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

ENCLOSURE 1

EXAMINATION REPORT - 50-424/OL-90-04

Facility Licensee: Georgia Power Company
P. O. Box 1295
Birmingham, AL 35201

Facility Name: Vogtle Electric Generating Plant

Facility Docket Nos.: 50-424 and 50-425

Facility License Nos.: NPF-68 and NPF-81

Examinations were administered at the Vogtle Electric Generating Plant near Waynesboro, Georgia.

Chief Examiner: _____ 1/7/91
D. Charles Payne — Date Signed

Approved By: _____ 1/8/91
Lawrence L. Lawyer, Chief — Date Signed
Operator Licensing Section 1

SUMMARY

Examinations were given during the week of December 10, 1990.

Written examinations and operating tests were administered to three Senior Reactor Operator (SRO) and five Reactor Operator (RO) applicants. All candidates passed these examinations.

Additionally, a requalification retake examination on the simulator was given to one SRO and this operator passed.

REPORT DETAILS

1. Facility Employees Attending Exit Meeting

T. V. Greene, Assistant General Manager, Plant Support
J. E. Swartzwelder, Operations Manager
K. R. Holmes, Manager Training and Emergency Preparedness
K. J. Brown, Operations Supervisor Training
R. E. Dorman, Shift Superintendent
H. L. Beacher, Senior Plant Engineer

2. Examiners

*D. C. Payne, Region II
D. W. Lane, Sonalyst
G. D. Weale, Sonalyst
+R. D. Starkey, Resident Inspector

*Chief Examiner
+Attended Exit Meeting Only

3. Exit Meeting

At the conclusion of the site visit, the Chief Examiner met with representatives of the plant staff to discuss the results of the examinations. The examiners made the following observations concerning your facility and training program:

a. Areas of generic weaknesses were found in knowledge of refueling operations and equipment in containment, radiological controls and nuclear instrument circuitry components.

b. Areas in which the examiners believe that the applicants exhibited good training and knowledge were procedure usage, communications, diagnosis of events, and control board operations.

c. Plant cleanliness was commendable.

d. One procedural problem was identified. Unit Operating Procedure 13003-1, Reactor Coolant Pump Operation, in response to a #1 seal failure gives limitations on pump operation if leakoff flow is greater than 6 gallons per minute (gpm). Both the meter on the main control room panel (IFR-158 and IFR-160 for #1 Seal Leakoff Hi-Range) and Figure 2 of 13003-1 only give parametric

information up to 6 gpm. Determination of whether entry conditions are met (greater than 6 gpm seal leakoff) is complicated by the limited scale of the instruments and figure.

The cooperation given to the examiners was noted and appreciated. The licensee did not identify as proprietary any material provided to or reviewed by the examiners.

ENCLOSURE 3

SIMULATOR FACILITY REPORT

Facility Licensee: Vogtle Electric Generating Plant

Facility Docket No.: 50-424 and 50-425

Operating Tests Administered on: December 11-13, 1990

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-compliance with 10 CFR 55.45(b). These observations do not affect NRC certification or approval of the simulation facility other than to provide information which may be used in future evaluations. No licensee action is required in response to these observations.

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

ITEM	DESCRIPTION
Simulator Booth	Lack of one-way glass on simulator booth windows. Operators during the simulator exams tended to communicate visually as well as verbally with the instructors in the booth. Also it is difficult for the instructors to monitor plant parameters using binoculars without being observed by the crew. Finally, it increases operator stress if they see many observers in the booth.

50-424/OL-90-

Enclosure 2

U. S. NUCLEAR REGULATORY COMMISSION
REACTOR OPERATOR LICENSE EXAMINATION
REGION 2

FACILITY: Vogtle 1

REACTOR TYPE: PWR-WEC4

DATE ADMINISTERED: 90/12/10

CANDIDATE: Master Copy

INSTRUCTIONS TO CANDIDATE:

Points for each question are indicated in parentheses after the question. To pass this examination, you must achieve an overall grade of at least 80%. Examination papers will be picked up four and one half (4 1/2) hours after the examination starts.

NUMBER QUESTIONS	TOTAL POINTS	CANDIDATE'S POINTS	CANDIDATE'S OVERALL GRADE (%)
100	100.00		

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

Candidate's Signature

NRC RULES AND GUIDELINES FOR LICENSE EXAMINATIONS

During the administration of this examination the following rules apply:

1. Cheating on the examination means an automatic denial of your application and could result in more severe penalties.

2. After the examination has been completed, you must sign the statement on the cover sheet indicating that the work is your own and you have not received or given assistance in completing the examination. This must be done after you complete the examination.

3. Restroom trips are to be limited and only one candidate 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.

6. Fill in the date on the cover sheet of the examination (if necessary).

7. You may write your answers on the examination question page or on a separate sheet of paper. USE ONLY THE PAPER PROVIDED AND DO NOT WRITE ON THE BACK SIDE OF THE PAGE.

8. If you write your answers on the examination question page and you need more space to answer a specific question, use a separate sheet of the paper provided and insert it directly after the specific question. DO NOT WRITE ON THE BACK SIDE OF THE EXAMINATION QUESTION PAGE.

9. Print your name in the upper right-hand corner of the first page of answer sheets whether you use the examination question pages or separate sheets of paper. Initial each of the following answer pages.

10. 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.

11. If you are using separate sheets, number each answer and skip at least 3 lines between answers to allow space for grading.

12. Write "Last Page" on the last answer sheet.

13. 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.

14. The point value for each question is indicated in parentheses after the question. The amount of blank space on an examination question page is NOT an indication of the depth of answer required.

15. Show all calculations, methods, or assumptions used to obtain an answer.

16. Partial credit may be given. Therefore, ANSWER ALL PARTS OF THE QUESTION AND DO NOT LEAVE ANY ANSWER BLANK. NOTE: partial credit will NOT be given on multiple choice questions.

17. 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.

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

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

20. To pass the examination, you must achieve an overall grade of 80% or greater.

21. There is a time limit of (4 1/2) hours for completion of the examination. (or some other time if less than the full examination is taken.)

22. When you are done and have turned in your examination, leave the examination area as defined by the examiner. If you are found in this area while the examination is still in progress, your license may be denied or revoked.

QUESTION: 003 (1.00)

Given the following exposure history data for an individual:

Lifetime exposure:	19400 mrem
Annual exposure:	4400 mrem
Quarterly exposure:	50 mrem
Age:	22 years
Sex:	Male

WHICH one of the following specifies the maximum additional whole body exposure this individual is allowed in the current quarter according to VEGP administrative limits? ASSUME margin extensions are not possible.

a. The individual can receive an additional 950 mrem of exposure.

b. The individual can receive an additional 100 mrem of exposure.

c. The individual can receive an additional 50 mrem of exposure.

d. The individual can receive no additional exposure.

QUESTION: 004 (1.00)

WHICH one of the following describes a situation when the use of a Caution Tag is appropriate?

a. Personnel protection while working on the seals of CVCS positive displacement pump.

b. RHR system protection during a hydrostatic test of the CVCS system.

c. Electrical shock protection for persons working on the CVCS pump breaker.

d. Radiation release protection from the charging system that is opened for maintenance.

QUESTION: 001 (1.00)

WHICH one of the following specifies when an independent verification is NOT required of a system and/or component configuration following an alignment change or alteration of status in accordance with VEGP 00308-C, "Independent Verification Policy"?

a. When releasing active systems and/or components for maintenance, surveillance testing or calibration and subsequent return-to-service.

b. When performing surveillances.

c. Following an outage when performing system alignments prior to entering the mode where the equipment is required.

d. When verification of system and/or component configuration requires containment entry if containment integrity is established.

QUESTION: 002 (1.00)

The overhaul of a unit diesel generator requires coordination between many plant departments and is viewed as a complex evolution by plant senior management. In accordance with VEGP 10000-C, Conduct of Operations, WHICH one of the following is NOT required to be reviewed before beginning this "complex" evolution?

a. A review of the equipment needed to perform the evolution.

b. A review of the appropriate sections of the procedure by key parties.

c. A review of limitations and hold points.

d. A review of emergency action to be taken in contingencies.

QUESTION: 003 (1.00)

Given the following exposure history data for an individual:

Sex:	Male	Quarterly exposure:	50 mrem
Age:	22 years	Annual exposure:	4400 mrem
Remarks:	Form 4 unavailable	Lifetime exposure:	19400 mrem

WHICH one of the following specifies the maximum additional whole body exposure this individual is allowed in the current quarter according to VEGP administrative limits? ASSUME margin extensions are not possible.

a. The individual can receive an additional 950 mrem of exposure.

b. The individual can receive an additional 100 mrem of exposure.

c. The individual can receive an additional 50 mrem of exposure.

d. The individual can receive no additional exposure.

QUESTION: 004 (1.00)

WHICH one of the following describes a situation in which the use of a Caution Tag is appropriate?

a. Personnel protection while working on the seals of CVCS positive displacement pump.

b. RHR system protection during a hydrostatic test of the CVCS system.

c. Electrical shock protection for persons working on the CVCS pump breaker.

d. Radiation release protection from the charging system that is opened for maintenance.

QUESTION: 005 (2.00)

MATCH the "Type Of Tag" in Column B to the "Condition/Circumstance" where it is used in Column A. NOTE: Each response in Column B may be used once, more than once, or not at all and only ONE answer may occupy an answer space. (0.5 each)

	COLUMN A Condition/Circumstance	COLUMN B Type of Tag
_____	a. It is desired to run the CCPs to verify that corrective maintenance was properly performed following extensive overhaul.	1. Hold Tag 2. Jumper and Lifted Wire Tag 3. Caution Tag 4. Functional Test Tag
_____	b. A nitrogen valve must be closed to prevent personnel hazard in a confined space.	
_____	c. Used to identify a temporary connection across contacts on a relay during maintenance on a safety system.	
_____	d. Addtional guidance is needed to assist the operator with the normal operation of a component.	

QUESTION: 006 (1.00)

WHICH one of the following specifies the limit for oxygen below which a confined space is classified as OXYGEN DEFICIENT?

a. 21.5%

b. 20.5%

c. 19.5%

d. 18.5%

QUESTION: 007 (1.00)

A reactor trip has occurred on Unit 1. WHICH one of the following actions is NOT required to be reviewed prior to restart of the reactor in accordance with VEGP 10006-C, Reactor Trip Review?

a. Abnormal indications or degraded equipment.

b. Events occurring out of the normal anticipated sequence.

c. Unusual chemistry results or radiation readings.

d. Previous reactor trips caused by similar events.

QUESTION: 008 (1.00)

Referring to the attached figure for the Reactor Core Safety Limits, MATCH the labeled 2250 psia curve segments in Column A with their bases in Column B. NOTE: Each response in Column B may be used once, more than once, or not at all and only ONE answer may occupy one answer space. (0.50 each)

COLUMN A Reactor Core Safety Limits		COLUMN B Bases
_____	a. - Segment I	1. Prevents exceeding 15% quality of coolant at core exit.
_____	b. - Segment II	2. Prevents exceeding DNBR less than 1.3 anywhere in core, from W-3 correlation.
		3. Prevents T-hot from reaching saturation.
		4. Prevents exceeding fuel centerline temperature of 2200 degrees F.

QUESTION: 009 (1.00)

A system lineup needs to be completed in a HIGH RADIATION AREA and has an expected dose commitment of 100 mrem. Only Health Physics Superintendent authorization is available. WHICH one of the following operators may perform this job without exceeding the facility administrative whole body exposure limits?

a.	Sex: Female Age: 18 Remarks: Form 4 on file	Quarterly Exposure: Annual Exposure: Lifetime Exposure:	1000 mrem 1500 mrem 1500 mrem
b.	Sex: Female Age: 24 Remarks: 4 months pregnant Form 4 on file	Quarterly Exposure: Annual Exposure: Lifetime Exposure:	250 mrem 470 mrem 1900 mrem
c.	Sex: Male Age: 20 Remarks: Form 4 unavailable	Quarterly Exposure: Annual Exposure: Lifetime Exposure:	600 mrem 970 mrem Unknown
d.	Sex: Male Age: 27 Remarks: Form 4 unavailable	Quarterly Exposure: Annual Exposure: Lifetime Exposure:	1000 mrem 950 mrem 28700 mrem

QUESTION: 010 (1.00)

WHICH one of the following is a system design feature provided to prevent a total loss of the fire main during a fire main pipe break?

a. Post indicator valves to provide sectional isolation.

b. Fire water storage tanks to provide an alternate water source.

c. Fire hydrants are supplied by individual headers.

d. Standby jockey pump starts on decreasing pressure.

QUESTION: 011 (1.00)

Given the following information:

Current Plant Status	AXIAL FLUX DIFFERENCE (AFD) DATA Date	Time Outside Target Band
Reactor Power: 95% of RTP	11/28/90	1400 - 1415
Time: 0630	11/29/90	0730 - 0745
Date: 11/30/90	11/29/90	1435 - 1500
	11/29/90	2000 - 2015

Using the attached plot of the AFD vs Rated Thermal Power (RTP), WHICH one of the following describes the action needed to be taken by the operator?

a. Restore the indicated AFD to within the target band limits within 15 minutes.

b. Increase THERMAL POWER to 100% of RTP.

c. Reduce THERMAL POWER to less than 50% of RTP within 30 minutes.

d. Reduce Power Range Neutron Flux - HIGH setpoints to less than 55% of RTP within four hours.

QUESTION: 012 (0.00)

*** QUESTION DELETED ***

QUESTION: 013 (1.00)

While in MODE 6 (refueling) and with the reactor closure head in place, WHICH one of the following components does NOT have to be operable to provide Cold Overpressure Protection per Technical Specifications?

a. Two power-operated relief valves (PORVs) with lift settings which vary with RCS temperature and do not exceed the established limits.

b. Two residual heat removal (RHR) suction relief valves, each with a setpoint of 450 psig +/- 3%.

c. The RCS depressurized with an RCS vent capable of relieving at least 670 gpm water flow at 470 psig.

d. Two pressurizer safety valves with lift settings equal to 2485 psig +/- 1%.

QUESTION: 014 (1.00)

FILL IN THE BLANK

There are several important precautions and limitations that must be observed while taking the unit from Hot Shutdown (MODE 4) to Hot Standby (MODE 3).

