power
Reactor Water level is -12 inches and falling
A reactor feedwater pump has been started

QUESTION: 056 (1.00)

A failure to Scram has occurred and no SLC pumps are available. In accordance with OP-EO.ZZ-101, which of the following describes an alternate boron injection path using the contents of the SLC tank ?

a. The SLC tank is pressurized and the contents are drained into the zinc injection tap in the condensate system. The zinc injection path is lined up to the suction of HPCI and boron is injected into the reactor using the HPCI pump discharge

b. Tank contents are drained into the suction piping for the CRD pumps and injected into the reactor thru the CRD cooling water header

c. Tank contents are siphoned into the suction of the RWCU pumps then bypassed around the filter demins and into the reactor using RWCU pumps

d. Tank contents are drained into the RWCU precoat tank and into the cleanup filter demins and then backwashed into the reactor using RWCU pumps

QUESTION: 057 (1.00)

OP-EO.ZZ-104, Radioactive Release Control, directs that if Turbine Building Ventilation is shutdown, then Restart Turbine Building Ventilation. Which of the following is a basis for this action ?

a. The ventilation system maintains a positive pressure which would mitigate reactor building leakage into the turbine building

b. The ventilation system would assist in monitoring of the off-site release

c. Use of the turbine building ventilation would limit intrusion of radioactive contamination into the control room

d. Turbine building instrumentation is not qualified for operation in a radiation environment hence, radiation levels must be minimized for plant monitoring

QUESTION: 058 (1.00)

A trip of circulating water pumps has caused a severely degraded main condenser vacuum condition which has resulted in a Main Turbine Trip [7.5 inches HGA]. Which of the following Automatic Actions should have preceeded the main turbine trip as vacuum was degrading ?

a. Reactor Feedwater Pump trip

b. Bypass Valve closure

c. MSIV closure

d. Recirc Pump full runback

QUESTION: 059 (1.00)

During the mitigation of a reactor transient, suppression pool level drops to below 74.5 inches. OP-EO.ZZ-102, Primary Containment Control, requires that suppression pool level be restored. Which of the following is NOT a method of adding water to the suppression pool as authorized by the Primary Containment Control procedure ?

a. Makeup from the Hope Creek Fire Truck thru RHR Loop B

b. Makeup from the CST using the RCIC pump discharging thru the minimum flow valve

c. Makeup from the Main Condenser Hotwell thru the Loop A Core Spray pumps thru the minimum flow valves

d. Makeup from Service Water thru the RHR system

QUESTION: 060 (1.00)

The Intermediate Range Monitor Neutron Flux - High Scram setpoint is 120/125 divisions of scale in each range. Which of the following is a Technical Specification basis for this Scram ?

a. Provides protection against continuous withdrawal of control rods

b. Ensures overlap of neutron monitoring ranges during power changes

c. Ensures adequate margin to the thermal hydraulic safety limit

d. Provides protection to the reactor vessel from pressure spikes during reactor transients

QUESTION: 061 (1.00)

The following plant conditions exist:

Reactor is at power
Grid Voltage has become degraded
The TRIP pushbutton on the 4160 VAC supply to vital bus 10A403, Panel 10C651E has started flashing

Which of the following states the automatic actions that occur if the flashing TRIP Pb is acknowledged ?

a. When bus voltage is degraded to 70 percent of normal, the normal supply breaker will open, the alternate feeder will not shut, and the EDG output breaker will close to supply the 10A403 bus

b. The associated EDG will auto-start and the EDG output breaker will close to supply the bus

c. The alternate supply breaker will not trip on undervoltage

d. The 10A403 bus will remain deenergized

QUESTION: 062 (1.00)

The following plant conditions exist:

Reactor Power is 12 percent
Control rod withdrawal is in progress

Which of the following states an immediate operator action when a power increase due to a dropped control rod occurs ?

a. Allow power to stabilize, then override the RSCS and RWM rod blocks and insert the dropped control rod

b. Raise the drive water to reactor pressure to 300 psig then take action to fully insert the dropped control rod

c. Insert control rods, in sequence, to terminate the power increase

d. Continue to withdraw control rods until power is stabilized at greater than 20 percent

QUESTION: 063 (1.00)

The reactor is operating at 98 percent power with water level control in three-element, automatic control when the following automatic actuations are received:

Reactor Feedwater pumps runback to 80 percent
Recirculation pumps runback to 45 percent

Which of the following is a cause for the automatic actuations ?

a. One primary condensate pump has tripped

b. One secondary condensate pump has tripped

c. A circulating water pump has tripped resulting in degraded condenser vacuum

d. The Redundant Reactivity Control System has been actuated

QUESTION: 064 (1.00)

In accordance with OP-EO.ZZ-102 B, Primary Containment Control, Drywell sprays have been initiated when the following conditions were reached;

Suppression Chamber Pressure 10.2 psig
Suppression Pool level 102 inches
Drywell Pressure 7 psig
Drywell Temperature 228 degrees F

Which of the following is a condition and a reason for terminating Drywell Spray ?

a. When drywell temperature drops below 100 degrees F to prevent exceeding the suppression chamber dynamic loading limits

b. When suppression chamber pressure falls below 2.7 psig to prevent cavitation of the RHR pumps

c. When drywell pressure falls below 2.7 psig to prevent saturated conditions in the drywell

d. When drywell pressure drops below 1.68 psig to ensure the integrity of the primary containment

QUESTION: 065 (1.00)

The following plant conditions exist:

A reactor scram has occurred
Turbine bypass valves have failed to actuate
SRVs have failed to actuate

SELECT the method that can provide the largest cooldown rate:

a. One reactor feedpump operating with the pump discharge valve closed and the pump running on minimum flow

b. Operating the RWCU in the recirculation mode

c. RCIC operating at rated flow CST to CST

d. HPCI operating at rated flow CST to CST

QUESTION: 066 (1.00)

The plant is operating at 70% Rx power and a main generator stator cooling high temperature condition occurs. Assume the high temperature condition does not clear and no operator response. Select the expected plant response.

a. A scram occurs on due to the resultant high pressure transient.

b. The main generator control valves close and the turbine bypass valves open until reactor power is stabilized at a lower steady state value.

c. A scram occurs on reactor low level.

d. A scram occurs on low ETS pressure due to TCV fast acting solenoids energizing.

QUESTION: 067 (1.00)

Which of the following conditions requires an immediate MANUAL trip of the main turbine ?

a. Reactor vessel low level 3 with no rod motion

b. Low ETS hydraulic fluid pressure downstream of the Master Trip Solenoid valve

c. The "UNIT PROT LOCKOUT RELAY TRIP" annunciator [E1-A5] is received

d. Main turbine journal bearing vibration increasing past 12 mils at rated power

QUESTION: 068 (1.00)

A main turbine trip occurs without control rod motion. RRCS initiation results in boron injection using SLC. Which of the following conditions allows SLC pumps to be tripped ?

a. SLC tank level is 250 gallons

b. The reactor engineer has determined that the reactor will remain shutdown when reactor temperature is greater that 190 degrees F

c. Two peripheral control rods are at Notch 8, all other control rods are fully inserted

d. The reactor engineer has determined that enough boron has been injected to prevent criticality

QUESTION: 069 (1.00)

Which of the following would NOT be a source of measurable hydrogen in the primary containment during a reactor accident ?

a. High temperature reaction of fuel clad with water

b. Radiolytic breakdown of water

c. Breakdown of boric acid following SLC initiation

d. Hydrogen injected into feedwater during reactor operation

QUESTION: 070 (1.00)

The suppression pool temperature leg of OP-EO.ZZ-102A, Primary Containment Control, requires emergency RPV depressurization if plant conditions cannot be maintained below the HCTL curve of SPT-T-1, attached as Figure 9. Which of the following states the reason that emergency depressurization is performed if the limits of the HCTL cannot be maintained ?

a. Ensures that the suppression pool temperature instrument will provide accurate readings

b. Prevents RHR pump cavitation

c. Prevents containment failure

d. Ensures adequate core cooling

QUESTION: 071 (1.00)

A failure-to-scram event is in progress and EOPs specify that condenser vacuum be maintained. Which of the following is NOT permitted in conducting this action ?

a. Defeat PCIG isolation interlocks

b. Defeat instrument air isolation interlocks

c. Bypass mechanical vacuum pump Hi radiation trip

d. Bypass MSIV isolation on Level 1

QUESTION: 072 (1.00)

A malfunction in the recirculation pump trip circuitry causes a trip of the A recirculation pump resulting in the following transient plant conditions:

Core Flow 35 percent
Reactor power 46 percent

The second recirculation pump then trips when its RPT breaker opens. Using the attached Power to Flow map, which of the following actions is appropriate ?

a. Drive rods using the stuff sheet to reduce power to less than 42 percent

b. Place the reactor mode switch in SHUTDOWN

c. Verify indications of core flow and ensure reactor power is stable to within 10 percent power oscillations, otherwise, Scram the reactor

d. Within 15 minutes, take action to restore one recirculation pump to operation

QUESTION: 073 (1.00)

A 250 VDC Class 1E Battery Charger fails. Which of the following states a consequence to plant operation of this failure?

a. After 4 hours, Main Turbine journal bearing high temperature alarms may be received

b. After 4 hours, High Pressure Coolant Injection may be inoperable

c. After 12 hours, Source Range indication will be unavailable

d. If after 12 hours, a LOCA signal is received, the Core Spray pump breaker will not close

QUESTION: 074 (1.00)

The reactor is operating at full power when a trip of the RPS B MG Set occurs. Assuming no other system faults, which of the following automatic actions will have occurred ?

a. The Traversing incore probe will be withdrawn and its ball valve will close

b. The Primary Instrument Gas supply valves will shut

c. The Reactor Water Cleanup system will isolate

d. The reactor will Scram

QUESTION: 075 (1.00)

Refueling is in progress when the Refueling SRO leaves the refueling area. Which of the following conditions is required as the SRO leaves ?

a. The SRO must conduct a complete turnover with the refueling bridge operator for fuel movement to continue

b. A control room SRO must continually monitor Source Range counts during any continued core alterations

c. The refueling platform shall not be placed over the reactor cavity for continued core alterations

d. Only core alterations involving incore instruments and reactivity controls can be conducted

QUESTION: 076 (1.00)

The core is being unloaded into the fuel pool when the following alarms are received:

FUEL POOL LEVEL HI/LO
FUEL POOL COOLING LEAKAGE HI
FUEL POOL COOLING SYS TROUBLE
REFUELING FLOOR AIRBORNE ACTIVITY HI

Which of the following is actions would be appropriate ?

a. Isolate Service/Instrument Air to the Reactor Well to Dryer Seperator Pool gate seals

b. Dispatch operators to the refueling floor to monitor fuel pool level

c. Lower an irradiated fuel assembly into the vessel

d. Trip the Fuel Pool Cooling Pumps

QUESTION: 077 (1.00)

Select the basis for tripping the Main Turbine at 50 MWe during the conduct of OP-EO.ZZ-100, Reactor Scram.

a. To minimize the possibility of damage to the Main Generator

b. To prevent turbine damage from carryover of wet steam

c. To minimize the possibility of using SRVs for pressure control

d. To prevent thermal stratification of the Reactor Vessel

QUESTION: 078 (1.00)

The reactor is operating at full power when the following conditions are identified:

DRYWELL PRESSURE HI/LO annunciator
Drywell pressure is increasing

Which of the following actions is taken if a reactor scram has not occurred?

a. Reduce reactor power

b. Initiate Suppression Pool Cooling

c. Initiate Drywell Sprays

d. Increase Drywell Cooling

QUESTION: 079 (1.00)

The reactor has been operating at full power when a transient results in two minutes of operation with a stuck open SRV. Which of the following actions is required ?

a. Reduce pressure to less than 875 psig by adjusting the Pressure Set pushbuttons

b. Reduce reactor power by inserting control rods

c. Place the mode switch in SHUTDOWN

d. Reduce recirculation to minimum speed

QUESTION: 080 (1.00)

A fire is in progress and the SNSS has determined that the control room will be abandoned. The reactor mode switch has been placed in SHUTDOWN. Which of the following immediate actions is also required by OP-AB.ZZ-130, Control Room Evacuation ?

a. Ventilate the control room with outside air

b. Trip the main turbine

c. Start one train of ECCS

d. Open 5 SRVs to depressurize the reactor

QUESTION: 081 (1.00)

HC.OP-AB.ZZ-0133, Loss of Instrument Gas, requires that before Instrument Gas Pressure drops below 45 psig, reactor power be reduced with both recirculation and control rods as quickly as possible. Select a reason why the action is "as quickly as possible".

a. Ensure reactor shutdown before ADS is inoperable

b. Mitigate the effect of MSIV closure

c. Reduce heat load in the drywell

d. Mitigate the effect of multiple control rods drifting

QUESTION: 080 (1.00)

A fire is in progress and the SNSS has determined that the control room will be abandoned. The reactor mode switch has been placed in SHUTDOWN. Which of the following immediate actions is also required by OP-AB.ZZ-130, Control Room Evacuation ?

a. Ventilate the control room with outside air

b. Trip the main turbine

c. Start one train of ECCS

d. Open 5 SRVs to depressurize the reactor

QUESTION: 081 (1.00)

HC.OP-AB.ZZ-0133, Loss of Instrument Gas, requires that before Instrument Gas Pressure drops below 45 psig, reactor power be reduced with both recirculation and control rods as quickly as possible. Select a reason why the action is "as quickly as possible".

a. Ensure reactor shutdown before ADS is inoperable

b. Mitigate the effect of MSIV closure

c. Reduce heat load in the drywell

d. Mitigate the effect of multiple control rods drifting

QUESTION: 082 (1.00)

In accordance with the immediate actions of OP-AB.ZZ-131, Loss of Instrument Air and/or Service Air, which of the following states a requirement for initiating a manual reactor Scram ?

a. The standby Service Air Compressor fails to start in 45 seconds

b. Two control rod drifts are detected

c. The H2O2 injection valves have isolated

d. An accumulator trouble alarm occurs

QUESTION: 083 (1.00)

In accordance with OP-AB.ZZ-105, Loss of CRD Regulating Function, if the reactor is operating at 30 percent power with no CRD pumps operating, how much time is allowed to restore charging water header pressure with no accumulator alarms, before a manual Scram must be initiated ?

a. 1 minute

b. 2 minutes

c. 10 minutes

d. 20 minutes

QUESTION: 084 (1.00)

Which of the following conditions requires entry into OP.EO.ZZ-101, RPV Control ?

a. Primary Containment Hydrogen above 2 percent

b. Drywell Temperature at 141 degrees

c. Drywell Pressure at 1.48 psig

d. RPV Water Level below 12 inches, Reactor power 5 percent

QUESTION: 085 (1.00)

OP-EO.ZZ-101, RPV Control, Step RC/L-6, directs that level be maintained above -161 inches if it cannot be maintained above 12.5 inches as directed in RC/L-4. Which of the following provides a basis for the lower control band limit of -161 inches ?

a. This limit assures that MSIVs will remain open to allow the main condenser to be used as a heat sink

b. This limit assures core cooling because the core remains submerged

c. This limit allows steam cooling as 2/3 of the core remains submerged

d. This limit assures that the ADS timer does not actuate

QUESTION: 086 (1.00)

OP-EO.ZZ-206, Reactor Flooding, states in step RF-19 that injection into the RPV should continue so long as RPV pressure remains at least 75 psig above suppression chamber pressure. Select the basis for maintaining the 75 psig pressure margin between the reactor and the suppression chamber:

a. Assures that RHR heat exchanger thermal limits will not be exceeded

b. Assures that decay heat will be adequately removed from the reactor

c. Assures that the required number of SRVs will remain open

d. Assures that water will not be siphoned into the SRV tailpipes

QUESTION: 087 (1.00)

The following plant conditions exist:

Reactor power is 98 percent
EDG D is being operated for surveillance testing

Swamp grass causes clogging and loss of Service Water flow to ALL SACS heat exchangers. Which of the following is the appropriate immediate operator response ?

a. Slowly unload and secure the EDG

b. Fully open the SACS heat exchanger bypass valves and place the temperature controllers in MANUAL

c. Place the Reactor Mode Switch in SHUTDOWN

d. Initiate a Manual depressurization using ADS valves

QUESTION: 088 (1.00)

The following plant conditions exist:

Reactor power 98 percent
RACS pump C is out-of-service

A malfunction in the LOCA Level 1 protection system causes the simultaneous trip of both RACS A and B pumps. Which of the following operator actions is required by HC.OP-AB.ZZ-123, Loss of Reactor Auxiliary Cooling ?

a. Trip both Reactor Recirculation pumps

b. Augment Fuel Pool Cooling with RHR

c. Inhibit auto-start of HPCI

d. Depressurize the reactor using 5 ADS SRVs

QUESTION: 089 (1.00)

A plant startup is in progress with Rx power 1% and Rx pressure 150 psig when a loss of both CRD pumps occurs. Select the condition that requires a manual Rx scram to be initiated.

a. More than one accumulator trouble alarm

b. More than one control rod high temperature alarm

c. Any control rod verified drifting inward

d. Charging header pressure less than 550 psig

QUESTION: 090 (1.00)

The plant is operating at 100% Rx power when a loss of off-site power occurs. Concerning bus 4KV emergency bus 10A401, SELECT the following that is NOT an expected automatic response to this condition

a. After 20 seconds, the A EDG will auto-start

b. All motor circuit breakers open

c. Process Start Inhibit Signals prevent starting of selected loads when bus power is restored

d. Drywell Cooling will automatically be restored

QUESTION: 091 (1.00)

The plant has just achieved cold shutdown when an inadvertant shutdown cooling isolation occurs. None of the shutdown cooling injection valves can be re-opened. SELECT the method of decay heat removal appropriate for these conditions.

a. Start a Recirculation pump and use RWCU maximizing RACS to the non-regenerative heat exchangers.

b. Recirculate the suppression pool through open SRVs and establish RPV pressure at greater than 75 psid above suppression chamber pressure.

c. With MSIVs open, start a mechanical vacuum pump and allow steam to dump to the main condenser

d. Raise and maintain RPV level to 227" to 243" on the upset range to establish natural circulation

QUESTION: 092 (1.00)

SELECT the containment vent path that if used to control containment hydrogen concentration would result in an unscrubbed, unmonitored and untreated radioactive release to the environment.

a. Vent the containment via the drywell 26 inch exhaust.

b. Vent the containment via the drywell supply and ILRT piping.

c. Vent the containment via the suppression chamber 24 inch exhaust.

d. Vent the containment via the suppression chamber supply and ILRT piping.

QUESTION: 093 (1.00)

Which of the following states the 2 HOUR, 110 PERCENT load limit for an emergency diesel generator ?

a. 6763 KW

b. 4430 KW

c. 6148 KW

d. 4873 KW

QUESTION: 094 (1.00)

A recirculation pump trip occurs at 9:00 a.m. and the pump is immediately restarted. The pump trips again at 9:05 a.m. In accordance with OP-AP.ZZ-109(Q) "Equipment Operation Control," WHICH of the following is the minimum amount of time required before the recirculation pump may again be restarted?

a. 1 min

b. 45 min

c. 4 hours

d. 12 hours

QUESTION: 095 (1.00)

Which ONE of the following conditions would require entry into OP-EO.ZZ-102, "Primary Containment Control"?

a. Suppression Pool level of 78.0 inches.

b. Suppression Pool temperature of 90 degrees F.

c. Primary Containment hydrogen concentration of 3.5%.

d. Primary Containment oxygen concentration of 2.5%.

QUESTION: 096 (1.00)

SELECT the emergency classification that would be declared during an accident that resulted in the loss of containment integrity, and the issuance of a protective action recommendation.

a. Unusual event.

b. Alert.

c. Site Area.

d. General Emergency.