FILL IN the missing information for EACH sentence listed below. (0.25 each)

a. If the count rate on either Source Range channel increases unexpectedly by a factor of _____ or more during any operation, the operation must be suspended immediately until satisfactory evaluation of the situation has been made.

b. If the Reactor Trip Breakers are closed and the RCS temperature is to be changed more than 50 degrees F, all rods should be withdrawn at least _____ steps. This is to prevent thermal lock-up.

c. Spray flow into the Pressurizer should not be initiated if the temperature difference between the Pressurizer steam space and the spray fluid exceeds _____ degrees F.

d. The boron concentration in the Pressurizer should not be different from the RCS by more than _____ ppm.

QUESTION: 015 (1.00)

With the Rod Control System in AUTOMATIC, WHICH one of the following will cause the control rods to step out?

a. Loop 1 hot leg temperature fails high.

b. Tref rod control input fails high.

c. Loop 3 cold leg temperature fails high.

d. Power range NI channel N42 fails high.

QUESTION: 016 (1.00)

With rod control in AUTOMATIC, WHICH one of the following conditions will cause the steam generator to stabilize at a higher pressure?

a. Generator output power is decreased.

b. Generator output power is increased.

c. Gain on all power range channels is increased.

d. Turbine first stage pressure decreases.

QUESTION: 017 (1.00)

WHICH one of the following lists ALL of the sources/locations for obtaining in-core thermocouple readings?

a. PROTEUS, RPU and PSMS

b. PROTEUS, PSMS and Reference Junction Boxes

c. PROTEUS, RPU and Reference Junction Boxes

d. RPU, PSMS and Reference Junction Boxes

QUESTION: 018 (1.00)

WHICH one of the following represents the response of the affected temperature indication if a short circuit failure occurs in the cable run of an in-core thermocouple?

a. Indicates a minimum reading.

b. Indicates a maximum reading.

c. Indicates ambient temperature at the short location.

d. Indicates slightly higher than actual reading.

QUESTION: 019 (1.00)

Given that the highest in-core thermocouples indicate the following temperatures:

- 1210 F
- 1212 F
- 1212 F
- 1213 F
- 1214 F
- 1213 F

WHICH one of the following conditions is indicated?

a. Core damage is imminent.

b. Reactor power is at 100%.

c. A control rod is stuck in the vicinity of the thermocouples.

d. Core temperature is below DNB.

QUESTION: 020 (1.00)

WHICH one of the following is directly cooled by Nuclear Service Cooling Water (NSCW)?

a. Control Rod Drive Mechanism Cooling.

b. Auxiliary Containment Cooling.

c. Containment Purge System.

d. Reactor Support Cooling.

QUESTION: 021 (1.00)

A Loss of Coolant Accident (LOCA) has occurred and containment pressure is 15 psig. WHICH one of the following describes how the containment fan cooling units realign in this situation?

a. The SI sequencer will start all containment cooling fans in Hi speed after a 30.5 second time delay and the NSCW supply valves to the coolers will get an open signal.

b. The SI sequencer will start four containment cooling fans in Hi speed after a 30.5 second time delay and another four fans in Hi speed 20 seconds later. The NSCW supply valves to the coolers will get a close signal.

c. The SI sequencer will start all containment cooling fans in Lo speed after a 30.5 second time delay and the NSCW supply valves to the coolers will get an open signal.

d. The SI sequencer will trip all operating containment cooling fans and the NSCW supply valves to the coolers will get a close signal.

QUESTION: 022 (1.00)

WHICH one of the following describes the effect on the containment fan cooling units during a Containment Isolation Phase A (CIA)?

a. The NSCW supply valves to the coolers will auto close.

b. The NSCW supply valves to the coolers receive no signal in this situation.

c. The four operating containment cooling fans will shift from Hi speed to Lo speed.

d. The four operating containment cooling fans will trip.

QUESTION: 023 (1.00)

Steam generator 1 narrow range (NR) level channel has failed high. WHICH one of the following DIRECTLY occurs if steam generator 2 feedwater regulating valve (FRV) now fails open and NR level increases to 78%?

a. A main turbine run-back.

b. A partial feedwater isolation.

c. A main generator trip.

d. A full feedwater isolation.

QUESTION: 024 (1.00)

WHICH one of the following alarms is likely to occur with a feedwater isolation (FWI) signal?

a. "ATSI MFPT A (B) HI VIB/ECC"

b. "MFPT A (B) SUCTION LO PRESS"

c. "MFPT A (B) BRG OIL LO PRESS"

d. "MFPT A (B) PMP BRG OIL LO PRESS"

QUESTION: 025 (1.00)

After a MANUAL reactor trip, WHICH one of the following will generate a feedwater isolation (FWI) signal?

a. Opening of the reactor trip breakers.

b. Shutting of the main turbine trip valves.

c. Tavg decreasing below 564 F in two loops.

d. At least one steam generator level reaching 18.5%.

QUESTION: 026 (1.00)

WHICH one of the following describes the effect a loss of power on the 480V MCC 1ABF bus will have on the Auxiliary Feedwater System?

a. Loss of power to the train A AFW Discharge Flow Control valves.

b. Loss of power to the train A AFW pump alternate suction valve.

c. Loss of power to the train A motor driven pumps.

d. Loss of power on the 480V MCC 1ABF bus has no effect.

QUESTION: 027 (1.00)

WHICH one of the following lists the minimum pump requirements for the AFW system to remove 100% of the design RCS decay heat load?

a. Two motor driven pumps and the turbine driven pump.

b. One motor driven pump and the turbine driven pump.

c. One motor driven pump.

d. Two motor driven pumps.

QUESTION: 028 (1.00)

With Unit 1 at 100% power, a periodic surveillance is being conducted from the control room on the "A" train Auxiliary Feedwater (AFW) pump. The pump is running with the miniflow recirc valve (1-HV-5155) open, and the discharge flow control valves (1-HV-5137 and 1-HV-5139) shut.

WHICH one of the following describes how the system will respond with NO operator action if two out of four (2/4) low level alarms are received on steam generator 1?

a. There will be no motor driven AFW pump start signal generated because a second SG with 2/4 low level alarms is required, and the lineup will not change.

b. A motor driven AFW pump start signal will be generated, but the lineup will not change.

c. A motor driven AFW pump start signal will be generated, the discharge flow control valves will automatically go full open, and the miniflow recirc valve will remain open.

d. A motor driven AFW pump start signal will be generated, the discharge flow control valves will automatically go full open, and the miniflow recirc valve will go shut.

QUESTION: 029 (1.00)

While operating at 100% power, WHICH one of the following conditions will initiate an ESFAS signal?

a. Pressurizer level at 11%.

b. Steam Generator pressure at 650 psig.

c. RCS pressure at 1840 psig.

d. Containment pressure at 15.1 psia.

QUESTION: 030 (1.00)

WHICH one of the following specifies the MINIMUM boron concentration in the spent fuel pool that will ensure a reactivity condition of less than 0.95 Keff?

a. 0 ppm

b. 1250 ppm

c. 2000 ppm

d. 2400 ppm

QUESTION: 031 (1.00)

WHICH one of the following is the preferred (normal) source of makeup to the spent fuel pool?

a. Chemical and Volume Control System.

b. Refueling Water Storage Tank.

c. Reactor Makeup Water Storage Tank.

d. Demineralized Water System.

QUESTION: 032 (1.00)

WHICH one of the following conditions will cause the MSIV's to close?

a. 1/3 channels on 2/4 steamlines below 585 psig.

b. 2/3 channels on 2/4 steamlines below 585 psig.

c. 2/3 channels on 1/4 steamlines - 50 psig drop within 100 sec.

d. 1/3 channels on 2/4 steamlines - 100 psig drop within 50 sec.

QUESTION: 033 (1.00)

An increase in main steam flow will cause WHICH one of the following to occur?

a. SG level shrink due to steam pressure increase.

b. SG level swell due to steam pressure decrease.

c. SG level shrink due to steam pressure decrease.

d. SG level swell due to steam pressure increase.

QUESTION: 034 (1.00)

The plant is operating at 75% power. WHICH one of the following gives the immediate effect a loss of BOTH condenser circulating water pumps will have on the Steam Dump control system?

a. Steam dumps modulate open.

b. Steam dumps fully open.

c. Steam dumps arm.

d. Steam dump arming prevented.

QUESTION: 035 (1.00)

During a reactor startup, only one of the two switches for the Source Range permissive P-6 was placed in "BLOCK" due to operator error. If power level is now increased toward the point of adding heat (POAH), WHICH one of the following gives the effect this oversight will have on plant equipment operations?

a. No effect, the switches are redundant.

b. Both Source Range detectors will be saturated.

c. Source Range high flux trip will occur.

d. One Source Range detector will be damaged.

QUESTION: 036 (1.00)

WHICH one of the following control interlocks is associated with the "INTERMEDIATE RANGE HI FLUX LEVEL ROD STOP" alarm?

a. C-1

b. C-2

c. C-3

d. C-4

QUESTION: 037 (1.00)

WHICH one of the following is a design feature of the reactor safeguards system that provides protection from a single instrument failure?

a. Redundancy

b. Independence

c. Diversification

d. Fail Safe

QUESTION: 038 (1.00)

WHICH one of the following gives the impact that clogging of the River Water Makeup traveling screen and wash system will have on the circulating water system?

a. An additional river water makeup pump will automatically start to provide sufficient circulating water.

b. The circulating water pump bay level control valves will automatically close to prevent over-filling the bay.

c. No effect, the circulating water system is a closed system.

d. Makeup water to compensate for cooling tower evaporation, drift and blowdown losses will be restricted.

QUESTION: 039 (1.00)

WHICH one of the following features of the Unit 1 Nuclear Service Cooling Water (NSCW) system is provided to prevent water hammer in a shutdown NSCW train when it is placed in service?

a. Installed tie line from the opposite train return header.

b. High point vacuum breakers installed in the suction headers.

c. Suction valve opening delay after pump start.

d. Sequenced opening of the cooler isolation outlet and inlet valves.

QUESTION: 040 (1.00)

The plant is operating at 100% power. Upon receipt of an "SI" ESFAS signal, WHICH one of the following occurs in the Nuclear Service Cooling Water system?

a. Three NSCW pumps per train start.

b. Valves for reactor cavity cooling open.

c. The third NSCW pump will start.

d. Two pumps per train will start.

QUESTION: 041 (1.00)

WHICH one of the following design features prevents runout of the High Head Safety Injection (HHSI) pumps?

a. Throttle valves in the hot and cold leg recirculation lines.

b. Correlation of system actuating setpoints in ECCS systems.

c. Increased design pumping capacity of the HHSI pumps.

d. Orifices in the HHSI pump discharge lines.

QUESTION: 042 (1.00)

WHICH one of the following specifies the MINIMUM accumulator boron concentration required to ensure the reactor will remain subcritical during a small-break LOCA?

a. 2300 ppm

b. 2100 ppm

c. 2000 ppm

d. 1900 ppm

QUESTION: 043 (1.00)

WHICH one of the following combinations of valves receive an actuation signal upon receipt of an SI signal?

1. CCP suction valves from RWST.
2. CCP suction valves from VCT.
3. CCP discharge valves to the RCS.
4. CCP discharge valves to the RCP seals.
5. RCP seal water heat exchanger CVCS isolation valves.
6. SI pump discharge valves.
7. Accumulator isolation valves.

a. 2, 3, 4, 6, and 7

b. 1, 2, 4, 5, and 6

c. 1, 3, 4, 5, and 7

d. 1, 2, 3, 5, and 7

QUESTION: 044 (1.00)

In WHICH one of the following plant operations is the RHR pump suction lined up to the RWST?

a. Cold leg injection.

b. Normal Cooldown.

c. Draining the refueling cavity.

d. Hot leg injection.

QUESTION: 045 (1.00)

WHICH one of the following describes the flowpath of the Intermediate Head Safety Injection (IHSI) pumps during the cold leg recirc phase of a LOCA?

a. Suction directly from RHR pump "A" discharge, IHSI "A" pump, common header, and discharge into each cold leg.

b. Suction directly from RCS cold legs, IHSI "B" pump, common header, and discharge into each cold leg.

c. Suction directly from RCS cold legs, IHSI "A" pump, common header, and discharge into each cold leg.

d. Suction directly from RHR pump "B" discharge, IHSI "B" pump, common header, and discharge into each cold leg.

QUESTION: 046 (1.00)

At WHICH one of the following RCS pressures is the operator required to monitor for RHR flow during a LOCA?

a. 600 psig

b. 450 psig

c. 300 psig

d. 150 psig

QUESTION: 047 (1.00)

WHICH one of the following statements is NOT part of the design basis for the pressurizer?

a. Loading and unloading at 5%/minute with AUTOMATIC reactor control and NO reactor trip.

b. Step changes of +/- 10% with AUTOMATIC reactor control and NO reactor trip.

c. Step load reduction of 50% with AUTOMATIC reactor control and 40% steam dumps and NO reactor trip.

d. Step load reduction of 85% with no AUTOMATIC reactor control and 20% steam dumps and NO reactor trip.

QUESTION: 048 (1.00)

Given the following information:

- Loss of all AC power
- Reactor trip
- "A" and "B" emergency diesel generators are running and loaded
- 3 Control bank rods are stuck at 224 steps
- Both "A" and "B" CCP's are running

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

a. Place the blender control switch to the AUTO-after-start position.

b. Place the blender control switch to the MANUAL position.

c. Manually load BAT pumps onto the bus and open the emergency borate valve.

d. Place the blender control switch to the BORATE position.

QUESTION: 049 (1.00)

With a BAT pump control switch in the AUTO position, WHICH one of the following will automatically start the BAT pump(s)?

a. Reactor makeup control system started in manual mode.

b. Reactor makeup water pump manually started.

c. Opposite train BAT pump manually started.

d. Shutdown panel transfer switch selected to local control.

QUESTION: 050 (1.00)

The plant is operating at 100% power with all control rods at 225 steps. One BAT pump is operating and one CCP is operating. When the operator opens the emergency borate valve (HV-8104), WHICH one of the following specifies approximately how long will it take to achieve 1% shutdown?

a. Less than 90 minutes

b. About 100 minutes

c. About 110 minutes

d. Greater than 120 minutes

QUESTION: 051 (1.00)

WHICH one of the following represents the flow rate limits of the boric acid flow controller and the position of Flow Control Valve (FV-110A) at 100% controller output?

a. 0 to 40 gpm, FV-110A is closed

b. 0 to 40 gpm, FV-110A is open

c. 0 to 120 gpm, FV-110A is closed

d. 0 to 120 gpm, FV-110A is open

QUESTION: 052 (1.00)

While recovering a dropped rod, DRPI is lost on the dropped rod. WHICH one of the following actions must be performed before further rod movement with the rod control system proceeds?

a. Trip the turbine and reactor and perform repairs.

b. Consult Reactor Engineering and Technical Specifications.

c. Dilute/Borate to restore Tavg.

d. Reduce turbine power to 75%.

QUESTION: 053 (1.00)

WHICH one of the following is electrically disconnected when recovering a misaligned control rod?

a. The movable gripper coil for the misaligned control rod.

b. The movable gripper coils for the remaining rods in the affected bank.

c. The lift coils for the remaining rods in the affected bank.

d. The lift coil for the misaligned control rod.

QUESTION: 054 (1.00)

Given the following information:

- Normal plant operations at 100% power.
- Control bank rods at 208 steps.

If the control bank rods suddenly started stepping out, WHICH one of the following gives the immediate actions of the Reactor Operator?

a. Check no turbine RUNBACK, place bank selector in MANUAL, rod control switch in HOLD, and check rod motion STOPPED.

b. Check no turbine RUNBACK, place bank selector in AUTO, rod control switch in HOLD, then TRIP the turbine.

c. Check Turbine RUNBACK, place bank selector in MANUAL, rod control switch in IN, and check rod motion INWARD.

d. Check Turbine RUNBACK, place bank selector in MANUAL, rod control switch in IN, and TRIP the reactor.

QUESTION: 055 (1.00)

WHICH one of the following represents how core exit thermocouples will respond to a stuck control rod that is greater than 18 steps out of alignment below the associated rods in that group?

a. Higher temperature in the vicinity of the affected group rods.

b. Higher temperature in the vicinity of the stuck rod.

c. Lower temperature in the vicinity of the affected group rods.

d. Lower temperature in the vicinity of the stuck rod.

QUESTION: 056 (1.00)

WHICH one of the following conditions warrant tripping the reactor if a loss of Auxiliary Component Cooling Water to the RCPs has occurred?

	Motor Bearing Temp.	Stator Winding Temp.	Pump Bearing Temp.	Seal water Inlet Temp.	Time duration of ACCW loss
a.	180 F	310 F	229 F	198 F	2 min.
b.	194 F	301 F	220 F	190 F	9 min.
c.	190 F	306 F	209 F	200 F	11 min.
d.	184 F	310 F	228 F	201 F	9 min.

QUESTION: 057 (1.00)

During plant startup with power at 45%, the Reactor Operator determines that RCP shaft vibration is 11 mils and increasing at a rate of 2 mils per hour and trips the RCP in accordance with VEGP 17008-1 alarm response procedures.

WHICH one of the following is an immediate action SUBSEQUENT to tripping the RCP?

a. Commence down power of the plant to 25% power.

b. Verify affected SG level trending to 50%.

c. Commence shutdown of the reactor plant.

d. Trip the main turbine and the reactor.

QUESTION: 058 (1.00)

WHICH one of the following is the immediate effect of a loss of all RCPs while the plant is at 100% power?

a. Breach of fuel clad in hottest channel.

b. Rapid increase in coolant temperature and pressure.

c. Increase in core exit thermocouple temperature to above 1200 degrees F.

d. Decrease of RCS subcooling to approximately 24 degrees F.

QUESTION: 059 (1.00)

WHICH one of the following explains why is it desirable to start an RCP if electrical power becomes available during a natural circulation cooldown?

a. To regain control of the plant cooldown.

b. To regain plant temperature and pressure control.

c. To mitigate the radiation release caused by lifting PORVs.

d. To permit faster cooldown and limit upper head voiding.

QUESTION: 060 (1.00)

If a failure of the steam generator Atmospheric Relief Valve (ARV) control system prevented automatic and manual operation from the control room, WHICH one of the following is an alternate method of operating the ARV?

a. Locally starting and stopping the hydraulic operator pump.

b. Local override of the ARV valve operators.

c. Local throttling of the ARV inlet isolation valve.

d. Local handpump operation of the ARV.

QUESTION: 061 (1.00)

If an event forced a reactor trip and control room evacuation which prevented the use of the MDAFW pumps, WHICH one of the following is the method for establishing feedwater flow to the steam generators?

a. Local operation of the TDAFW pump from shutdown panel A.

b. Local operation of the TDAFW pump from shutdown panel B.

c. Local operation of the TDAFW pump from shutdown panel C.

d. Local operation of the main feed pumps from shutdowm panel A.

QUESTION: 062 (1.00)

In the event of a fire that forces the evacuation of the control room, WHICH one of the following is the preferred location for control of steam generator water level?

a. Shutdown panel A.

b. Shutdown panel B.

c. Shutdown panel C.

d. No required preference.

QUESTION: 063 (1.00)

The control room is being evacuated due to a fire in the Nuclear Instrumentation racks. WHICH one of the following is NOT an immediate or subsequent operator action during a control room evacuation?

a. Trip the reactor.

b. Ensure suction is not lost to the charging pumps.

c. Trip all RCPs.

d. Prevent depressurization due to spray.

QUESTION: 064 (1.00)

In the event of a loss of main feedwater, WHICH one of the following pairs of trips or actuations provide protection against core damage?

a. Turbine trip and reactor trip

b. Safety Injection and AUTOMATIC Auxiliary Feedwater flow.

c. Reactor trip and AUTOMATIC Auxiliary Feedwater flow.

d. Reactor trip and Safety Injection.

QUESTION: 065 (1.00)

During a reactor trip event, WHICH one of the following explains why AFW is manually throttled to control feed flow to at least 570 gpm?

a. To limit plant cooldown rate to within the design parameters.

b. To minimize the impact on primary plant parameters.

c. To prevent steam generators from boiling dry.

d. To maintain feed flow at least equal to steam flow.

QUESTION: 066 (1.00)

WHICH one of the following explains why an operator should maintain feed flow equal to steam flow when controlling feed flow in manual?

a. SGFP speed is not programed to respond to effects of shrink and swell.

b. The immediate effects of shrink and swell on level are inverse to SG feed water requirements.

c. The immediate effects of shrink and swell on MFRV delta-P are inverse to SG feed water requirements.

d. MFRV position is directly proportional to steam flow and SG level.

QUESTION: 067 (1.00)

WHICH one of the following will initiate the auto-start signal for a motor driven auxiliary feed pump (MDAFP)?

a. Lo-Lo level in the SGs, 1/4 channels on 2/4 SGs.

b. SI signal from the opposite train.

c. Loss of 1/2 Main Feed pumps.

d. Loss of offsite power to the associated train.

QUESTION: 068 (1.00)

During a plant startup while operating in the source range, WHICH one of the following is an operator immediate action in response to a failure of Source Range channel N31?

a. Place Source Range channel N31 level trip switch in bypass.

b. Select the Source Range channel N32 on NR-45.

c. Suspend all operations involving reactivity changes.

d. Suspend all operations involving positive reactivity changes.

QUESTION: 069 (1.00)

While in MODE 2, WHICH one of the following gives the condition when termination of reactor startup is required if a Source Range channel has failed low?

a. When reactor power is below the P-6 setpoint.

b. When reactor power is above the P-6 setpoint.

c. Anytime; Technical Specifications require 2 operable Source Range instruments.

d. When boron dilution operations are in progress.

QUESTION: 070 (1.00)

The Intermediate Range indication comes on scale at approximately 10,000 cps on the Source Range. WHICH one of the following count rates represents when minimum Source Range to Intermediate Range overlap is reached? (Assume design minimum overlap.)

a. 11,500 cps

b. 50,000 cps

c. 150,000 cps

d. 500,000 cps

QUESTION: 071 (1.00)

WHICH one of the following statements describes the action needed/system response if RE-0014 failed low during a radioactive waste gas release.

a. RE-0013 would have to be selected for automatic control of RV-0014.

b. RV-0014 would have to be shut manually when limits are exceeded.

c. RV-0014 would have to be shut manually upon failure of RE-0014.

d. Automatic shutting of RV-0014 would terminate the release.

QUESTION: 072 (1.00)

WHICH one of the following radiation monitors is safety related?

a. Waste Gas Processing System Effluent (ARE-0014)

b. Condenser Air Ejector and Steam Packing Exhauster (RE-12839C)

c. Containment Vent Effluent (RE-2565-A)

d. Fuel Handling Building Effluent (ARE-2532-A)

QUESTION: 073 (1.00)

WHICH one of the following system responses will occur when the radiation level causing an "ALERT" alarm on 1-RE-0014 decreases to below the setpoint?

a. The ERF color display reading will appear green.

b. The ERF color display reading will appear yellow.

c. The ERF color display reading will appear magenta.

d. The ERF color display reading will flash orange.

QUESTION: 074 (1.00)

A loss of offsite power occurs with entry into VEGP-19002-C, "Natural Circulation Cooldown". Offsite power is then restored.

WHICH one of the following states when it is NOT necessary to establish normal RCP support conditions prior to restarting an RCP?

a. A RED path condition exists on SUBCRITICALITY.

b. A RED path condition exists on CORE COOLING.

c. A RED path condition exists on HEAT SINK.

d. A RED path condition exists on INVENTORY.

QUESTION: 075 (1.00)

Assume pressurizer level control selector switch is in the 459/460 position and channel 460 fails low, WHICH one of the following occurs?

a. Charging flow increases.

b. RCP seal injection flow increases.

c. Pressurizer level decreases.

d. Letdown flow stops.

QUESTION: 073 (1.00)

WHICH one of the following system responses will occur when the radiation level causing an "ALERT" alarm on 1-RE-0014 decreases to below the setpoint?

a. The ERF color display reading will appear green.

b. The ERF color display reading will appear yellow.

c. The ERF color display reading will appear magenta.

d. The ERF color display reading will flash orange.

QUESTION: 074 (1.00)

A loss of offsite power occurs with entry int VEGP-19002-C, "Natural Circulation Cooldown". Offsite power is then restored.

WHICH one of the following states when it is NOT necessary to establish normal RCP support conditions prior to restarting an RCP?

a. A RED path condition exists on SUBCRITICALITY.

b. A RED path condition exists on CORE COOLING.

c. A RED path condition exists on HEAT SINK.

d. A RED path condition exists on INVENTORY.

QUESTION: 075 (1.00)

Assume pressurizer level control selector switch is in the 459/460 position and channel 460 fails low, WHICH one of the following occurs?

a. Charging flow increases.

b. RCP seal injection flow increases.

c. Pressurizer level decreases.

d. Letdown flow stops.

QUESTION: 076 (1.00)

WHICH one of the following will cause a reactor makeup water pump to auto-start?

a. Safety Injection Signal.

b. RMCS started with mode selector switch in dilute.

c. Makeup Water Pump discharge header low flow.

d. Trip of the other running makeup water pump.

QUESTION: 077 (1.00)

WHICH one of the following correctly fills in the blanks?

The Letdown Pressure Control Valve (PV-131) fails _____, but normally maintains pressure upstream of the valve above saturation to prevent flashing in the _____.

a. Open; letdown demineralizer

b. Open; letdown line

c. Shut; letdown demineralizer

d. Shut; letdown line

QUESTION: 078 (1.00)

WHICH one of the following portions of the CVCS system are designed to function as an integral part of the ECCS after an SI and phase "A" containment isolation?

a. The VCT and RCP seal injection system.

b. The VCT and normal CCP miniflow system.

c. The RWST and RCP seal injection system.

d. THE RWST and normal CCP miniflow system.

QUESTION: 079 (1.00)

WHICH one of the following bus undervoltage conditions is a setpoint for starting the related safeguards sequencer?

a. Voltage at less than 70% for greater than or equal to 0.8 seconds

b. Voltage at less than 70% for greater than or equal to 10 seconds

c. Voltage at less than 88.5% for greater than or equal to 0.8 seconds

d. Voltage at less than 88.5% for greater than or equal to 10 seconds

QUESTION: 080 (1.00)

WHICH one of the following ESFAS signals/conditions will by itself initiate a feedwater isolation signal without a Main Feed Pump trip?

a. High-high steam generator level.

b. Low-low steam generator level.

c. Reactor trip with low Tavg.

d. Safety Injection.

QUESTION: 081 (1.00)

WHICH one of the following best describes normal operation of each of the three (3) RCP seals?

a. No. 1 - film riding, No. 2 - face rubbing, No. 3 - film riding.

b. No. 1 - face rubbing, No. 2 - film riding, No. 3 - face rubbing.

c. No. 1 - face rubbing, No. 2 - face rubbing, No. 3 -film riding.

d. No. 1 - film riding, No. 2 - face rubbing, No. 3 - face rubbing.

QUESTION: 082 (1.00)

WHICH one of the following places the No. 2 RCP seal into operation upon a failure of the No. 1 RCP seal?

a. High pressure on the seal.

b. High seal injection flow.

c. High seal leak off flow.

d. High RCS flow through the seal.

QUESTION: 083 (1.00)

WHICH one of the following is a possible effect of a loss of CCW to the Spent Fuel Pool Cooling system?

a. Spent fuel criticality.

b. Airborne radioactivity.

c. Area radiation.

d. Boron crystallization.

QUESTION: 084 (1.00)

WHICH one of the following conditions will trip a rotary air compressor?

a. Low lube oil pressure.

b. Low discharge pressure.

c. High lube oil pressure.

d. High discharge pressure.

QUESTION: 085 (1.00)

WHICH one of the following results would be expected if one channel of the pressurizer level instruments is in test and a technician inadvertently drains the reference leg of another pressurizer level channel? (Assume plant power is greater than 50%.)

a. Pressurizer low level heaters off and letdown isolation.

b. Pressurizer low level deviation alarm.

c. Pressurizer high level opening FCV-121.

d. Pressurizer high level reactor trip.

QUESTION: 086 (1.00)

WHICH one of the following describes the design feature of the Pressurizer level control system which provides protection for the pressurizer heaters?

a. Heater cutout at 17% level.

b. Heater cutout at 14% level.

c. Heater cutout at 14% above program level.

d. Heater cutout at 5% above program level.

QUESTION: 087 (1.00)

WHICH one of the following is the expected response of pressurizer level as a result of pressurizer level control system functions if a 3 degree F decrease in Tavg occurs?

a. Level decreases approximately 3%.

b. Level decreases approximately 2%.

c. Level decreases approximately 1%.

d. No discernable level change.

QUESTION: 088 (1.00)

Given that the pressurizer level control selector switch is in the 459/460 position, WHICH one of the following would be likely to FIRST alert the operator that pressurizer level channel 460 had failed high?

a. Charging flow indication decreasing to minimum.

b. All Pressurizer backup heaters energized.

c. Pressurizer high water level alert alarm.

d. Letdown isolation and flow decreasing to zero.