QUESTION: 097 (1.00)

An encapsulated Co-60 radiation source of 2.3 R/hr on contact is to be stored at Hope Creek. Which of the following postings/controls would be required ?

a. Storage area would be locked and posted as an Exclusion Area

b. Storage area would be locked and posted as a High Radiation Area

c. Storage area would be roped off and posted as a Radiation area

d. Storage area would be roped off and posted as a High Radiation Area

QUESTION: 098 (1.00)

Which of the following will NOT cause an automatic start of the Secondary Containment Filtration, Recirculation, and Ventilation System?

a. 1.78 psig in the drywell

b. LOCA sequencer actuation

c. Low Reactor Building differential pressure at 0.1 inches of water

d. Reactor Building ventilation exhaust Hi - Hi radiation at 2x10E-3 mCi/cc

QUESTION: 099 (1.00)

The RPV Pressure leg of OP-EO.ZZ-101,requires that if any SRVs are cycling, other than on low-low set, then SRVs will be opened to reduce pressure to less than 935 psig. Which of the following is a basis for reducing pressure below 935 psig ?

a. Terminating the pressure reduction at 935 psig during an ADS blowdown limits the heat discharged to the suppression pool

b. Terminating the pressure reduction at 935 psig allows continued heat rejection to the main condenser thru the bypass valves

c. Reducing pressure to 935 psig allows RCIC to be used for inventory control

d. Reducing pressure to 935 psig ensures the MSIVs will isolate if a steam line break occurs

QUESTION: 100 (1.00)

A reactor transient has caused reactor water level to fall below the Low level LOCA setpoint. Which of the following states the response of the RHR system to the transient ?

a. All RHR pumps start immediately when the low level setpoint is reached

b. The A and B RHR pumps start when the low level setpoint is reached, the C and D pumps start after a 5 second time delay

c. RHR pumps are started in 5 second intervals and after 15 seconds, all pumps are operating

d. The C and D RHR pumps start immediately, and the A and B pumps are started after a 3 minute time delay

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

ANSWER: 001 (1.00)

d

REFERENCE:

NC.NA-AP.ZZ-005(Q)
302H-000.00H-00113A-04,ELO.R10

[3.5,3.8]

294001K116 ..(KA's)

ANSWER: 002 (1.00)

d

REFERENCE:

OP-AP.[illegible]on 5.2
302H-0[illegible]-02 ELO-6

[3.7,3.7]

294001K101 ..(KA's)

ANSWER: 003 (1.00)

d

REFERENCE:

NC.NA-AP.ZZ-0005(Q), Section 5.32

[3.3,4.2]

294001A109 ..(KA's)

ANSWER: 004 (1.00)

a

REFERENCE:

NC.NA-AP.ZZ-000015(Q)
301H-000.00H-00TAGS-09,ELO-R2

[3.9,4.5]

294001K102 ..(KA's)

ANSWER: 005 (1.00)

d

REFERENCE:

SA-SD.ZZ-15

[3.4,3.8]

294001K109 ..(KA's)

ANSWER: 006 (1.00)

d

REFERENCE:

NC.NA-AP.ZZ-0007(Q)

[3.3,3.6]

294001K104 ..(KA's)

ANSWER: 007 (1.00)

b

REFERENCE:

302H-000.00H-000107-03,ELO-3

[3.2,3.4]

294001A115 ..(KA's)

ANSWER: 008 (1.00)

d

REFERENCE:

HC.OP-IC.ZZ-CCC3

[3.3,4.3]
302H-000.00H-000020-11, ELO-R6

294001A111 ..(KA's)

ANSWER: 009 (1.00)

d

REFERENCE:

302HC-000.00H-00124A-07

[3.1,3.6]

294001A108 ..(KA's)

ANSWER: 010 (1.00)

d

REFERENCE:

302H-000.00H-000121-04, ELO-2b

[4.2,4.2]

294001A102 ..(KA's)

ANSWER: 011 (1.00)

b

REFERENCE:

Emergency Plan, Section i (III.B)
215-002B-000-0, Emergency Plan Training, ELO-1.2

[2.9,4.7]

294001A116 ..(KA's)

ANSWER: 012 (1.00)

c

REFERENCE:

NC.NA-AP.ZZ-0032 Pg 3 of OTSC traveler

[2.7/3.7]

294001A103 ..(KA's)

ANSWER: 013 (1.00)

b

REFERENCE:

NC.NA-AP.ZZ-0013 Section 5.18, 5.19

[3.6,4.2]

294001A110 ..(KA's)

ANSWER: 014 (1.00)

b

REFERENCE:

302H-000.00H-000020-11, p.36
302H-000.00H-000019-11,ELO-R8.n

[3.1,3.1]

202002K104 ..(KA's)

ANSWER: 015 (1.00)

b

REFERENCE:

302H-000.00H-000026-13,p 106,ELO-R5

[4.2,4.1]

206000A309 ..(KA's)

ANSWER: 016 (1.00)

c

REFERENCE:

302H-000.00H-000026-13,p.101,ELO-8

[3.9,4.0]

206000K402 ..(KA's)

ANSWER: 017 (1.00)

c

REFERENCE:

302H-000.00H-000027-10, ELO-2,4

[3.6,3.7]

209001G007 ..(KA's)

ANSWER: 018 (1.00)

a

REFERENCE:

302H-000.00H-000023-09,ELO-5A

[3.1,3.2]

211000K202 ..(KA's)

ANSWER: 019 (1.00)

c

REFERENCE:

302H-000.00H-000022-10, ELO-15c
Technical Specification Basis 2.1.1
Technical Specifications, Table 3.3.1-1

[4.0,4.1]

212000A216 ..(KA's)

ANSWER: 020 (1.00)

a

REFERENCE:

302H-000.00H-000022-10,page 25, ELO-8,12

[3.7,3.9]

212000K302 ..(KA's)

ANSWER: 021 (1.00)

b

REFERENCE:

302H-000.00H-000013-09,VII.C.1, ELO-R13

[3.1,3.3]

215004K602 ..(KA's)

ANSWER: 022 (1.00)

d

REFERENCE:

302H.000-00H-000016-07,ELO-2.b

[3.3,3.2]

215005A105 ..(KA's)

ANSWER: 023 (1.00)

d

REFERENCE:

302H-000.00H-000002-10,ELO-5a

[3.1,3.2]

216000K501 ..(KA's)

ANSWER: 024 (1.00)

c

REFERENCE:

302H-000.00H-00002-10,ELO-5

[3.9,3.9]

295008A201 .(KA's)

ANSWER: 025 (1.00)

a

REFERENCE:

302H-000.00H-000030-13, ELO-R19

[3.8,3.7]

217000A202 ..(KA's)

ANSWER: 026 (1.00)

a

REFERENCE:

HC.OP-SO.SN-0001, 3.3
302H-000.00H-000029-12,ELO-R6

[4.2,4.2]

218000A402 ..(KA's)

ANSWER: 027 (1.00)

b

REFERENCE:

302H-000.00H-000029-12,ELO-R4,IV.C.1.g

[3.8,3.8]

218000K501 ..(KA's)

ANSWER: 028 (1.00)

a

REFERENCE:

302H-000.00H-000029-12,ELO-R3.e

[3.9,3.9]

218000G007 ..(KA's)

ANSWER: 029 (1.00)

b

REFERENCE:

302H-000.00H-000031-03,ELO-3k

[2.9,3.1]

223001K405 ..(KA's)

ANSWER: 030 (1.00)

b

REFERENCE:

302H-000.00H-000033-07,ELO-R5

[4.3,4.4]

223001A201 ..(KA's)

ANSWER: 031 (1.00)

c

REFERENCE:

HC.OP-SO.GS-0002
302H-000.00H-000034-11,ELO-R9

[3.6,3.6]

223001A405 ..(KA's)

ANSWER: 032 (1.00)

a

REFERENCE:

302H-000.00H-000044-09,IV.A.1, ELO-2

[3.5,3.5]

223002A101 ..(KA's)

ANSWER: 033 (1.00)

c

REFERENCE:

302H-000.00H-000230-03
302H-000.00H-000046-10,ELO-R5e

[3.9,4.0]

239002K401 ..(KA's)

ANSWER: 034 (1.00)

a

REFERENCE:

302H-000.00H-000051-11,ELO-R2b
HC.OP-AB.ZZ-120

[3.4,3.4]

241000K607 ..(KA's)

ANSWER: 035 (1.00)

c

REFERENCE:

302H-000.00H-000059-07,ELO-R4

[2.9,2.9]

259002K404 ..(KA's)

ANSWER: 036 (1.00)

d

REFERENCE:

302H-000.00H-000002-10,ELO-3
302H-000.00H-000059-7,ELO-R11

[3.5,3.5]

259002K605 ..(KA's)

ANSWER: 037 (1.00)

b

REFERENCE:

302H-000.00H-000068-14,ELO-5

[3.8,3.7]

264000K408 ..(KA's)

ANSWER: 038 (1.00)

c

REFERENCE:

302H-000.00H-000006-09, ELO-3

[3.1,3.0]

201001K410 ..(KA's)

ANSWER: 039 (1.00)

d

REFERENCE:

302H-000.00H-000007-07,ELO-R3

[3.3,3.3]

201002K405 ..(KA's)

ANSWER: 040 (1.00)

c

REFERENCE:

302H-000.00H-000010-09,VII.C,ELO-8

[3.6,3.5]

215002A304 ..(KA's)

ANSWER: 041 (1.00)

d

REFERENCE

302H-000.00H-000010-09,ELO-6
302H-000.00H-000009-07,ELO-R5

[3.5,3.7]

201004A305 ..(KA's)

ANSWER: 042 (1.00)

b

REFERENCE:

302H-000.00H-000019-11,ELO-3L

[3.6,3.7]

202001K506 ..(KA's)

ANSWER: 043 (1.00)

c

REFERENCE:

HC.OP-SO.BB-0002

[3.5,3.7]

202001G010 ..(KA's)

ANSWER: 044 (1.00)

b

REFERENCE:

302H-000.00H-000021-08,ELO-R7c

[3.2,3.4]

204000A201 ..(KA's)

ANSWER: 045 (1.00)

a

REFERENCE:

302H-000.00H-000017-06, ELO-R7

[3.2,3.1]

215002K102 ..(KA's)

ANSWER: 046 (1.00)

c

REFERENCE:

302H-000.00H-000048-11,ELO-9

[3.7,3.9]

245000A201 ..(KA's)

ANSWER: 047 (1.00)

a

REFERENCE:

HC.OP-SO.AE-0001

[3.2,3.3]

259001G010 ..(KA's)

ANSWER: 048 (1.00)

d

REFERENCE:

302H-000.00H-000066-14,ELO-5

[3.1,3.4]

262002K401 ..(KA's)

ANSWER: 049 (1.00)

a

REFERENCE:

302H-000.00H-000094-05,ELO-4

[3.3,3.5]

286000K402 ..(KA's)

ANSWER: 050 (1.00)

c

REFERENCE:

302H-000.00H-000096-03,ELO-R4

[3.4,3.5]

290003K101 ..(KA's)

ANSWER: 051 (1.00)

b

REFERENCE:

302H-000.00H-000018-07,ELO-R6

[3.3,3.4]

215001K105 ..(KA's)

ANSWER: 052 (1.00)

a

REFERENCE:

302H-000.00H-000043-08,ELO-R2

[3.2,3.3]

233000G007 . (KA's)

ANSWER: 053 (1.00)

a

REFERENCE:

302H-000.00H-000022-10,P.32;P.34;302H-000.00H-000045-09,P.20,Fig 6,7a

[3.8,3.8]

239001K401 ..(KA's)

ANSWER: 054 (1.00)

c

REFERENCE:

302H-000.00H-00126B-08,ELO-R6

[3.6,4.0]

295029K302 ..(KA's)

ANSWER: 055 (1.00)

b

REFERENCE:

302H-000.00H-000024-10,ELO-3, page 17

[4.0,4.2]

295037K202 ..(KA's)

ANSWER: 056 (1.00)

d

REFERENCE:

OP-EO.ZZ-304

[3.7,3.9]

295037A110 ..(KA's)

ANSWER: 057 (1.00)

b

REFERENCE:

302H-000.00H-000128,ELO-3

[3.6,3.8]

295038K203 ..(KA's)

ANSWER: 058 (1.00)

d

REFERENCE:

302H-000.00H-000053-06,ELO-11

[3.7,3.8]

295002G011 ..(KA's)

ANSWER: 059 (1.00)

c

REFERENCE:

OP-EO.ZZ-102 A
302H-000.00H-00125B-08,ELO-R6

[3.7,3.8]

295030K202 ..(KA's)

ANSWER: 060 (1.00)

a

REFERENCE:

Technical Specifications Bases 2.2.3.1

[3.3,4.2]

295006G004 ..(KA's)

ANSWER: 061 (1.00)

d

REFERENCE:

302H-000.00H-000066-14,ELO-7c
HC.OP-AB.ZZ-0135

[3.7,3.8]

295003A101 ..(KA's)

ANSWER: 062 (1.00)

c

REFERENCE:

OP-AB.ZZ-0102

[3.8,4.3]

295014G012 ..(KA's)

ANSWER: 063 (1.00)

b

REFERENCE:

302H-000.00H-000059-07,ELO-15
302H-000.00H-000053-06,p.31

[3.2,3.3]

295009K301 ..(KA's)

ANSWER: 064 (1.00)

a

REFERENCE:

302H-000.00H-00126B-08,ELO-6

[4.2,4.2]

295024A111 ..(KA's)

ANSWER: 065 (1.00)

d

REFERENCE:

Lesson p'an 302H-000.00H-00124C pg 30 Objective 8

[3.8/3.8]

295025K303 ..(KA's)

ANSWER: 066 (1.00)

a

REFERENCE:

HC.OP-AB.ZZ-0145, Item 5.5

[4.0,4.1]]

295005K101 ..(KA's)

ANSWER: 067 (1.00)

d

REFERENCE:

HC.OP-SO.AC-0001
OP-AR.ZZ-015,Digital Point D4848
302H-000.00H-000048-10,ELO-8

[3.8,3.6]

295005G010 ..(KA's)

ANSWER: 068 (1.00)

a

REFERENCE:

OP-SO.BH-001

[4.2,4.4]

295037K103 ..(KA's)

ANSWER: 069 (1.00)

c

REFERENCE:

302H-000.00H-00126C-03,ELO-5

[3.2,3.4]

295010A107 ..(KA's)

ANSWER: 070 (1.00)

c

REFERENCE:

302H-000.00H-00124C-08,p.23,ELO-8

[3.6,3.8]

295003K302 ..(KA's)

ANSWER: 071 (1.00)

c

REFERENCE:

302H-000.00H-00124C-08,ELO-8
302H-000.00H-000053-06,ELO-10

[3.9,4.0]

295026A203 ..(KA's)

ANSWER: 072 (1.00)

b

REFERENCE:

HC-OP.SO-BB-0002, Caution 5.4.1

[3.5,3.8]

295001A201 ..(KA's)

ANSWER: 073 (1.00)

b

REFERENCE:

302H-000.00H-000069-10,ELO-12

[3.3,3.3]

295004K203 ..(KA's)

ANSWER: 074 (1.00)

c

REFERENCE:

HC-OP.SO-ZZ-0110

[3.5,3.7]

295003A204 ..(KA's)

ANSWER: 075 (1.00)

c

REFERENCE:

302H-000.00H-00113B-02,ELO-5

[3.3,4.2]

295023G001 ..(KA's)

ANSWER: 076 (1.00)

c

REFERENCE:

HC.OP-AB.ZZ-0144
302H-000.00H-00113B-02,ELO-11

[3.4,3.7]

295023G005 ..(KA's)

ANSWER: 077 (1.00)

a

REFERENCE:

302H-000.00H-000123-06,ELO-4

[3.8,4.0]

295006K305 ..(KA's)

ANSWER: 078 (1.00)

d

REFERENCE:

OP-AB.ZZ-201

[3.4,3.4]

295010K302 ..(KA's)

ANSWER: 079 (1.00)

c

REFERENCE:

OP-AB.ZZ-120

[3.4,3.8]

295026G007 ..(KA's)

ANSWER: 080 (1.00)

b

REFERENCE:

OP-AB.ZZ-130

[3.8,3.6]

295016G010 ..(KA's)

ANSWER: 081 (1.00)

b

REFERENCE:

302H-000.00H-000076-08,ELO-R2

[3.4,3.4]

295019K205 ..(KA's)

ANSWER: 082 (1.00)

b

REFERENCE:

HC.OP-AB.ZZ-0131

[3.7,3.4]

295019G010 ..(KA's)

ANSWER: 083 (1.00)

c

REFERENCE:

OP-AB.ZZ-105

[3.7,3.5]

295022G010 ..(KA's)

ANSWER: 084 (1.00)

d

REFERENCE:

OP-EO.ZZ-101

[4.4,4.7]

295037G011 ..(KA's)

ANSWER: 085 (1.00)

b

REFERENCE:

302H-000.00H-00124A-07,ELO-R6

[3.7,4.0]

295031G007 ..(KA's)

ANSWER: 086 (1.00)

b

REFERENCE:

302H-000.00H-000134-07,ELO-5

[4.4,4.7]

295031K302 ..(K\'s)

ANSWER: 087 (1.00)

c

REFERENCE:

HC.OP-AB.ZZ-0124,Step 4.9

[3.4,3.6]

295018K101 ..(KA's)

ANSWER: 088 (1.00)

a

REFERENCE:

HC.OP-AB.ZZ-123

[3.4,3.3]

295018G010 ..(KA's)

ANSWER: 089 (1.00)

a

REFERENCE:

HC.OP-AB.ZZ-104

[3.3,3.4]

295022K101 ..(KA's)

ANSWER: 090 (1.00)

a

REFERENCE:

302H-000.00H-000066-14,ELO-15

[4.1,4.2]

295003K202 ..(KA's)

ANSWER: 091 (1.00)

a

REFERENCE:

302H-000.00H-00112D,ELO-8
OP-AB.ZZ-142

[3.6,3.8]

295021K305 ..(KA's)

ANSWER: 092 (1.00)

b

REFERENCE:

OP-EO.ZZ-318,Pg 20

[3.4,3.7]

295029K101 ..(KA's)

ANSWER: 093 (1.00)

d

REFERENCE:

302H-000.00H-000068-14,ELO-2

[3.4,3.4]

264000A203 ..(KA's)

ANSWER: 094 (1.00)

b

REFERENCE:

OP-AP.ZZ-109(Q) ATTACHMENT 1 PG 3

294001K107 (3.3/3.6)

294001K107 ..(KA's)

ANSWER: 095 (1.00)

c

REFERENCE:

OP-EO.ZZ-102

[4.3,4.5]

295029G011 ..(KA's)

ANSWER: 096 (1.00)

d

REFERENCE:

Event Classification Guide, Section i

[2.9,4.7]

294001A116 ..(KA's)

ANSWER: 097 (1.00)

b

REFERENCE:

302H-000.00H-00113I-01,ELO-1b

[3.3,3.8]

294001K103 ..(KA's)

ANSWER: 098 (1.00)

c

REFERENCE:

302H-000.00H-000042-07,ELO-7

[3.2,3.4]

261000K109 ..(KA's)

ANSWER: 099 (1.00)

b

REFERENCE:

302H-000.00H-00124C-08,ELO-8

[4.4,4.4]

295025A103 ..(KA's)

ANSWER: 100 (1.00)

b

REFERENCE:

302H-000.00H-000028-10,ELO-9

[3.6,3.7]

203000K601 ..(KA's)

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

A N S W E R K E Y

MULTIPLE CHOICE

001	d
002	d
003	d
004	a
005	d
006	d
007	b
008	d
009	d
010	d
011	b or c #6/22/92
012	c
013	b
014	b
015	b
016	c
017	c
018	a
019	c
020	a
021	b
022	d
023	d
024	c
025	a
026	a or b #6/22
027	~~b~~ deleted — 6/22 #3
028	a
029	b
030	b
031	c
032	a
033	~~c~~ b #6/22
034	a
035	c
036	d
037	b
038	c
039	d
040	c
041	d
042	b
043	c
044	b
045	a