QUESTION: 089 (1.00)

WHICH one of the following is the design pressure for the PRT rupture disks to rupture?

a. 85 psig.

b. 90 psig.

c. 95 psig.

d. 100 psig.

QUESTION: 090 (1.00)

In addition to a high pressure reactor trip, WHICH one of the following pressurizer features provides design basis over-pressure protection for the RCS pressure boundary?

a. Pressurizer PORV's.

b. Pressurizer code safeties.

c. Pressurizer pressure control system.

d. Pressurizer spray system.

QUESTION: 091 (1.00)

WHICH one of the following correctly fills the blanks?

The P-4 interlock trips the ____[1]____ upon a ____[2]____ trip, and the P-9 interlock trips the ____[3]____upon a ____[4]____ trip above 50% power.

a. [1] reactor, [2] turbine, [3] turbine, [4] reactor

b. [1] turbine, [2] reactor, [3] reactor, [4] turbine

c. [1] reactor, [2] turbine, [3] reactor, [4] turbine

d. [1] turbine, [2] reactor, [3] turbine, [4] reactor

QUESTION: 092 (1.00)

WHICH one of the following is correct concerning the effect a loss of instrument air or electric control power would have on Unit 2 with RHR Train A in service while in Mode 5?

a. The RHR Heat Exchanger 2A Outlet valve, 2-HV-606, would fail SHUT, and the RHR Flow Control valve, 2-FV-618, would fail SHUT resulting in a total loss of RHR flow.

b. The RHR Heat Exchanger 2A Outlet valve, 2-HV-606, would fail OPEN, and the RHR Flow Control valve, 2-FV-618, would fail OPEN resulting in maximum RHR flow and possible pump runout.

c. The RHR Heat Exchanger 2A Outlet valve, 2-HV-606, would fail SHUT, and the RHR Flow Control valve, 2-FV-618, would fail OPEN resulting in nomimal flow with no cooldown.

d. The RHR Heat Exchanger 2A Outlet valve, 2-HV-606, would fail OPEN, and the RHR Flow Control valve, 2-FV-618, would fail SHUT resulting in nomimal flow with maximum cooldown.

QUESTION: 093 (1.00)

After performing VEGP-14905-1, "RCS Leakage Calculation", the reactor operator reports that final IDENTIFIED LEAKAGE exceeds the acceptance criteria. The plant is at 100% power.

WHICH one of the following is the immediate action in accordance with VEGP-18004-C, "Reactor Coolant System Leakage", in response to this report?

a. Control charging and maintain pressurizer level.

b. Verify the pressurizer PORVs are shut.

c. Shift VCT level control to manual.

d. Isolate the source of the leak.

QUESTION: 094 (1.00)

WHICH one of the following occurs when the Pressurizer level control system senses a level of 17% and decreasing?

a. Pressurizer spray valves open.

b. Pressurizer backup heaters energize.

c. Phase "A" isolation is initiated.

d. CVCS orifice isolation valves close.

QUESTION: 095 (1.00)

Given:

- Normal Mode 1, at 100% reactor power.
- RCP 4 CONTROLLED LKG HI/LO FLOW" annunciator has actuated.
- RCP 4 seal leakoff flow suddenly ramps to 12 gpm.
- No other alarms associated with the RCPs

WHICH one of the following is the expected actions to be taken in accordance with VEGP-13003-1, "Reactor Coolant Pump Operation"?

a. Isolate seal injection, and stop RCP 4 immediately.

b. Isolate seal injection, and stop RCP 4 within 30 minutes.

c. Isolate seal leakoff, and stop RCP 4 immediately.

d. Isolate seal leakoff, and stop RCP 4 within 30 minutes.

QUESTION: 096 (1.00)

WHICH one of the following subsequent action steps of 19000-C, Reactor Trip or Safety Injection is an indication of a small break LOCA and will cause entry into VEGP-19010-C, (E-1), Loss of Reactor or Secondary Coolant?

a. CCPs running.

b. Feedwater isolation.

c. RCS temperature stable at 557 F.

d. Containment pressure increasing.

QUESTION: 097 (1.00)

WHICH one of the following is the basis for VEGP-19030-C, (E-3), Steam Generator Tube Rupture?

a. Terminate leakage of RCS into the secondary system.

b. Cooldown and depressurize the RCS to establish RHR cooling.

c. Prevent the release of radioactive effluents from the ruptured Steam Generator.

d. Prevent radioactive contamination of main steam system and turbine generator.

QUESTION: 098 (1.00)

Ir responding to a Steam Generator Tube Rupture, after the transition has been made from VEGP-19000-C, "E-0, Reactor Trip or Safety Injection", to VEGP-19030-C, "E-3, Steam Generator Tube Rupture", WHICH one of the following is correct concerning the usage of RCP trip criteria?

a. RCPs should be tripped anytime during VEGP-19030-C if the criteria are met.

b. RCPs should be tripped during VEGP-19030-C only if the criteria are met when the operator is specifically required to check the criteria at step 1.

c. RCPs should be tripped during VEGP-19030-C only if the criteria are met before isolating the ruptured SG(s) at step 3.

d. RCPs should be tripped during VEGP-19030-C only if the criteria are met before initiating RCS cooldown and depressurization at step 14.

QUESTION: 099 (1.00)

Following a double-ended SG tube rupture, VEGP-19030-C, "E-3, Steam Generator Tube Rupture", has been successfully executed through the completion of RCS cooldown and depressurization, the securing of ECCS flow, and the restoration of normal charging and letdown. As RO, you note the following conditions:

Ruptured SG Level - 60% and DECREASING
Pressurizer Level - 55% and DECREASING

WHICH one of the following correctly describes the action which should be taken to establish equilibrium conditions (steady SG and PZR levels)?

a. Reduce charging flow; decrease RCS pressure using PZR spray.

b. Reduce charging flow; increase RCS pressure using PZR heaters.

c. Increase charging flow; decrease RCS pressure using PZR spray.

d. Increase charging flow; increase RCS pressure using PZR heaters.

QUESTION: 100 (1.00)

A station blackout which causes a reactor trip occurs. WHICH one of the following automatic equipment actuations will occur in the AFW system?

a. The MDAFW pumps start immediately then the TDAFW pump starts after the DGs start.

b. The TDAFW pump sequences onto the emergency buses after DGs start.

c. The MDAFW pumps sequence onto the emergency buses after DGs start and then the TDAFW pump starts.

d. TDAFW pump starts, then MDAFW pumps sequence onto the emergency buses after DGs start.

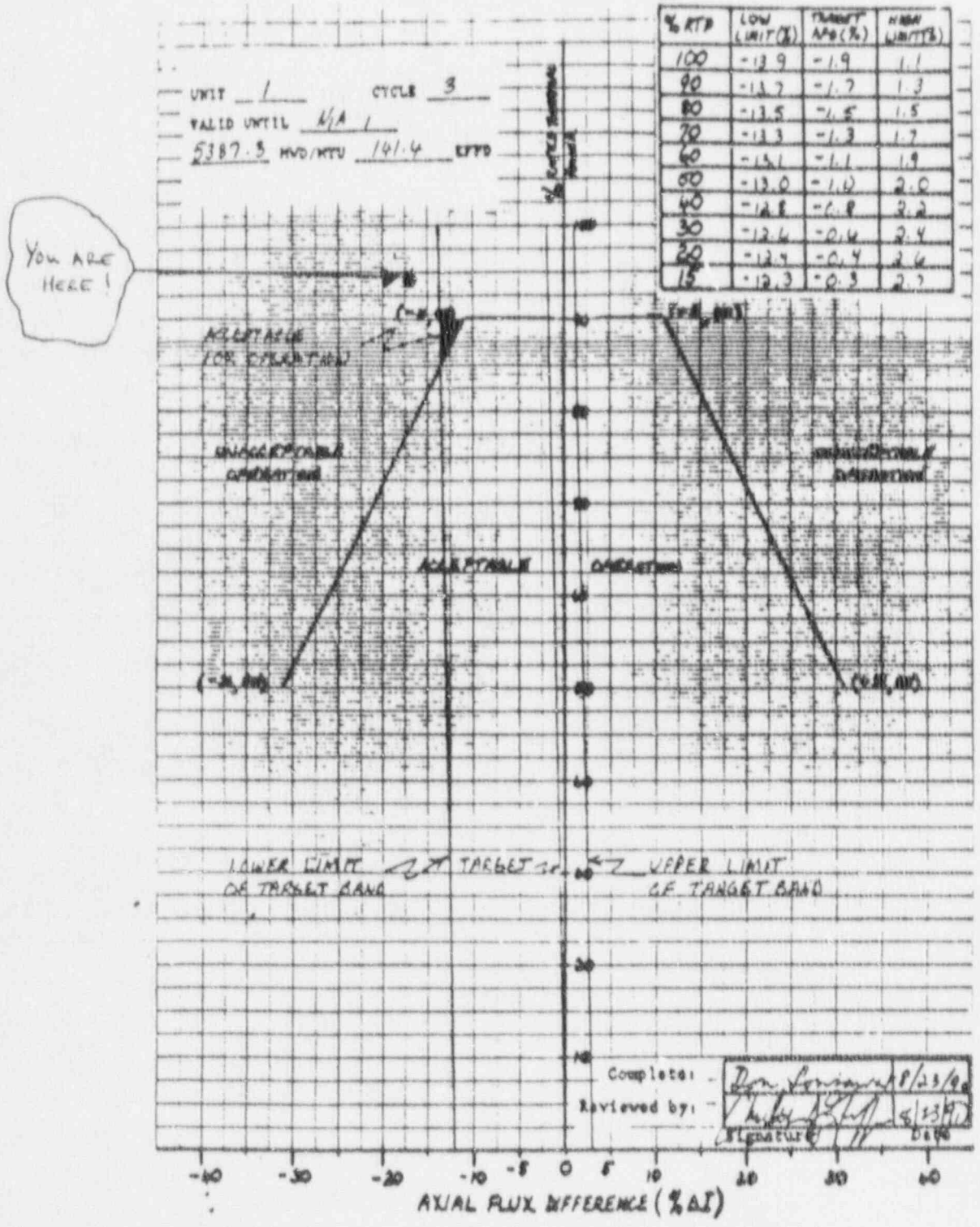
(********** END OF EXAMINATION **********)

Approval	Vogtle Electric Generating Plant NUCLEAR OPERATIONS	Procedure No. PTDB-1 TAB 6.0
Date	Unit 1	Revision No. 33
	Georgia Power	Page No. 1 of 1

TAB 6.0
AFD TARGET BAND
UNIT 1 CYCLE 3

AXIAL FLUX DIFFERENCE LIMITS AS A FUNCTION OF RATED THERMAL POWER

% RTP	LOW LIMIT (%)	TARGET AFD (%)	HIGH LIMIT (%)
100	-13.9	-1.9	1.1
90	-13.7	-1.7	1.3
80	-13.5	-1.5	1.5
70	-13.3	-1.3	1.7
60	-13.1	-1.1	1.9
50	-13.0	-1.0	2.0
40	-12.8	-0.8	2.2
30	-12.6	-0.6	2.4
20	-12.4	-0.4	2.6
15	-12.3	-0.3	2.7



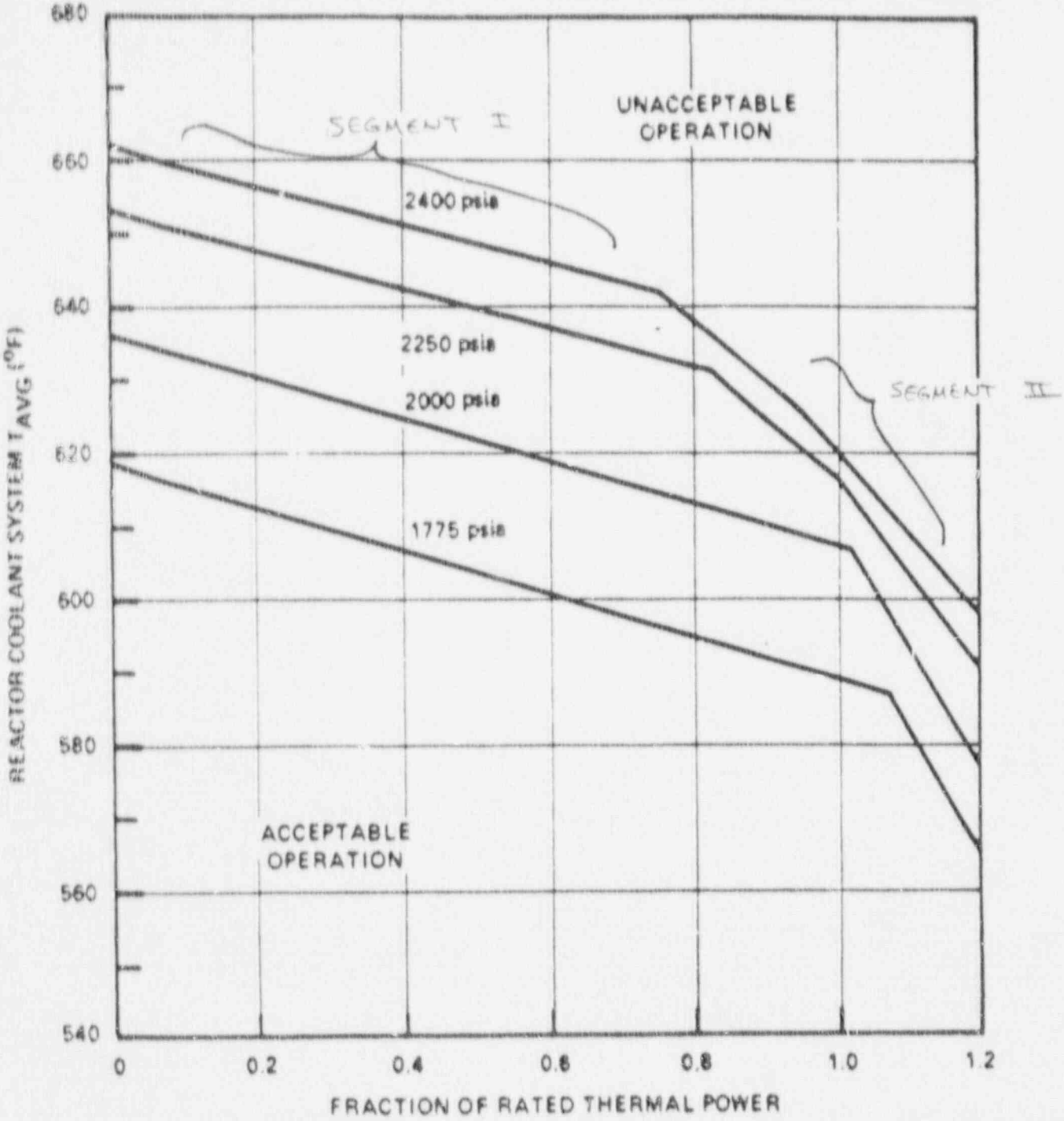


FIGURE 2.1-1

REACTOR CORE SAFETY LIMIT

REACTOR OPERATOR

ANSWER: 001 (1.00)

d.