A N S W E R K E Y

046	c	069	c
047	a	070	c
048	d	071	c
049	a	072	b
050	c	073	b
051	b	074	c
052	a	075	c
053	a	076	c
054	c	077	a or c #3 6/22
055	b	078	d
056	d	079	c
057	b	080	b
058	d	081	b
059	c	082	b
060	a	083	d
061	d	084	d
062	c	085	b
063	b	086	b
064	d	087	c
065	d	088	a
066	a	089	a
067	d	090	a
068	a	091	a

A N S W E R K E Y

092 b

093 d

094 b

095 c

096 d

097 b

098 c

099 b

100 b

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

FIGURE 1

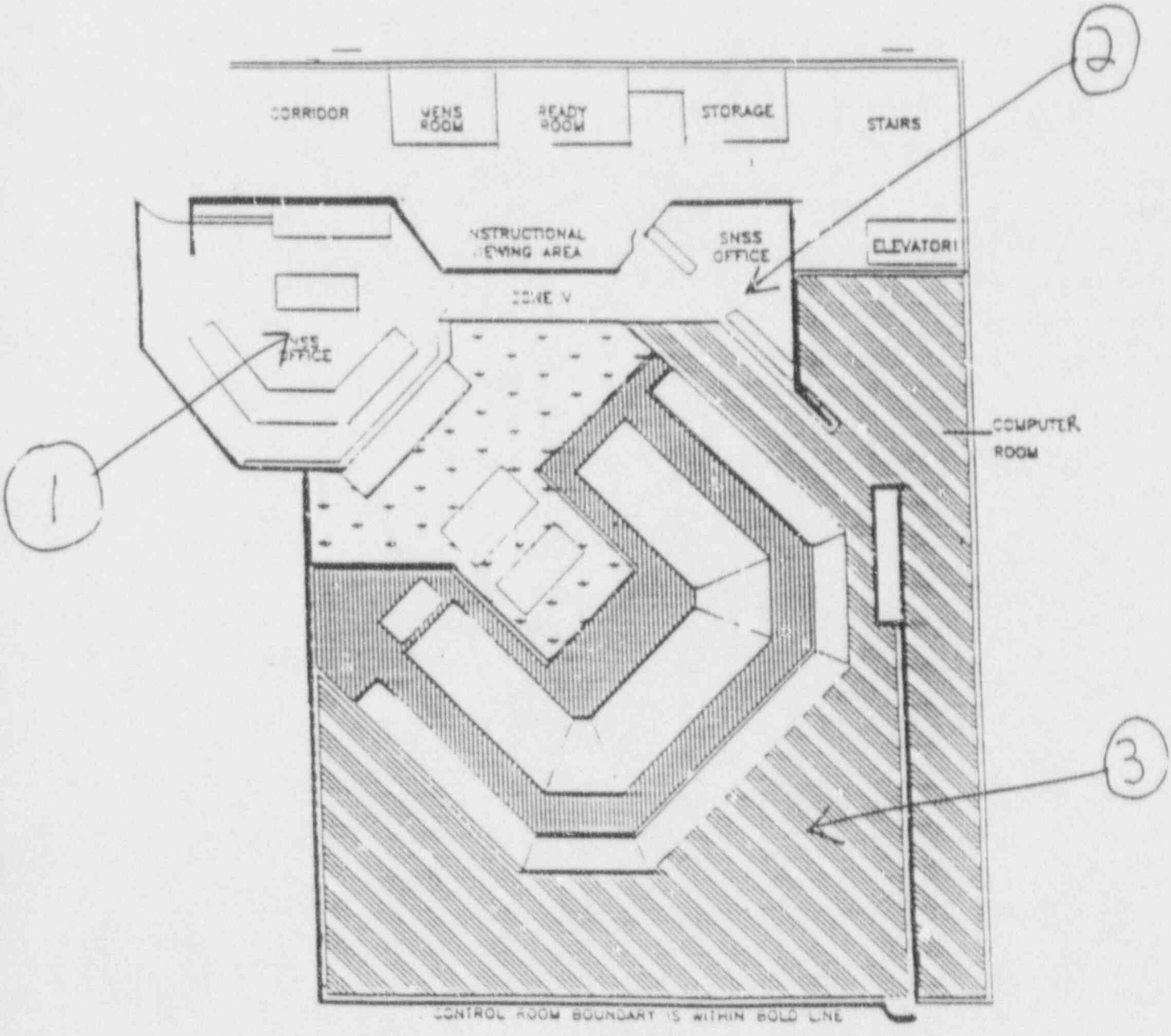
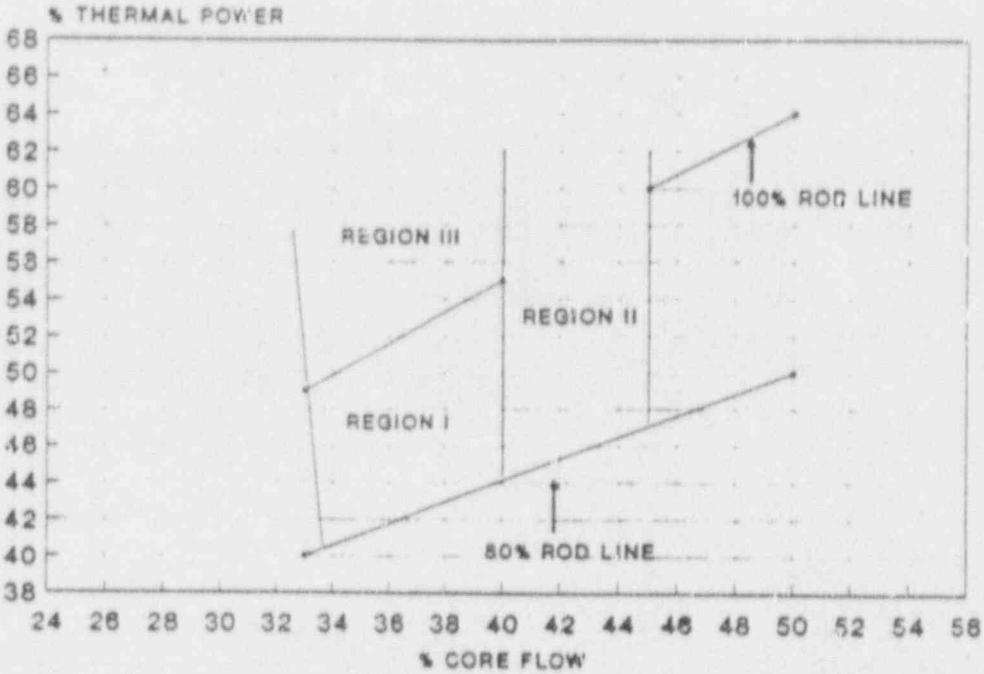

CORRIDOR
MENS ROOM
READY ROOM
STORAGE
STAIRS
INSTRUCTIONAL VIEWING AREA
SNSS OFFICE
ELEVATOR
ZONE V
SNSS OFFICE
COMPUTER ROOM
1
2
3
CONTROL ROOM BOUNDARY IS WITHIN BOLD LINE

FIGURE 3


% THERMAL POWER
68
66
64
62
60
58
56
54
52
50
48
46
44
42
40
38
REGION III
REGION II
REGION I
100% ROD LINE
80% ROD LINE
24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56
% CORE FLOW

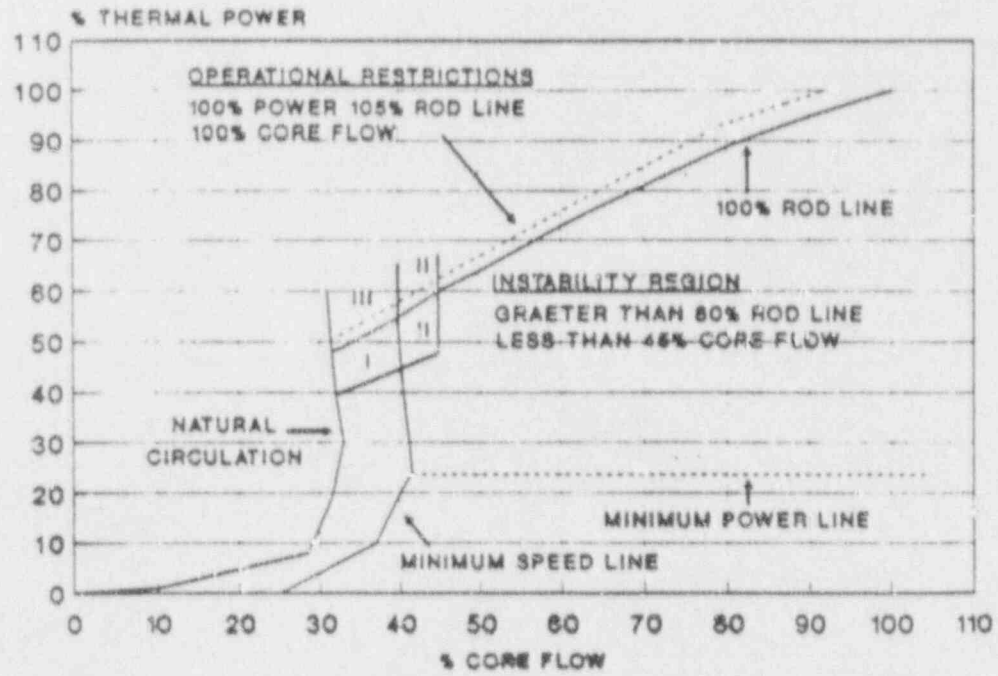

% THERMAL POWER
110
100
90
80
70
60
50
40
30
20
10
0
OPERATIONAL RESTRICTIONS
100% POWER 105% ROD LINE
100% CORE FLOW
100% ROD LINE
III
II
I
INSTABILITY REGION
GRAETER THAN 80% ROD LINE
LESS THAN 45% CORE FLOW
NATURAL
CIRCULATION
MINIMUM POWER LINE
MINIMUM SPEED LINE
0 10 20 30 40 50 60 70 80 90 100 110
% CORE FLOW