RFFERENCE:

VOGTLE: VEGP 00308-C, "Independent Verification Policy"

194001K101 ..(KA's)

ANSWER: 002 (1.00)

a.

REFERENCE:

VOGTLE: VEGP 10008-C, Conduct of Operations, Section 3.5, Shift Relief and Evolution Briefings.

194001A110 ..(KA's)

ANSWER: 003 (1.00)

b.

REFERENCE:

VOGTLE: VEGP 00920-C, Section 4

194001K104 ..(KA's)

ANSWER: 004 (1.00)

b.

REFERENCE:

VOGTLE: 63304-10-C, Objective 13.

194001K106 ..(KA's)

ANSWER: 005 (2.00)

a. 4

b. 1

c. 2

d. 3

REFERENCE:

VOGTLE: VEGP 00306-C, Temporary Jumper and Lifted Wire Control
VEGP 00304-C, Equipment Clearance and Tagging

194001K102 ..(KA's)

ANSWER: 006 (1.00)

c.

REFERENCE:

VOGTLE: VEGP 00258-C, Safe Work Procedures for Closed Vessels, Confined Spaces, Wet Locations and systems.

194001K113 ..(KA's)

ANSWER: 007 (1.00)

d.

REFERENCE:

VOGTLE: VEGP 10006-C, Reactor Trip Review.

194001A113 ..(KA's)

ANSWER: 008 (1.00)

(0.50 points each)

a. 3

b. 2

REFERENCE:

VOGTLE: VEGP LO-LP-34510-01, Objective 7, p. 31.
Technical Specifications 2.1.1, p. 2-1 & 2-2; B-2.1.1, p. B-2-1.

194001K107 ..(KA's)

ANSWER: 009 (1.00)

a.

REFERENCE:

VOGTLE: VEGP 00920-C, Section 4

194001K103 ..(KA's)

ANSWER: 010 (1.00)

a.

REFERENCE:

VOGTLE: LO-LP-43101-C, Objective 4.e

194001K116 ..(KA's)

ANSWER: 011 (1.00)

a.

REFERENCE:

VOGTLE: VEGP Technical Specifications, Power Distribution Limits, p. 3/4 2- 1.

194001K108 ..(KA's)

ANSWER: 012 (0.00)

*** QUESTION DELETED ***

ANSWER: 013 (1.00)

d.

REFERENCE:

VOGTLE: VEGP Technical Specification 3.4.9.3, Cold Overpressure Protection Systems

194001A115 ..(KA's)

ANSWER: 014 (1.00)

a. two

b. 2

c. 125

d. 50

REFERENCE:

VOGTLE: VEGP 12002-C, Unit Heatup to Normal Operating Temperature and Pressure, p. 1

001000A102 ..(KA's)

ANSWER: 015 (1.00)

b.

REFERENCE:

VOGTLE: Text Chapter 6, Rod Control System, II.B.2.; LO-LP-27102, Objective II.1

001000A102 ..(KA's)

ANSWER: 016 (1.00)

a.

REFERENCE:

VOGTLE: Text Chapter 6, Rod Control System, II.A.2.

001000A103 ..(KA's)

ANSWER: 017 (1.00)

a.

REFERENCE:

VOGTLE: Text, Chapter 4b, Sections III A. and B.; LO-LP-17401-06-c, Section II.B.8.e.7)

017000G001 ..(KA's)

ANSWER: 018 (1.00)

c.

REFERENCE:

VOGTLE: LO-LP-17401-06-C, Section II.B.7.

017000G008 ..(KA's)

ANSWER: 019 (1.00)

a.

REFERENCE:

VOGTLE: E-0, Reactor Trip or Safety Injection; LO-LP-37061-05, Section II.A.2.a

017000G015 ..(KA's)

ANSWER: 020 (1.00)

b.

REFERENCE:

VOGTLE: VEGP Text, Chapter 24F, Section C.3

022000K101 ..(KA's)

ANSWER: 021 (1.00)

c.

REFERENCE:

VOGTLE: LO-LP-29130-3, Section II.B.1.b.3), Objective 1
022000K402 ..(KA's)

ANSWER: 022 (1.00)

b.

REFERENCE:

VOGTLE: LO-LP-29130-3, Section II.B.4.a.1), Objective 3
022000K403 ..(KA's)

ANSWER: 023 (1.00)

d.

REFERENCE:

VOGTLE: LO-LP-18201-09-C, II.A.10.a.2).b), Objective 7
059000K402 ..(KA's)

ANSWER: 024 (1.00)

a.

REFERENCE:

VOGTLE: VEGP Text, Chapter 13a, Section C; LO-LP-18201-C, Objective 2

059000K416 ..(KA's)

ANSWER: 025 (1.00)

c.

REFERENCE:

VOGTLE: VEGP Text, Chapter 13a, Section B.2.b.; LO-LP-18201-C, Objective 2

059000K419 ..(KA's)

ANSWER: 026 (1.00)

b.

REFERENCE:

VOGTLE: LO-LP-20101-13-C, Section III.B.6.c.; Objective 5

06100K401 ..(KA's)

ANSWER: 027 (1.00)

c.

REFERENCE:

VOGTLE: Text, Chapter 13d, Section 1. LO-LP-20101-13-C, Objective 3.

061000K501 ..(KA's)

ANSWER: 028 (1.00)

d.

REFERENCE:

VOGTLE: VEGP LO-LP-20101-08, Objectives 4d, 4e, and 8a, pp. 50 & 53.

061000K402 ..(KA's)

ANSWER: 029 (1.00)

c.

REFERENCE:

VOGTLE: Text Chapter 8a, Section B. page 8a-53; LO-LP-28103-09-C, Objective 4.

013000A101 ..(KA's)

ANSWER: 030 (1.00)

a.

REFERENCE:

VOGTLE: LO-LP-25102-08-C, Section II.A.5.a.3); Objective 4.
033000K405 ..(KA's)

ANSWER: 031 (1.00)

d.

REFERENCE:

VOGTLE: Text Chapter 18b; Section C.1.; LO-LP-25102-C, Objective 2.
033000A203 ..(KA's)

ANSWER: 032 (1.00)

b.

REFERENCE:

VOGTLE: LO-LP-21102-11-C, Section II.D.4.d.2).b); Objective 15
039000K405 ..(KA's)

ANSWER: 033 (1.00)

b.

REFERENCE:

VOGTLE: LO-LP-21101-07-C, Section III.A.4; Objective 4.

039000K101 ..(KA's)

ANSWER: 034 (1.00)

d.

REFERENCE:

VOGTLE: Text Chapter 12b, Section II.B.2; LO-LP-212001-12

03900K102 ..(KA's)

ANSWER: 035 (1.00)

c.

REFERENCE:

VOGTLE: Text Chapter 8a, Section B, page 8a-57 para. 2; LO-LP-28102-05, Objective 2.b

012000K610 ..(KA's)

ANSWER: 036 (1.00)

a.

REFERENCE:

VOGTLE: Text Chapter 8a, page 8a-60; LO-LP-28102-05, Objective 1a.
012000K103 ..(KA's)

ANSWER: 037 (1.00)

a.

REFERENCE:

VOGTLE: Text Chapter 8a, page 8a-19; LO-LP-28001-02, Objective 2
012000K404 ..(KA's)

ANSWER: 038 (1.00)

d.

REFERENCE:

VOGTLE: Text, Chapter 10h, page 10h-4; LO-LP-07101-11-C, Objective 18.
075000A201 ..(KA's)

ANSWER: 039 (1.00)

a.

REFERENCE:

VOGTLE: LO-LP-06101-11-C, Objective 8.
075000A401 ..(KA's)

ANSWER: 040 (1.00)

d.

REFERENCE:

VOGTLE: LO-LP-06101-11C, Section II.C.1.; Objective 2.
075020K301 ..(KA's)

ANSWER: 041 (1.00)

a.

REFERENCE:

VOGTLE: Text chapter 9a, page 9a-5; LO-LP-13101-0E, Objective 2
006000A101 ..(KA's)

ANSWER: 042 (1.00)

d.

REFERENCE:

VOGTLE: LO-LP-13401-06-C, II.3.c.9); Text Chapter 9a, page 9a-24, Technical Specifications IV.A.1.a).(3)

006000A102 ..(KA's)

ANSWER: 043 (1.00)

d.

REFERENCE:

VOGTLE: Text Chapter 9a page 9a-16, II.B.1; LO-LP-13001-06-C, Objective 5

006000K204 ..(KA's)

ANSWER: 044 (1.00)

a.

REFERENCE:

VOGTLE: LO-LP-12101-C, Objective 2.

005000K111 ..(KA's)

ANSWER: 045 (1.00)

d.

REFERENCE:

VOGTLE: LO-LP-13201, Objective 2
005000K112 ..(KA's)

ANSWER: 046 (1.00)

c.

REFERENCE:

VOGTLE: LO-LP-12101-20-C, page 21; Objective 11,
005000K113 ..(KA's)

ANSWER: 047 (1.00)

d.

REFERENCE:

VOGTLE: LO-LP-16301-09-C, Objective 12, p. 5.
002000K109 ..(KA's)

ANSWER: 048 (1.00)

c.

REFERENCE:

VOGTLE: Text, Chapter 5d, page 5d-33, LO-LP-09402-03-C, Objective 3
000024A102 ..(KA's)

ANSWER: 049 (1.00)

a.

REFERENCE:

VOGTLE: LO-LP-09402-03-C, page 10, Objective 3
000024A103 ..(KA's)

ANSWER: 050 (1.00)

a.

REFERENCE:

VOGTLE: LO-LP-09402-03-C, page 18; Objective 1
000024A104 ..(KA's)

ANSWER: 051 (1.00)

b.

REFERENCE:

VOGTLE: Text, Chapter 5d, page 5d-23, LO-LP-09402-03-C, Objective 3
000024A113 ..(KA's)

ANSWER: 052 (1.00)

b.

REFERENCE:

VOGTLE: VEGP-18003-C, step A1, NOTE, page 3 0f 21.
000005A101 ..(KA's)

ANSWER: 053 (1.00)

c.

REFERENCE:

VOGTLE: VEGP-18003-C, Subprocedure C, page 16 of 21
000005A102 ..(KA's)

ANSWER: 054 (1.00)

a.

REFERENCE:

VOGTLE: VEGP-18003-C, Immediate actions, page 10 of 21.
000005A104 ..(KA's)

ANSWER: 055 (1.00)

d.

REFERENCE:

VOGTLE: LO-LP-17401-06-C, page 5
000005A201 ..(KA's)

ANSWER: 056 (1.00)

c.

REFERENCE:

VOGTLE: VEGP-18022-C, step 8, page 4 of 7; LO-LP-16401-09, Objective 5
000015K302 ..(KA's)

ANSWER: 057 (1.00)

b.

REFERENCE:

VOGTLE: VEGP 17008-1, Section 4, page 31 0f 36, Tech Specs. 3.4.1.1

000015K303 ..(KA's)

ANSWER: 058 (1.00)

b.

REFERENCE:

VOGTLE: LO-LP-37012-07-C, page 5; Objective 1.

000015K101 ..(KA's)

ANSWER: 059 (1.00)

d.

REFERENCE:

VOGTLE: LO-LP-37012-07-C, Objective 8.

000015K102 ..(KA's)

ANSWER: 060 (1.00)

d.

REFERENCE:

VOGTLE: Text, Chapter 12a, page 12a-30; VEGP-18038-1, Attachment G.
000068A101 ..(KA's)

ANSWER: 061 (1.00)

c.

REFERENCE:

VOGTLE: Text, Chapter 13d, page 13d-17, VEGP-18038-1, Attachment A.
000068A102 ..(KA's)

ANSWER: 062 (1.00)

b.

REFERENCE:

VOGTLE: LO-LP-60327-01-C, Objective 1.
000068A103 ..(KA's)

ANSWER: 063 (1.00)

c.

REFERENCE:

VOGTLE: VEGP LO-LP-60328-02-C, Objective 2, p. 4.
000068K313 ..(KA's)

ANSWER: 064 (1.00)

c.

REFERENCE:

VOGTLE: LO-LP-28102-05, Objective 4q
000054K304 ..(KA's)

ANSWER: 065 (1.00)

b.

REFERENCE:

VOGTLE: LO-LP-37011-06-C, Objective 8
000054K303 ..(KA's)

ANSWER: 066 (1.00)

b.

REFERENCE:

VOGTLE: LO-LP-18201-09-C, Objective 4; LO-LP-18501-06-C, Objective 12

000054K302 ..(KA's)

ANSWER: 067 (1.00)

d.

REFERENCE:

VOGTLE: LO-LP-20101-13-C, Objective 8

000054A203 ..(KA's)

ANSWER: 068 (1.00)

d.

REFERENCE:

VOGTLE: VEGP-18002-C, Step A1; LO-LP-60302-02, Objective 2.

000032K302 ..(KA's)

ANSWER: 069 (1.00)

a.

REFERENCE:

VOGTLE: LO-LP-60302-02, Objective 5.
000032K301 ..(KA's)

ANSWER: 070 (1.00)

b.

REFERENCE:

VOGTLE: LO-LP-60302-02, Objective 1.
000032A204 ..(KA's)

ANSWER: 071 (1.00)

c.

REFERENCE:

VOGTLE: LO-LP-46101-08, Objective 11
000060K303 ..(KA's)

ANSWER: 072 (1.00)

d.

REFERENCE:

VOGTLE: LO-LP-32101, Objective 12
000060A205 ..(KA's)

ANSWER: 073 (1.00)

a.

REFERENCE:

VOGTLE: Text, Chapter 11a, page 11a-31; LO-LP-32101, Objective 11
000060G005 ..(KA's)

ANSWER: 074 (1.00)

b.

REFERENCE:

VOGTLE: LO-LP-37012-07, Objective 6, page 7
000056K302 ..(KA's)

ANSWER: 075 (1.00)

d.

REFERENCE:

VOGTLE: LO-LP-60301-04, Objective 12; VEGP-18001-C, Section D, page 7.

000028K305 ..(KA's)

ANSWER: 076 (1.00)

b.

REFERENCE:

VOGTLE: LO-LP-09701-04-C, page 13; Objective 6 & 8
004000K106 ..(KA's)

ANSWER: 077 (1.00)

b.

REFERENCE:

VOGT E: LO-LP-09001-04, Objective 4d.
004020K612 ..(KA's)

ANSWER: 078 (1.00)

c.

REFERENCE:

VOGTLE: LO-LP-13101, Page 13, Objective 6
004000K115 ..(KA's)

ANSWER: 079 (1.00)

a.

REFERENCE:

VOGTLE: LO-LP-28201-09-C, page 9, Objective 4.
013000K407 ..(KA's)

ANSWER: 080 (1.00)

c.

REFERENCE:

VOGTLE: LO-LP-28103-09-C, Page 11, Objective 3a
013000K413 ..(KA's)

ANSWER: 081 (1.00)

d.

REFERENCE:

VOGTLE: LO-LP-16401-09, page 9, Objective 3.
003000K103 ..(KA's)

ANSWER: 082 (1.00)

a.

REFERENCE:

VOGTLE: LO-LP-16401-09, page 9, Objective 4
003000K407 ..(KA's)

ANSWER: 083 (1.00)

b.

REFERENCE:

VOGTLE: LO-LP-25102-08-C, page 10; Objective 10d.
033000K303 ..(KA's)

ANSWER: 084 (1.00)

d.

REFERENCE:

VOGTLE: LO-LP-02110-09-C, page 12; Objective 12
079000A301 ..(KA's)

ANSWER: 085 (1.00)

d.

REFERENCE:

VOGTLE: LO-LP-16302-04-C, Objective 6.
011000K302 ..(KA's)

ANSWER: 086 (1.00)

a.

REFERENCE:

VOGTLE: LO-LP-16302-04-C, page 14; Objective 3.
011000K401 ..(KA's)

ANSWER: 087 (1.00)

a.

REFERENCE:

VOGTLE: Text, Chapter 1c, page 1c-13, LO-LP-16302-04-C, Objective 2.
011000A104 ..(KA's)

ANSWER: 088 (1.00)

c.

REFERENCE:

VOGTLE: LO-LP-60301-04, page 17; Objective 12.
011000A210 ..(KA's)

ANSWER: 089 (1.00)

d.

REFERENCE:

VOGTLE: LO-LP-16301-09-C, page 23; Objective 15.
007000A203 ..(KA's)

ANSWER: 090 (1.00)

b.

REFERENCE:

VOGTLE: Text Chapter 1c, page 1c-6; LO-LP-16301-09-C, Objective 3.
007000A203 ..(KA's)

ANSWER: 091 (1.00)

b.

REFERENCE:

VOGTLE: LO-LP-28102-05, pages 23 and 24; Objective 2.
045000K411 ..(KA's)

ANSWER: 092 (1.00)

d.

REFERENCE:

VOGTLE: LO-LP-12101-20, Objective 19a, p. 46.
005000K410 ..(KA's)

ANSWER: 093 (1.00)

a.

REFERENCE:

VOGTLE: VEGP-18004-C, Reactor Coolant System Leakage, Step A1.
000009K?06 ..(KA's)

ANSWER: 094 (1.00)

d.

REFERENCE:

VOGTLE: LO-LP-16302-04-C, Objective 3.
000009K312 ..(KA's)

ANSWER: 095 (1.00)

d.

REFERENCE:

VOGTLE: VEGP 13003-1, Reactor Coolant Pump Operation, page 7; LO-LP-09501-04, Objective 2.
000009K313 ..(KA's)

ANSWER: 096 (1.00)

d.

REFERENCE:

VOGTLE: LP-LO-37111-C, Objective 5. VEGP-19000-C, Step 25.
000009K321 ..(KA's)

ANSWER: 097 (1.00)

a.

REFERENCE:

VOGTLE: LO-LP-37311-07-C, Objective 5
000038A202 ..(KA's)

ANSWER: 098 (1.00)

d.

REFERENCE:

VOGTLE: LO-LP-37311-07-C, Objective 10, page 12
000038K308 ..(KA's)

ANSWER: 099 (1.00)

d.

REFERENCE:

VOGTLE: LO-LP-37311-07-C, Objective 9, Page 15.
000038K306 ..(KA's)

ANSWER: 100 (1.00)

d.

REFERENCE:

VOGTLE: LO-LP-20101-C, Objective 4.
000056A207 ..(KA's)

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

A N S W E R S H E E T

Multiple Choice (Circle or X your choice)

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

001 a b c d _____

002 a b c d _____

003 a b c d _____

004 a b c d _____

005 match with selected number in the blank

a _____

b _____

c _____

d _____

006 a b c d _____

007 a b c d _____

008 match with selected number in the blank

a _____

b _____

009 a b c d _____

010 a b c d _____

011 a b c d _____

012 *** QUESTION DELETED ***

013 a b c d _____

014 fill response in the blank

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.

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	_____

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.

041	a	b	c	d	_____
042	a	b	c	d	_____
043	a	b	c	d	_____
044	a	b	c	d	_____
045	a	b	c	d	_____
046	a	b	c	d	_____
047	a	b	c	d	_____
048	a	b	c	d	_____
049	a	b	c	d	_____
050	a	b	c	d	_____
051	a	b	c	d	_____
052	a	b	c	d	_____
053	a	b	c	d	_____
054	a	b	c	d	_____
055	a	b	c	d	_____
056	a	b	c	d	_____
057	a	b	c	d	_____
058	a	b	c	d	_____
059	a	b	c	d	_____
060	a	b	c	d	_____
061	a	b	c	d	_____
062	a	b	c	d	_____
063	a	b	c	d	_____
064	a	b	c	d	_____
065	a	b	c	d	_____

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.

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

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.

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

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

A N S W E R K

001	d	
002	a	
003	b	
004	b	
005	a	4
	b	1
	c	2
	d	3
006	c	
007	d	
008	a	3
	b	2
009	a	
010	a	
011	a	
012	*** QUESTION DELETED ***	
013	d	
014	a	2
	b	2
	c	125
	d	50
015	b	
016	a	
017	a	
018	c	
019	a	
020	b	

A N S W E R K E Y

021	c
022	b
023	d
024	a
025	c
026	b
027	c
028	d
029	c
030	a
031	d
032	b
033	b
034	d
035	c
036	a
037	a
038	d
039	a
040	d
041	a
042	d
043	d
044	a
045	d
046	c
047	d
048	c

A N S W E R K E Y

049	a
050	a
051	b
052	b
053	c
054	a
055	d
056	c
057	b
058	b
059	d
060	d
061	c
062	b
063	c
064	c
065	b
066	b
067	d
068	d
069	a
070	b
071	c
072	d
073	a
074	b
075	d

A N S W E R K E Y

076	b
077	b
078	c
079	a
080	c
081	d
082	a
083	b
084	d
085	d
086	a
087	a
088	c
089	d
090	b
091	b
092	d
093	a
094	d
095	d
096	d
097	a
098	d
099	d
100	d

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

50-424/OL-90-04

Enclosure 2

U. S. NUCLEAR REGULATORY COMMISSION
SENIOR REACTOR OPERATOR LICENSE EXAMINATION
REGION 2

FACILITY: Vogtle 1

REACTOR TYPE: PWR-WEC4

DATE ADMINISTERED: 90/12/10

CANDIDATE: MASTER COPY

INSTRUCTIONS TO CANDIDATE:

Points for each question are indicated in parentheses after the question. To pass this examination, you must achieve an overall grade of at least 80%. Examination papers will be picked up four and one half (4 1/2) hours after the examination starts.

NUMBER QUESTIONS	TOTAL POINTS	CANDIDATE'S POINTS	CANDIDATE'S OVERALL GRADE (%)
100	100.00		

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

Candidate's Signature

NRC RULES AND GUIDELINES FOR LICENSE EXAMINATIONS

During the administration of this examination the following rules apply:

1. Cheating on the examination means an automatic denial of your application and could result in more severe penalties.

2. After the examination has been completed, you must sign the statement on the cover sheet indicating that the work is your own and you have not received or given assistance in completing the examination. This must be done after you complete the examination.

3. Restroom trips are to be limited and only one candidate 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.

6. Fill in the date on the cover sheet of the examination (if necessary).

7. You may write your answers on the examination question page or on a separate sheet of paper. USE ONLY THE PAPER PROVIDED AND DO NOT WRITE ON THE BACK SIDE OF THE PAGE.

8. If you write your answers on the examination question page and you need more space to answer a specific question, use a separate sheet of the paper provided and insert it directly after the specific question. DO NOT WRITE ON THE BACK SIDE OF THE EXAMINATION QUESTION PAGE.

9. Print your name in the upper right-hand corner of the first page of answer sheets whether you use the examination question pages or separate sheets of paper. Initial each of the following answer pages.

10. 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.

11. If you are using separate sheets, number each answer and skip at least 3 lines between answers to allow space for grading.

12. Write "Last Page" on the last answer sheet.

13. 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.

14. The point value for each question is indicated in parentheses after the question. The amount of blank space on an examination question page is NOT an indication of the depth of answer required.

15. Show all calculations, methods, or assumptions used to obtain an answer.

16. Partial credit may be given. Therefore, ANSWER ALL PARTS OF THE QUESTION AND DO NOT LEAVE ANY ANSWER BLANK. NOTE: partial credit will NOT be given on multiple choice questions.

17. 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.

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

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

20. To pass the examination, you must achieve an overall grade of 80% or greater.

21. There is a time limit of (4 1/2) hours for completion of the examination. (or some other time if less than the full examination is taken.)

22. When you are done and have turned in your examination, leave the examination area as defined by the examiner. If you are found in this area while the examination is still in progress, your license may be denied or revoked.

QUESTION: 001 (1.00)

WHICH one of the following specifies when an independent verification is NOT required of a system and/or component configuration following an alignment change or alteration of status in accordance with VEGP 00308-C, "Independent Verification Policy"?

a. When releasing active systems and equipment for maintenance, surveillance testing or calibration and subsequent return-to-service.

b. When performing surveillances.

c. Following an outage when performing system alignments prior to entering the mode where the equipment is required.

d. When verification of system and/or component configuration requires containment entry if containment integrity is established.

QUESTION: 002 (1.00)

The overhaul of a unit diesel generator requires coordination between many plant departments and is viewed as a complex evolution by plant senior management. In accordance with VEGP 10000-C, Conduct of Operations, WHICH one of the following is NOT required to be reviewed before beginning this "complex" evolution?

a. A review of the equipment needed to perform the evolution.

b. A review of the appropriate sections of the procedure by key parties.

c. A review of limitations and hold points.

d. A review of emergency action to be taken in contingencies.

QUESTION: 003 (1.00)

Given the following exposure history data for an individual:

Sex:	Male	Quarterly exposure:	50 mrem
Age:	22 years	Annual exposure:	4400 mrem
Remarks:	Form 4 unavailable	Lifetime exposure:	19400 mrem

WHICH one of the following specifies the maximum additional whole body exposure this individual is allowed in the current quarter according to VEGP administrative limits? ASSUME margin extensions are not possible.

a. The individual can receive an additional 950 mrem of exposure.

b. The individual can receive an additional 100 mrem of exposure.

c. The individual can receive an additional 50 mrem of exposure.

d. The individual can receive no additional exposure.

QUESTION: 004 (1.00)

WHICH one of the following describes a situation in which the use of a Caution Tag is appropriate?

a. Personnel protection while working on the seals of CVCS positive displacement pump.

b. RHR system protection during a hydrostatic test of the CVCS system.

c. Electrical shock protection for persons working on the CVCS pump breaker.

d. Radiation release protection from the charging system that is opened for maintenance.

QUESTION: 005 (1.00)

MATCH the "Type Of Tag" in Column B to the "Condition/Circumstance" where it is used in Column A. NOTE: Each response in Column B may be used once, more than once, or not at all and only ONE answer may occupy an answer space. (0.25 each)

	COLUMN A Condition/Circumstance	COLUMN B Type of Tag
_____	a. It is desired to run the CCPs to verify that corrective maintenance was properly performed following extensive overhaul.	1. Hold Tag
_____	b. A nitrogen valve must be closed to prevent personnel hazard in a confined space.	2. Jumper and Lifted Wire Tag
_____	c. Used to identify a temporary connection across contacts on a relay during maintenance on a safety system.	3. Caution Tag
_____	d. Addtional guidance is needed to assist the operator with the normal operation of a component.	4. Functional Test Tag

QUESTION: 006 (1.00)

WHICH one of the following specifies the limit for oxygen below which a confined space is classified as OXYGEN DEFICIENT?

a. 21.5%

b. 20.5%

c. 19.5%

d. 18.5%

QUESTION: 007 (1.00)

A reactor trip has occurred on Unit 1. WHICH one of the following actions is NOT required to be reviewed prior to restart of the reactor in accordance with VEGP 10006-C, Reactor Trip Review?

a. Abnormal indications or degraded equipment.

b. Events occurring out of the normal anticipated sequence.

c. Unusual chemistry results or radiation readings.

d. Previous reactor trips caused by similar events.

QUESTION: 008 (1.00)

Referring to the attached figure for the Reactor Core Safety Limits, MATCH the labeled 2250 psia curve segments in Column A with their bases in Column B. NOTE: Each response in Column B may be used once, more than once, or not at all and only ONE answer may occupy one answer space. (0.50 each)

COLUMN A Reactor Core Safety Limits		COLUMN B Bases
_____	a. - Segment I	1. Prevents exceeding 15% quality of coolant at core exit.
_____	b. - Segment II	2. Prevents exceeding DNBR less than 1.3 anywhere in core, from W-3 correlation.
		3. Prevents T-hot from reaching saturation.
		4. Prevents exceeding fuel centerline temperature of 2200 degrees F.