FIGURE 3

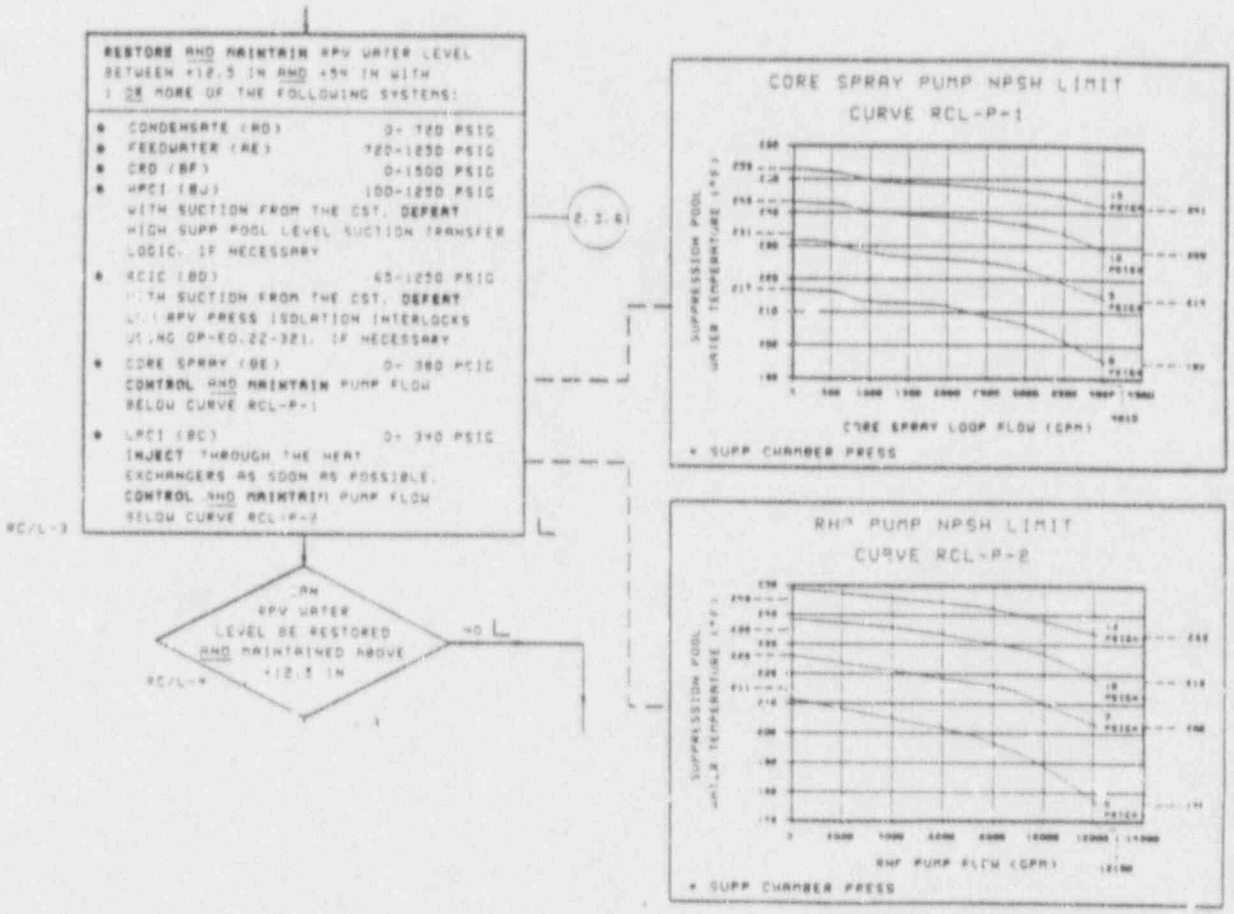
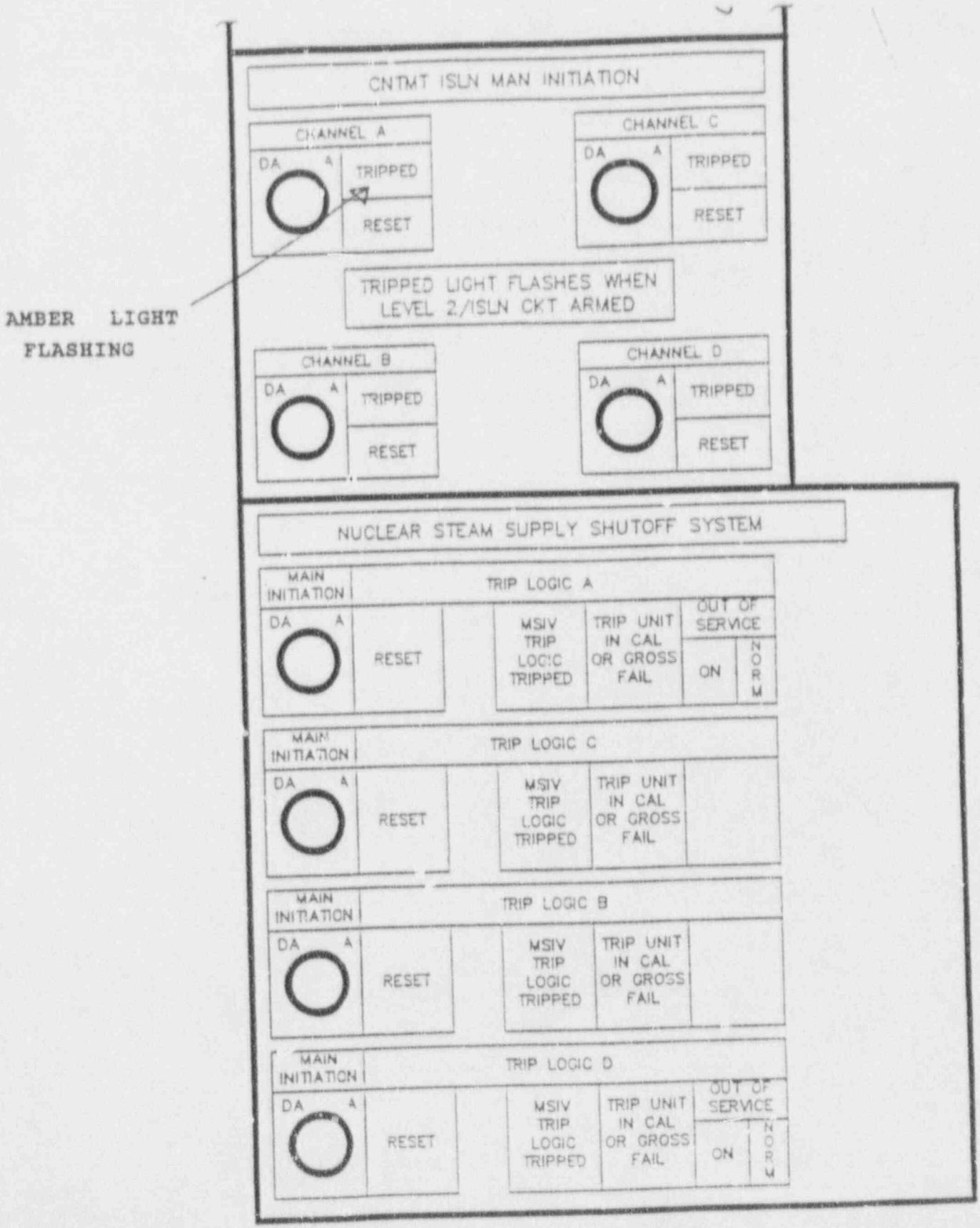

RESTORE AND MAINTAIN RPV WATER LEVEL BETWEEN +12.5 IN AND +54 IN WITH 1 OR MORE OF THE FOLLOWING SYSTEMS:
CONDENSATE (AD) 0- 120 PSIG
FEEDWATER (AE) 720-1250 PSIG
CRD (BF) 0-1500 PSIG
HPCI (BJ) 100-1250 PSIG
WITH SUCTION FROM THE CST. DEFEAT HIGH SUPP POOL LEVEL SUCTION TRANSFER LOGIC. IF NECESSARY
RCIC (BD) 45-1250 PSIG
WITH SUCTION FROM THE CST. DEFEAT RPV PRESS ISOLATION INTERLOCKS USING OP-EO.22-321. IF NECESSARY
CORE SPRAY (BE) 0- 380 PSIG
CONTROL AND MAINTAIN PUMP FLOW BELOW CURVE RCL-P-1
LPCI (BC) 0- 340 PSIG
INJECT THROUGH THE HEAT EXCHANGERS AS SOON AS POSSIBLE.
CONTROL AND MAINTAIN PUMP FLOW BELOW CURVE RCL-P-2
RC/L-3
2.3.6
CAN RPV WATER LEVEL BE RESTORED AND MAINTAINED ABOVE +12.5 IN
RC/L-4
NO
CORE SPRAY PUMP NPSH LIMIT
CURVE RCL-P-1
SUPPRESSION POOL WATER TEMPERATURE (°F)
CORE SPRAY LOOP FLOW (GPM)
* SUPP CHAMBER PRESS
RHR PUMP NPSH LIMIT
CURVE RCL-P-2
SUPPRESSION POOL WATER TEMPERATURE (°F)
RHR PUMP FLOW (GPM)
* SUPP CHAMBER PRESS

FIGURE 4


CNTMT ISLN MAN INITIATION
CHANNEL A
DA
A
TRIPPED
RESET
CHANNEL C
DA
A
TRIPPED
RESET
TRIPPED LIGHT FLASHES WHEN LEVEL 2/ISLN CKT ARMED
AMBER LIGHT FLASHING
CHANNEL B
DA
A
TRIPPED
RESET
CHANNEL D
DA
A
TRIPPED
RESET
NUCLEAR STEAM SUPPLY SHUTOFF SYSTEM
MAIN INITIATION
TRIP LOGIC A
DA
A
RESET
MSIV TRIP LOGIC TRIPPED
TRIP UNIT IN CAL OR GROSS FAIL
OUT OF SERVICE
ON
NORM
MAIN INITIATION
TRIP LOGIC C
DA
A
RESET
MSIV TRIP LOGIC TRIPPED
TRIP UNIT IN CAL OR GROSS FAIL
MAIN INITIATION
TRIP LOGIC B
DA
A
RESET
MSIV TRIP LOGIC TRIPPED
TRIP UNIT IN CAL OR GROSS FAIL
MAIN INITIATION
TRIP LOGIC D
DA
A
RESET
MSIV TRIP LOGIC TRIPPED
TRIP UNIT IN CAL OR GROSS FAIL
OUT OF SERVICE
ON
NORM