QUESTION: 009 (1.00)

A system lineup needs to be completed in a HIGH RADIATION AREA and has an expected dose commitment of 100 mrem. Only Health Physics Superintendent authorization is available. WHICH one of the following operators may perform this job without exceeding the facility administrative whole body exposure limits?

a.	Sex: Female Age: 18 Remarks: Form 4 on file	Quarterly Exposure: Annual Exposure: Lifetime Exposure:	1000 mrem 1500 mrem 1500 mrem
b.	Sex: Female Age: 24 Remarks: 4 months pregnant Form 4 on file	Quarterly Exposure: Annual Exposure: Lifetime Exposure:	250 mrem 470 mrem 1900 mrem
c.	Sex: Male Age: 20 Remarks: Form 4 unavailable	Quarterly Exposure: Annual Exposure: Lifetime Exposure:	600 mrem 970 mrem Unknown
d.	Sex: Male Age: 27 Remarks: Form 4 unavailable	Quarterly Exposure: Annual Exposure: Lifetime Exposure:	1000 mrem 950 mrem 28700 mrem

QUESTION: 010 (1.00)

WHICH one of the following is a system design feature provided to prevent a total loss of the fire main during a fire main pipe break?

a. Post indicator valves to provide sectional isolation.

b. Fire water storage tanks to provide an alternate water source.

c. Fire hydrants are supplied by individual headers.

d. Standby jockey pump starts on decreasing pressure.

QUESTION: 011 (1.00)

Given the following information:

AXIAL FLUX DIFFERENCE (AFD) DATA

Current Plant Status	Date	Time Outside Target Band
Reactor Power: 95% of RTP	11/28/90	1400 - 1415
Time: 0630	11/29/90	0730 - 0745
Date: 11/30/90	11/29/90	1435 - 1500
	11/29/90	2000 - 2015

Using the attached plot of the AFD vs Rated Thermal Power (RTP), WHICH one of the following describes the action needed to be taken by the operator?

a. Restore the indicated AFD to within the target band limits within 15 minutes.

b. Increase THERMAL POWER to 100% of RTP.

c. Reduce THERMAL POWER to less than 50% of RTP within 30 minutes.

d. Reduce Power Range Neutron Flux - HIGH setpoints to less than 55% of RTP within four hours.

QUESTION: 012 (1.00)

WHICH one of the following on-shift personnel should NOT be designated as a Fire Team member?

a. TO

b. CBO

c. RWO

d. OSOS

QUESTION: 013 (1.00)

While in MODE 6 (refueling) and with the reactor closure head in place, WHICH one of the following components does NOT have to be operable to provide Cold Overpressure Protection per Technical Specifications?

a. Two power-operated relief valves (PORVs) with lift settings which vary with RCS temperature and do not exceed the established limits.

b. Two residual heat removal (RHR) suction relief valves, each with a setpoint of 450 psig +/- 3%.

c. The RCS depressurized with an RCS vent capable of relieving at least 670 gpm water flow at 470 psig.

d. Two pressurizer safety valves with lift settings equal to 2485 psig +/- 1%.

QUESTION: 014 (1.00)

FILL IN THE BLANK

There are several important precautions and limitations that must be observed while taking the unit from Hot Shutdown (MODE 4) to Hot Standby (MODE 3).

FILL IN the missing information for EACH sentence listed below. (0.25 each)

a. If the count rate on either Source Range channel increases unexpectedly by a factor of _____ or more during any operation, the operation must be suspended immediately until satisfactory evaluation of the situation has been made.

b. If the Reactor Trip Breakers are closed and the RCS temperature is to be changed more than 50 degrees F, all rods should be withdrawn at least _____ steps. This is to prevent thermal lock-up.

c. Spray flow into the Pressurizer should not be initiated if the temperature difference between the Pressurizer steam space and the spray fluid exceeds _____ degrees F.

d. The boron concentration in the Pressurizer should not be different from the RCS by more than _____ ppm.

QUESTION: 015 (1.00)

With the Rod Control System in AUTOMATIC, WHICH one of the following will cause the control rods to step out?

a. Loop 1 hot leg temperature fails high.

b. Tref rod control input fails high.

c. Loop 3 cold leg temperature fails high.

d. Power range NI channel N42 fails high.

QUESTION: 016 (1.00)

With rod control in AUTOMATIC, WHICH one of the following conditions will cause the steam generator to stabilize at a higher pressure?

a. Generator output power is decreased.

b. Generator output power is increased.

c. Gain on all power range channels is increased.

d. Turbine first stage pressure decreases.

QUESTION: 017 (1.00)

WHICH one of the following lists ALL of the sources/locations for obtaining in-core thermocouple readings?

a. PROTEUS, RPU and PSMS

b. PROTEUS, PSMS and Reference Junction Boxes

c. PROTEUS, RPU and Reference Junction Boxes

d. RPU, PSMS and Reference Junction Boxes

QUESTION: 018 (1.00)

WHICH one of the following represents the response of the affected temperature indication if a short circuit failure occurrs in the cable run of an in-core thermocouple?

a. Indicates a minimum reading.

b. Indicates a maximum reading.

c. Indicates ambient temperature at the short location.

d. Indicates slightly higher than actual reading.

QUESTION 019 (1.00)

Given that the highest in-core thermocouples indicate the following temperatures:

- 1210 F
- 1212 F
- 1212 F
- 1213 F
- 1214 F
- 1213 F

WHICH one of the following conditions is indicated?

a. Core damage is imminent.

b. Reactor power is at 100%.

c. A control rod is stuck in the vicinity of the thermocouples.

d. Core temperature is below DNB.

QUESTION: 020 (1.00)

WHICH one of the following is directly cooled by Nuclear Service Cooling Water (NSCW)?

a. Control Rod Drive Mechanism Cooling.

b. Auxiliary Containment Cooling.

c. Containment Purge System.

d. Reactor Support Cooling.

QUESTION: 021 (1.00)

A Loss of Coolant Accident (LOCA) has occurred and containment pressure is 15 psig. WHICH one of the following describes how the containment fan cooling units realign in this situation?

a. The SI sequencer will start all containment cooling fans in Hi speed after a 30.5 second time delay and the NSCW supply valves to the coolers will get an open signal.

b. The SI sequencer will start four containment cooling fans in Hi speed after a 30.5 second time delay and another four fans in Hi speed 20 seconds later. The NSCW supply valves to the coolers will get a close signal.

c. The SI sequencer will start all containment cooling fans in Lo speed after a 30.5 second time delay and the NSCW supply valves to the coolers will get an open signal.

d. The SI sequencer will trip all operating containment cooling fans and the NSCW supply valves to the coolers will get a close signal.

QUESTION: 022 (1.00)

WHICH one of the following describes the effect on the containment fan cooling units during a Containment Isolation Phase A (CIA)?

a. The NSCW supply valves to the coolers will auto close.

b. The NSCW supply valves to the coolers receive no signal in this situation.

c. The four operating containment cooling fans will shift from Hi speed to Lo speed.

d. The four operating containment cooling fans will trip.

QUESTION: 023 (1.00)

Steam generator 1 narrow range (NR) level channel has failed high. WHICH one of the following DIRECTLY occurs if steam generator 2 feedwater regulating valve (FRV) now fails open and NR level increases to 78%?

a. A main turbine run-back.

b. A partial feedwater isolation.

c. A main generator trip.

d. A full feedwater isolation.

QUESTION: 024 (1.00)

WHICH one of the following alarms is likely to occur with a feedwater isolation (FWI) signal?

a. "ATSI MFPT A (B) HI VIB/ECC"

b. "MFPT A (B) SUCTION LO PRESS"

c. "MFPT A (B) BRG OIL LO PRESS"

d. "MFPT A (B) PMP BRG OIL LO PRESS"

QUESTION: 025 (1.00)

After a MANUAL reactor trip, WHICH one of the following will generate a feedwater isolation (FWI) signal?

a. Opening of the reactor trip breakers.

b. Shutting of the main turbine trip valves.

c. Tavg decreasing below 564 F in two loops.

d. At least one steam generator level reaching 18.5%.

QUESTION: 026 (1.00)

WHICH one of the following describes the effect a loss of power on the 480V MCC 1ABF bus will have on the Auxiliary Feedwater System?

a. Loss of power to the train A AFW Discharge Flow Control valves.

b. Loss of power to the train A AFW pump alternate suction valve.

c. Loss of power to the train A motor driven pumps.

d. Loss of power on the 480V MCC 1ABF bus has no effect.

QUESTION: 027 (1.00)

WHICH one of the following lists the minimum pump requirements for the AFW system to remove 100% of the design RCS decay heat load?

a. Two motor driven pumps and the turbine driven pump.

b. One motor driven pump and the turbine driven pump.

c. One motor driven pump.

d. Two motor driven pumps.

QUESTION: 028 (1.00)

With Unit 1 at 100% power, a periodic surveillance is being conducted from the control room on the "A" train Auxiliary Feedwater (AFW) pump. The pump is running with the miniflow recirc valve (1-HV-5155) open, and the discharge flow control valves (1-HV-5137 and 1-HV-5139) shut.

WHICH one of the following describes how the system will respond with NO operator action if two out of four (2/4) low level alarms are received on steam generator 1?

a. There will be no motor driven AFW pump start signal generated because a second SG with 2/4 low level alarms is required, and the lineup will not change.

b. A motor driven AFW pump start signal will be generated, but the lineup will not change.

c. A motor driven AFW pump start signal will be generated, the discharge flow control valves will automatically go full open, and the miniflow recirc valve will remain open.

d. A motor driven AFW pump start signal will be generated, the discharge flow control valves will automatically go full open, and the miniflow recirc valve will go shut.

QUESTION: 029 (1.00)

While operating at 100% power, WHICH one of the following conditions will initiate an ESFAS signal?

a. Pressurizer level at 11%.

b. Steam Generator pressure at 650 psig.

c. RCS pressure at 1840 psig.

d. Containment pressure at 15.1 psia.

QUESTION: 030 (1.00)

WHICH one of the following specifies the MINIMUM boron concentration in the spent fuel pool that will ensure a reactivity condition of less than 0.95 Keff?

a. 0 ppm

b. 1250 ppm

c. 2000 ppm

d. 2400 ppm

QUESTION: 031 (1.00)

WHICH one of the following is the preferred (normal) source of makeup to the spent fuel pool?

a. Chemical and Volume Control System.

b. Refueling Water Storage Tank.

c. Reactor Makeup Water Storage Tank.

d. Demineralized Water System.

QUESTION: 032 (1.00)

WHICH one of the following conditions will cause the MSIV's to close?

a. 1/3 channels on 2/4 steamlines below 585 psig.

b. 2/3 channels on 2/4 steamlines below 585 psig.

c. 2/3 channels on 1/4 steamlines - 50 psig drop within 100 sec.

d. 1/3 channels on 2/4 steamlines - 100 psig drop within 50 sec.

QUESTION: 033 (1.00)

An increase in main steam flow will cause WHICH one of the following to occur?

a. SG level shrink due to steam pressure increase.

b. SG level swell due to steam pressure decrease.

c. SG level shrink due to steam pressure decrease.

d. SG level swell due to steam pressure increase.

QUESTION: 034 (1.00)

The plant is operating at 75% power. WHICH one of the following gives the immediate effect a loss of BOTH condenser circulating water pumps will have on the Steam Dump control system?

a. Steam dumps modulate open.

b. Steam dumps fully open.

c. Steam dumps arm.

d. Steam dump arming prevented.

QUESTION: 035 (1.00)

During a reactor startup, only one of the two switches for the Source Range permissive P-6 was placed in "BLOCK" due to operator error. If power level is now increased toward the point of adding heat (POAH), WHICH one of the following gives the effect this oversight will have on plant equipment operations?

a. No effect, the switches are redundant.

b. Both Source Range detectors will be saturated.

c. Source Range high flux trip will occur.

d. One Source Range detector will be damaged.

QUESTION: 036 (00)

WHICH one of the following control interlocks is associated with the "INTERMEDIATE RANGE HI FLUX LEVEL ROD STOP" alarm?

a. C-1

b. C-2

c. C-3

d. C-4

QUESTION: 037 (1.00)

WHICH one of the following is a design feature of the reactor safeguards system that provides protection from a single instrument failure?

a. Redundancy

b. Independence

c. Diversification

d. Fail Safe

QUESTION: 038 (1.00)

WHICH one of the following gives the impact that clogging of the River Water Makeup traveling screen and wash system will have on the circulating water system?

a. An additional river water makeup pump will automatically start to provide sufficient circulating water.

b. The circulating water pump bay level control valves will automatically close to prevent over-filling the bay.

c. No effect, the circulating water system is a closed system.

d. Makeup water to compensate for cooling tower evaporation, drift and blowdown losses will be restricted.

QUESTION: 039 (1.00)

WHICH one of the following features of the Unit 1 Nuclear Service Cooling Water (NSCW) system is provided to prevent water hammer in a shutdown NSCW train when it is placed in service?

a. Installed tie line from the opposite train return header.

b. High point vacuum breakers installed in the suction headers.

c. Suction valve opening delay after pump start.

d. Sequenced opening of the cooler isolation outlet and inlet valves.

QUESTION: 040 (1.00)

The plant is operating at 90% power. Upon receipt of an "SI" ESFAS signal, WHICH one of the following occurs in the Nuclear Service Cooling Water system?

a. Three NSCW pumps per train start.

b. Valves for reactor cavity cooling open.

c. The third NSCW pump will start.

d. Two pumps per train will start.

QUESTION: 041 (1.00)

WHICH one of the following design features prevents runout of the High Head Safety Injection (HHSI) pumps?

a. Throttle valves in the hot and cold leg recirculation lines.

b. Correlation of system actuating setpoints in ECCS systems.

c. Increased design pumping capacity of the HHSI pumps.

d. Orifices in the HHSI pump discharge lines.

QUESTION: 042 (1.00)

WHICH one of the following specifies the MINIMUM accumulator boron concentration required to ensure the reactor will remain subcritical during a small-break LOCA?

a. 2300 ppm

b. 2100 ppm

c. 2000 ppm

d. 1900 ppm

QUESTION: 043 (1.00)

WHICH one of the following combinations of valves receive an actuation signal upon receipt of an SI signal?

1. CCP suction valves from RWST.
2. CCP suction valves from VCT.
3. CCP discharge valves to the RCS.
4. CCP discharge valves to the RCP seals.
5. RCP seal water heat exchanger CVCS isolation valves.
6. SI pump discharge valves.
7. Accumulator isolation valves.

a. 2, 3, 4, 6, and 7

b. 1, 2, 4, 5, and 6

c. 1, 3, 4, 5, and 7

d. 1, 2, 3, 5, and 7

QUESTION: 044 (1.00)

In WHICH one of the following plant operations is the RHR pump suction lined up to the RWST?

a. Cold leg injection.

b. Normal Cooldown.

c. Draining the refueling cavity.

d. Hot leg injection.