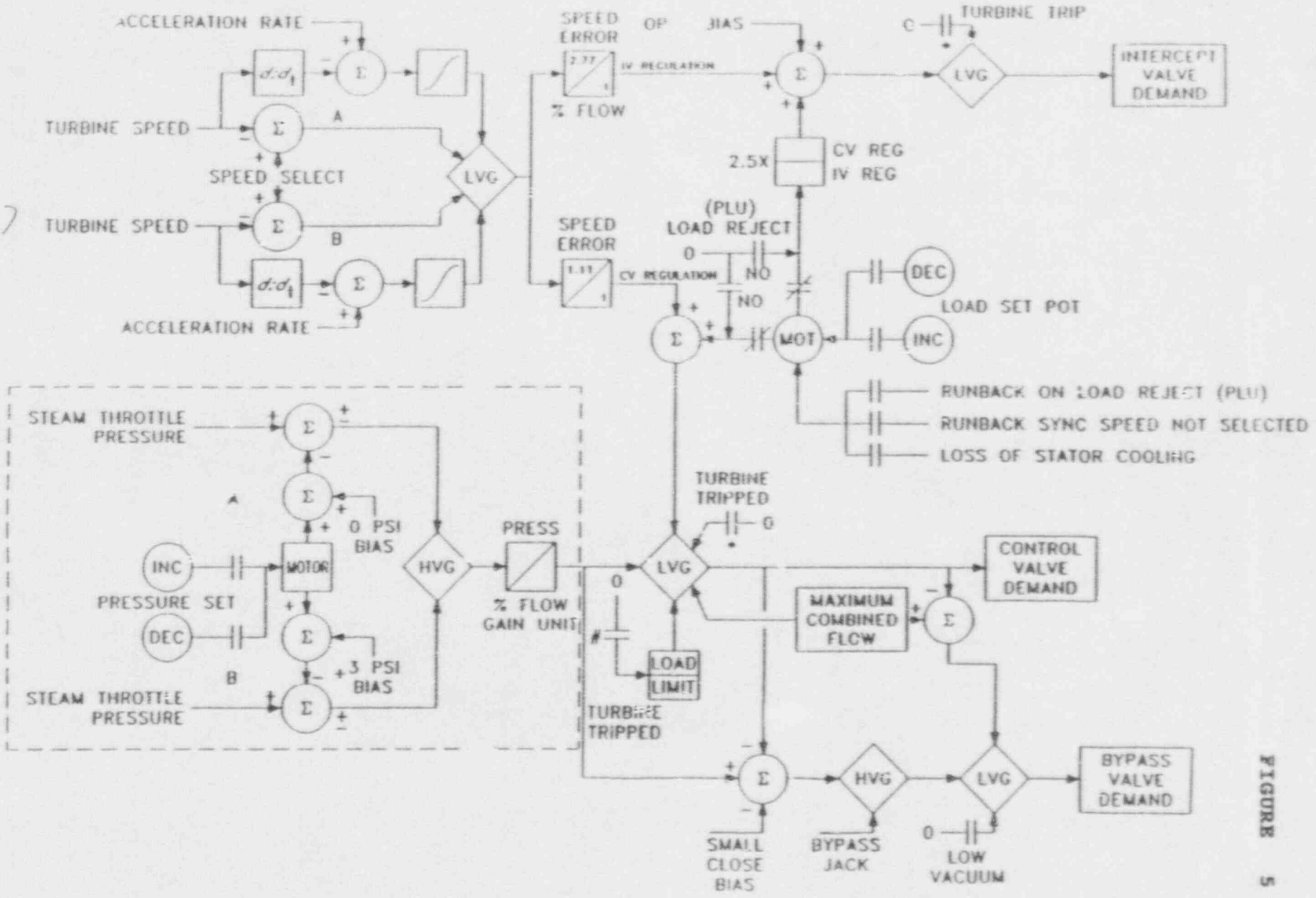

ACCELERATION RATE
TURBINE SPEED
SPEED SELECT
TURBINE SPEED
ACCELERATION RATE
A
B
LVG
SPEED ERROR
OP BIAS
% FLOW
IV REGULATION
TURBINE TRIP
INTERCEPT VALVE DEMAND
2.5X
CV REG
IV REG
(PLU) LOAD REJECT
SPEED ERROR
CV REGULATION
NO
NO
DEC
INC
MOT
LOAD SET POT
RUNBACK ON LOAD REJECT (PLU)
RUNBACK SYNC SPEED NOT SELECTED
LOSS OF STATOR COOLING
STEAM THROTTLE PRESSURE
0 PSI BIAS
INC
DEC
MOTOR
PRESSURE SET
+3 PSI BIAS
STEAM THROTTLE PRESSURE
HVG
PRESS
% FLOW GAIN UNIT
TURBINE TRIPPED
LOAD LIMIT
TURBINE TRIPPED
LVG
CONTROL VALVE DEMAND
MAXIMUM COMBINED FLOW
SMALL CLOSE BIAS
HVG
BYPASS JACK
LVG
LOW VACUUM
BYPASS VALVE DEMAND

FIGURE 5

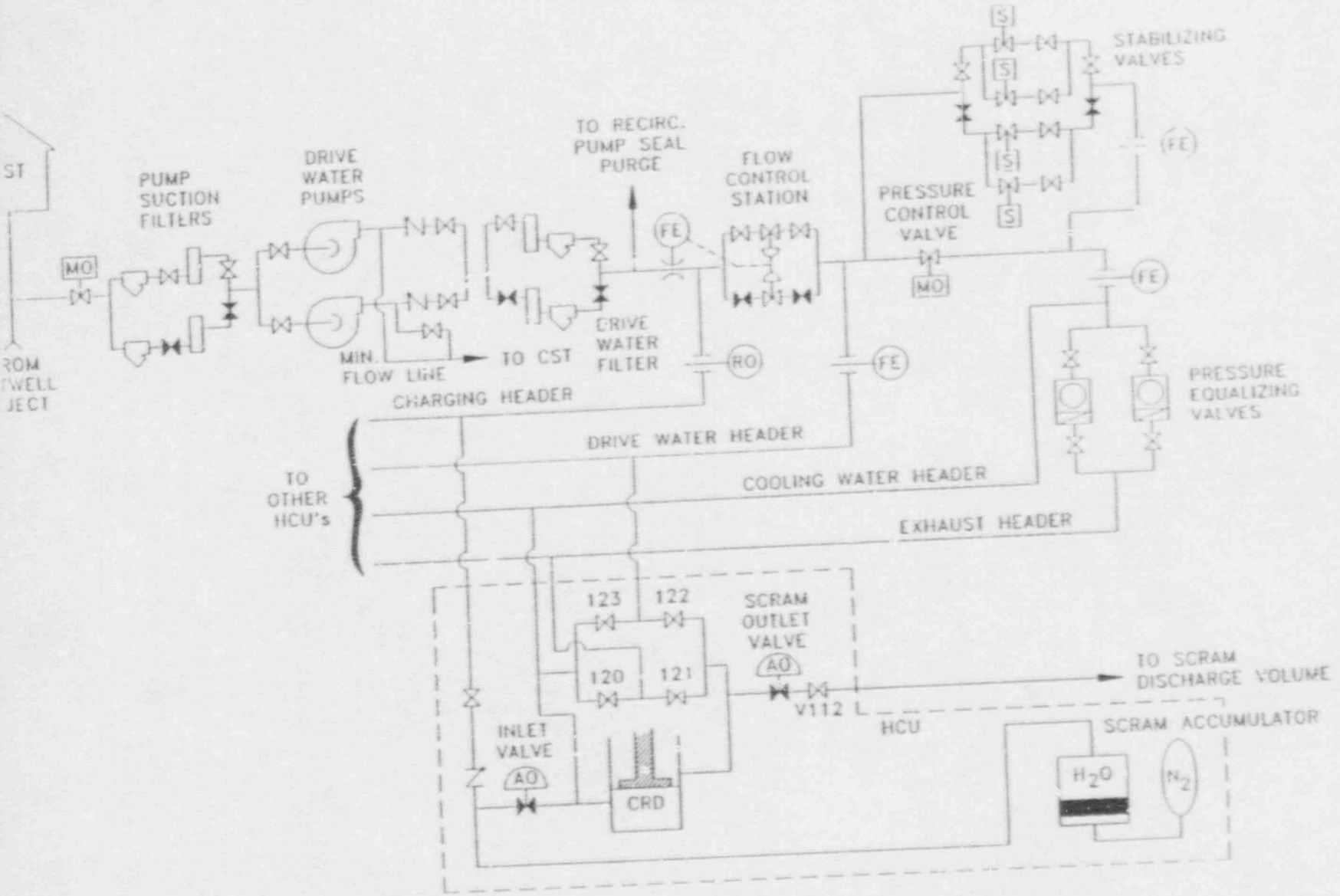

ST
PUMP SUCTION FILTERS
DRIVE WATER PUMPS
TO RECIRC. PUMP SEAL PURGE
FLOW CONTROL STATION
STABILIZING VALVES
PRESSURE CONTROL VALVE
MO
FE
S
RO
MIN. FLOW LINE
TO CST
DRIVE WATER FILTER
PRESSURE EQUALIZING VALVES
CHARGING HEADER
DRIVE WATER HEADER
COOLING WATER HEADER
EXHAUST HEADER
TO OTHER HCU's
123
122
120
121
SCRAM OUTLET VALVE
AO
TO SCRAM DISCHARGE VOLUME
V112
HCU
SCRAM ACCUMULATOR
INLET VALVE
CRD
H_2O
N_2

FIGURE 6

FIGURE 7

ROD PULL LISTING

Sheet 19

STEP NUMBER	ROD NUMBER	POSITION DATA		COUPLING/ NI CHECK* 4.1.3.6	OPERATORS INITIALS	POSITION DATA CHANGE	
		FROM	TO			FROM	TO
333	18-51	06	08	N/A	JS	06	08
334	42-11	06	08	N/A	JS	06	08
335	50-43	06	08	N/A	JS	06	08
336	10-19	06	08	N/A	JS	06	08
337	10-43	06	08	N/A	JS	06	08
338	50-19	06	08	N/A	JS	06	08
339	42-51	06	08	N/A	JS	06	08
340	18-11	06	08	N/A	JS	06	08
	RWM	GROUP 27	(RSCS	GROUP 7)	—	—	—
341	26-35	08	12	N/A			
342	34-27	08	12	N/A			
343	34-35	08	12	N/A			
344	26-27	08	12	N/A			
	RWM	GROUP 29	(RSCS	GROUP 7)			
345	18-43	08	12	N/A			
346	42-19	08	12	N/A			
347	42-43	08	12	N/A			
348	18-19	08	12	N/A			
	RWM	GROUP 29	(RSCS	GROUP 7)			
349	26-51	08	12	N/A			

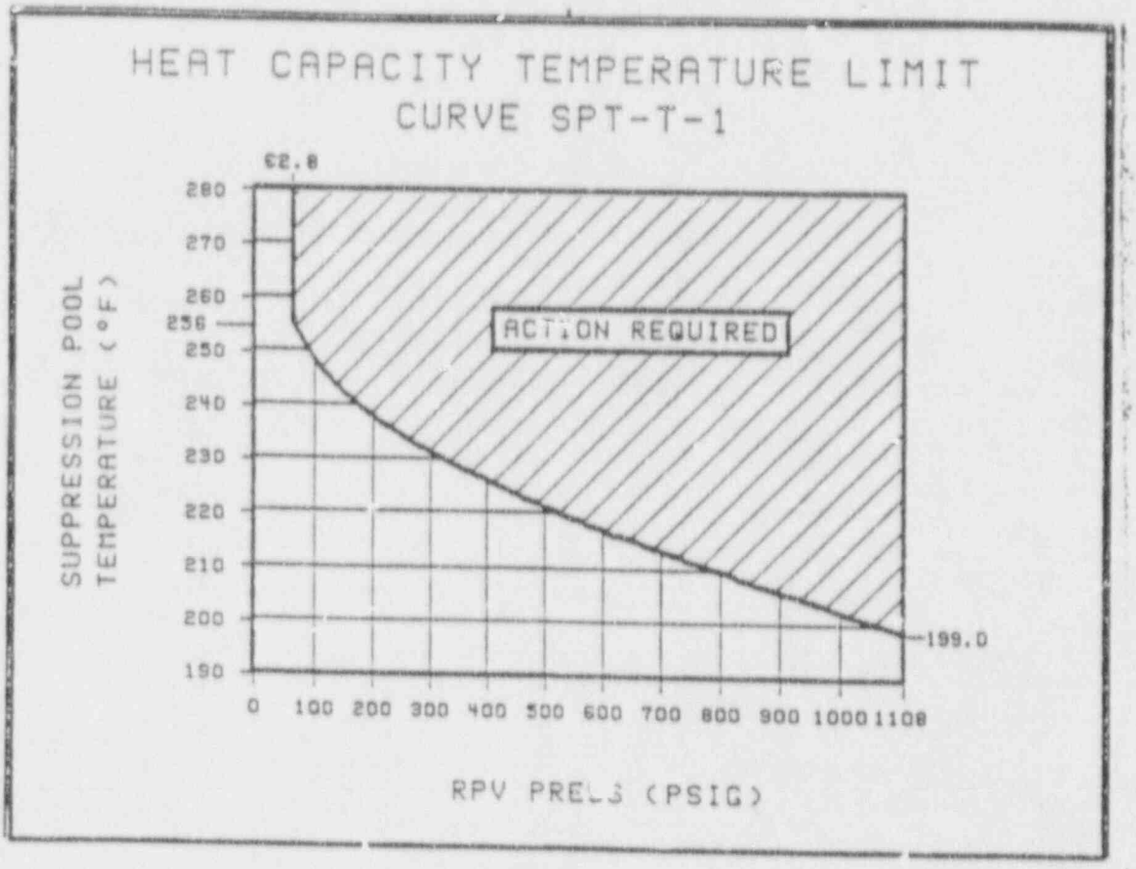
FIGURE 8

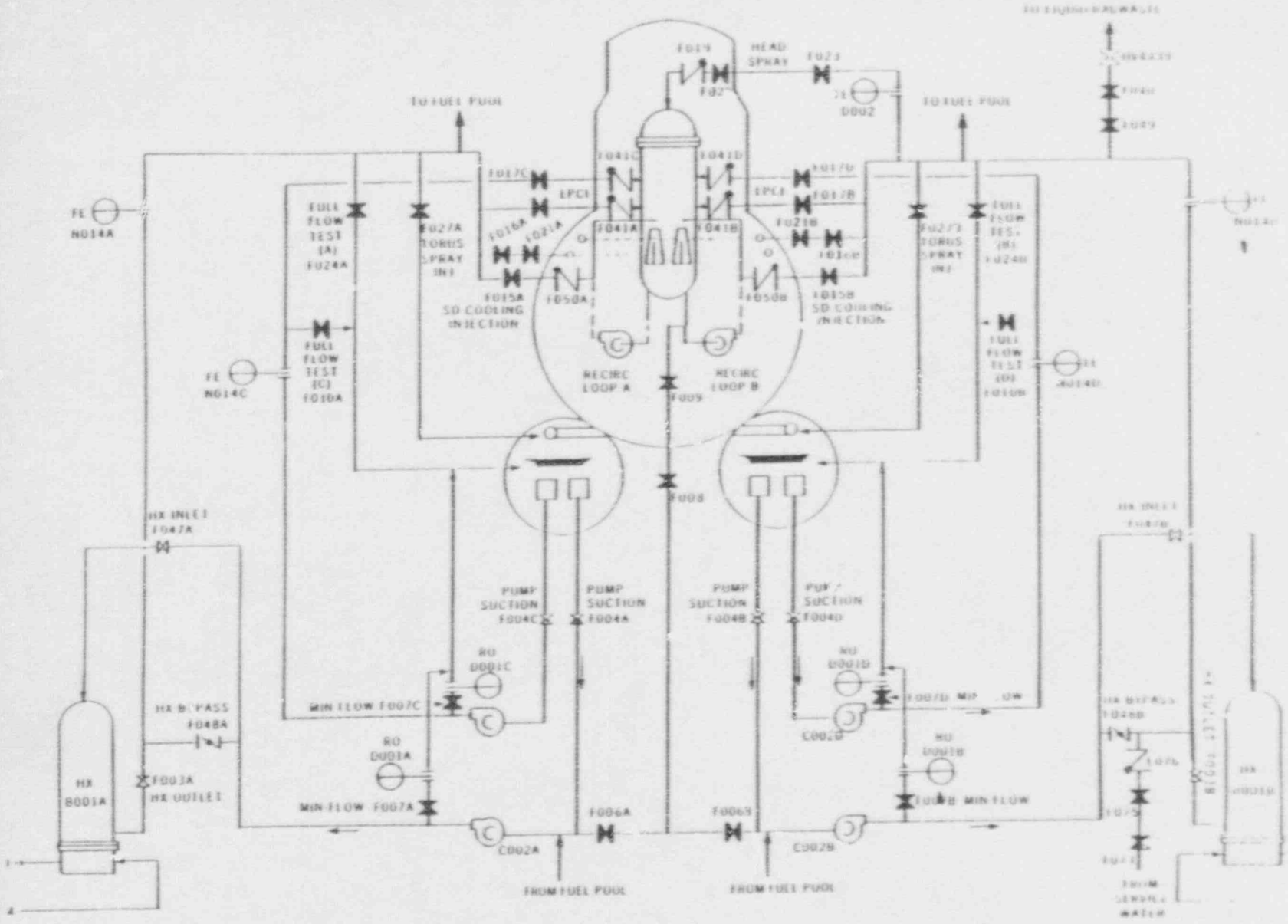
ROD PULL LISTING

Sheet 33

STEP NUMBER	ROD NUMBER	POSITION DATA		COUPLING/ NI CHECK* 4.1.3.6	OPERATORS INITIALS	POSITION DATA CHANGE	
		FROM	TO			FROM	TO
	RWM	GROUP 67	(RSCS	GROUP 9D)			
573	14-47	00	04	N/A		00	04
574	46-15	00	04	N/A			
575	46-47	00	04	N/A			
576	14-15	00	04	N/A			
	RWM	GROUP 68	(RSCS	GROUP 8)			
577	26-43	30	36	N/A			
578	34-19	30	36	N/A			
579	42-35	30	36	N/A			
580	18-27	30	36	N/A			
581	34-43	30	36	N/A			
582	26-19	30	36	N/A			
583	42-27	30	36	N/A			
584	18-35	30	36	N/A			
	RWM	GROUP 69	(RSCS	GROUP 8)			
585	18-51	30	36	N/A			
586	42-11	30	36	N/A			
587	50-43	30	36	N/A			
588	10-19	30	36	N/A			
589	10-43	30	36	N/A			

FIGURE 9


HEAT CAPACITY TEMPERATURE LIMIT
CURVE SPT-T-1
SUPPRESSION POOL
TEMPERATURE (°F)
RPV PRESS (PSIG)
ACTION REQUIRED
82.8
199.0
280
270
260
250
240
230
220
210
200
190
0
100
200
300
400
500
600
700
800
900
1000
1108



LP No	301H 000 00H BC01 302H 000 00H 028	REV 5
TITLE	RHR SIMPLIFIED	FIL

FIGURE 10