QUESTION: 045 (1.00)

WHICH one of the following describes the flowpath of the Intermediate Head Safety Injection (IHSI) pumps during the cold leg recirc phase of a LOCA?

a. Suction directly from RHR pump "A" discharge, IHSI "A" pump, common header, and discharge into each cold leg.

b. Suction directly from RCS cold legs, IHSI "B" pump, common header, and discharge into each cold leg.

c. Suction directly from RCS cold legs, IHSI "A" pump, common header, and discharge into each cold leg.

d. Suction directly from RHR pump "B" discharge, IHSI "B" pump, common header, and discharge into each cold leg.

QUESTION: 052 (1.00)

While recovering a dropped rod, DRPI is lost on the dropped rod. WHICH one of the following actions must be performed before further rod movement with the rod control system proceeds?

a. Trip the turbine and reactor and perform repairs.

b. Consult Reactor Engineering and Technical Specifications.

c. Dilute/Borate to restore Tavg.

d. Reduce turbine power to 75%.

QUESTION: 053 (1.00)

WHICH one of the following is electrically disconnected when recovering a misaligned control rod?

a. The movable gripper coil for the misaligned control rod.

b. The movable gripper coils for the remaining rods in the affected bank.

c. The lift coils for the remaining rods in the affected bank.

d. The lift coil for the misaligned control rod.

QUESTION: 046 (1.00)

At WHICH one of the following RCS pressures is the operator required to monitor for RHR flow during a LOCA?

a. 600 psig

b. 450 psig

c. 300 psig

d. 150 psig

QUESTION: 047 (1.00)

WHICH one of the following statements is NOT part of the design basis for the pressurizer?

a. Loading and unloading at 5%/minute with AUTOMATIC reactor control and NO reactor trip.

b. Step changes of +/- 10% with AUTOMATIC reactor control and NO reactor trip.

c. Step load reduction of 50% with AUTOMATIC reactor control and 40% steam dumps and NO reactor trip.

d. Step load reduction of 85% with no AUTOMATIC reactor control and 20% steam dumps and NO reactor trip.

QUESTION: 048 (1.00)

Given the following information:

- Loss of all AC power
- Reactor trip
- "A" and "B" emergency diesel generators are running and loaded
- 3 Control bank rods are stuck at 224 steps
- Both "A" and "B" CCP's are running

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

a. Place the blender control switch to the AUTO-after-start position.

b. Place the blender control switch to the MANUAL position.

c. Manually load BAT pumps onto the bus and open the emergency borate valve.

d. Place the blender control switch to the BORATE position.

QUESTION: 049 (1.00)

With a BAT pump control switch in the AUTO position, WHICH one of the following will automatically start the BAT pump(s)?

a. Reactor makeup control system started in manual mode.

b. Reactor makeup water pump manually started.

c. Opposite train BAT pump manually started.

d. Shutdown panel transfer switch selected to local control.

QUESTION: 050 (1.00)

The plant is operating at 100% power with all control rods at 225 steps. One BAT pump is operating and one CCP is operating. When the operator opens the emergency borate valve (HV-8104), WHICH one of the following specifies approximately how long will it take to achieve 1% shutdown?

a. Less than 90 minutes

b. About 100 minutes

c. About 110 minutes

d. Greater than 120 minutes

QUESTION: 051 (1.00)

WHICH one of the following represents the flow rate limits of the boric acid flow controller and the position of Flow Control Valve (FV-110A) at 100% controller output?

a. 0 to 40 gpm, FV-110A is closed

b. 0 to 40 gpm, FV-110A is open

c. 0 to 120 gpm, FV-110A is closed

d. 0 to 120 gpm, FV-110A is open

QUESTION: 054 (1.00)

Given the following information:

- Normal plant operations at 100% power.
- Control bank rods at 208 steps.

If the control bank rods suddenly started stepping out, WHICH one of the following gives the immediate actions of the Reactor Operator?

a. Check no turbine RUNBACK, place bank selector in MANUAL, rod control switch in HOLD, and check rod motion STOPPED.

b. Check no turbine RUNBACK, place bank selector in AUTO, rod control switch in HOLD, then TRIP the turbine.

c. Check Turbine RUNBACK, place bank selector in MANUAL, rod control switch in IN, and check rod motion INWARD.

d. Check Turbine RUNBACK, place bank selector in MANUAL, rod control switch in IN, and TRIP the reactor.

QUESTION: 055 (1.00)

WHICH one of the following represents how core exit thermocouples will respond to a stuck control rod that is greater than 18 steps out of alignment below the associated rods in that group?

a. Higher temperature in the vicinity of the affected group rods.

b. Higher temperature in the vicinity of the stuck rod.

c. Lower temperature in the vicinity of the affected group rods.

d. Lower temperature in the vicinity of the stuck rod.

QUESTION: 056 (1.00)

WHICH one of the following conditions warrant tripping the reactor if a loss of Auxiliary Component Cooling Water to the RCPs has occurred?

	Motor Bearing Temp.	Stator Winding Temp.	Pump Bearing Temp.	Seal water Inlet Temp.	Time duration of ACCW loss
a.	180 F	310 F	229 F	198 F	2 min.
b.	194 F	301 F	220 F	190 F	9 min.
c.	190 F	306 F	209 F	200 F	11 min.
d.	184 F	310 F	228 F	201 F	9 min.

QUESTION: 057 (1.00)

During plant startup with power at 45%, the Reactor Operator determines that RCP shaft vibration is 11 mils and increasing at a rate of 2 mils per hour and trips the RCP in accordance with VEGP 17008-1 alarm response procedure.

WHICH one of the following is an immediate action SUBSEQUENT to tripping the RCP?

a. Commence down power of the plant to 25% power.

b. Verify affected SG level trending to 50%.

c. Commence shutdown of the reactor plant.

d. Trip the main turbine and the reactor.

QUESTION: 058 (1.00)

WHICH one of the following is the immediate effect of a loss of all RCPs while the plant is at 100% power?

a. Breach of fuel clad in hottest channel.

b. Rapid increase in coolant temperature and pressure.

c. Increase in core exit thermocouple temperature to above 1200 degrees F.

d. Decrease of RCS subcooling to approximately 24 degrees F.

QUESTION: 059 (1.00)

WHICH one of the following explains why is it desirable to start an RCP if electrical power becomes available during a natural circulation cooldown?

a. To regain control of the plant cooldown.

b. To regain plant temperature and pressure control.

c. To mitigate the radiation release caused by lifting PORVs.

d. To permit faster cooldown and limit upper head voiding.

QUESTION: 060 (1.00)

If a failure of the steam generator Atmospheric Relief Valve (ARV) control system prevented automatic and manual operation from the control room, WHICH one of the following is an alternate method of operating the ARV?

a. Locally starting and stopping the hydraulic operator pump.

b. Local override of the ARV valve operators.

c. Local throttling of the ARV inlet isolation valve.

d. Local handpump operation of the ARV.

QUESTION: 061 (1.00)

If an event forced a reactor trip and control room evacuation which prevented the use of the MDAFW pumps, WHICH one of the following is the method for establishing feedwater flow to the steam generators?

a. Local operation of the TDAFW pump from shutdown panel A.

b. Local operation of the TDAFW pump from shutdown panel B.

c. Local operation of the TDAFW pump from shutdown panel C.

d. Local operation of the main feed pumps from shutdowm panel A.

QUESTION: 062 (1.00)

In the event of a fire that forces the evacuation of the control room, WHICH one of the following is the preferred location for control of steam generator water level?

a. Shutdown panel A.

b. Shutdown panel B.

c. Shutdown panel C.

d. No required preference.

QUESTION: 063 (1.00)

The control room is being evacuated due to a fire in the Nuclear Instrumentation racks. WHICH one of the following is NOT an immediate or subsequent operator action during a control room evacuation?

a. Trip the reactor.

b. Ensure suction is not lost to the charging pumps.

c. Trip all RCPs.

d. Prevent depressurization due to spray.

QUESTION: 064 (1.00)

In the event of a loss of main feedwater, WHICH one of the following pairs of trips or actuations provide protection against core damage?

a. Turbine trip and reactor trip

b. Safety Injection and AUTOMATIC Auxiliary Feedwater flow.

c. Reactor trip and AUTOMATIC Auxiliary Feedwater flow.

d. Reactor trip and Safety Injection.

QUESTION: 065 (1.00)

During a reactor trip event, WHICH one of the following explains why AFW is manually throttled to control feed flow to at least 570 gpm?

a. To limit plant cooldown rate to within the design parameters.

b. To minimize the impact on primary plant parameters.

c. To prevent steam generators from boiling dry.

d. To maintain feed flow at least equal to steam flow.

QUESTION: 066 (1.00)

WHICH one of the following explains why an operator should maintain feed flow equal to steam flow when controlling feed flow in manual?

a. SGFP speed is not programed to respond to effects of shrink and swell.

b. The immediate effects of shrink and swell on level are inverse to SG feed water requirements.

c. The immediate effects of shrink and swell on MFRV delta-P are inverse to SG feed water requirements.

d. MFRV position is directly proportional to steam flow and SG level.

QUESTION: 067 (1.00)

WHICH one of the following will initiate the auto-start signal for a motor driven auxiliary feed pump (MDAFP)?

a. Lo-Lo level in the SGs, 1/4 channels on 2/4 SGs.

b. SI signal from the opposite train.

c. Loss of 1/2 Main Feed pumps.

d. Loss of offsite power to the associated train.

QUESTION: 068 (1.00)

During a plant startup while operating in the source range, WHICH one of the following is an operator immediate action in response to a failure of Source Range channel N31?

a. Place Source Range channel N31 level trip switch in bypass.

b. Select the Source Range channel N32 on NR-45.

c. Suspend all operations involving reactivity changes.

d. Suspend all operations involving positive reactivity changes.

QUESTION: 069 (1.00)

While in MODE 2, WHICH one of the following gives the condition when termination of reactor startup is required if a Source Range channel has failed low?

a. When reactor power is below the P-6 setpoint.

b. When reactor power is above the P-6 setpoint.

c. Anytime; Technical Specifications require 2 operable Source Range instruments.

d. When boron dilution operations are in progress.

QUESTION: 070 (1.00)

The Intermediate Range indication comes on scale at approximately 10,000 cps on the Source Range. WHICH one of the following count rates represents when minimum Source Range to Intermediate Range overlap is reached? (Assume design minimum overlap.)

a. 11,500 cps

b. 50,000 cps

c. 150,000 cps

d. 500,000 cps

QUESTION: 071 (1.00)

WHICH one of the following statements describes the action needed/system response if RE-0014 failed low during a radioactive waste gas release.

a. RE-0013 would have to be selected for automatic control of RV-0014.

b. RV-0014 would have to be shut manually when limits are exceeded.

c. RV-0014 would have to be shut manually upon failure of RE-0014.

d. Automatic shutting of RV-0014 would terminate the release.

QUESTION: 072 (1.00)

WHICH one of the following radiation monitors is safety related?

a. Waste Gas Processing System Effluent (ARE-0014)

b. Condenser Air Ejector and Steam Packing Exhauster (RE-12839C)

c. Containment Vent Effluent (RE-2565-A)

d. Fuel Handling Building Effluent (ARE-2532-A)

QUESTION: 073 (1.00)

WHICH one of the following system responses will occur when the radiation level causing an "ALERT" alarm on 1-RE-0014 decreases to below the setpoint?

a. The ERF color display reading will appear green.

b. The ERF color display reading will appear yellow.

c. The ERF color display reading will appear magenta.

d. The ERF color display reading will flash orange.

QUESTION: 074 (1.00)

A loss of offsite power occurs with entry into VEGP 19002-C, "Natural Circulation Cooldown". Offsite power is then restored.

WHICH one of the following states when it is NOT necessary to establish normal RCP support conditions prior to restarting an RCP?

a. A RED path condition exists on SUBCRITICALITY.

b. A RED path condition exists on CORE COOLING.

c. A RED path condition exists on HEAT SINK.

d. A RED path condition exists on INVENTORY.

QUESTION: 075 (1.00)

Assume pressurizer level control selector switch is in the 459/460 position and channel 460 fails low, WHICH one of the following occurs?

a. Charging flow increases.

b. RCP seal injection flow increases.

c. Pressurizer level decreases.

d. Letdown flow stops.

QUESTION: 076 (1.00)

WHICH one of the following conditions permit exceeding the exposure limits of 10 CFR 20, "Standards for Protection Against Radiation"?

a. During outage maintenance work conditions.

b. During emergency and accident situations.

c. When authorized by the worker's foreman.

d. When authorized by the HP Superintendent.

QUESTION: 077 (1.00)

WHICH one of the following correctly describes how an independent verification of position for a manually operated throttle valve is performed?

a. Move the valve slightly in the closed direction and then return it to its required position.

b. Completely close the valve and then reopen it to the required position.

c. Inspect the last valve lineup sheet for verification signature and compare recorded valve position with the required position.

d. Compare visual observation of stem or indicator position with the required position.

QUESTION: 078 (1.00)

WHICH one of the following requirements are necessary for the manipulation of systems and components outside the control room that may indirectly affect the power level or reactivity of the reactor?

a. Operated only by qualified, licensed auxiliary operators.

b. Operated only by on shift operations department personnel.

c. Operated only by a licensed operator, except for training purposes.

d. Operated only with the knowledge and consent of a licensed operator.

QUESTION: 079 (1.00)

When the Shift Superintendent assumes the responsibilities of the Emergency Director, WHICH one of the following actions may be delegated?

a. Determining if the RCS has been breached.

b. Declaring a Site Area Emergency.

c. Terminating an emergency event.

d. Upgrading an Unusual Event to an Alert.

QUESTION: 080 (1.00)

WHICH one of the following conditions will cause a ground protection relay (device 64) to actuate on a DC bus fault?

a. An insulation failure.

b. An under-voltage condition.

c. A loss of charger output.

d. An over-voltage condition.

QUESTION: 081 (1.00)

WHICH one of the following is a hazard of shutting down battery room ventilation systems?

a. Confined space hazard to personnel.

b. Hydrogen buildup.

c. Battery overheating.

d. Battery would not gas properly.

QUESTION: 082 (1.00)

If the B train battery was fully charged, WHICH one of the following is the correct length of time that the battery is capable of supplying full load?

a. About 170 minutes

b. About 165 minutes

c. About 160 minutes

d. About 155 minutes

QUESTION: 083 (1.00)

WHICH one of the following components in the Main Steam Isolation Valve operating system controls the speed at which the valve closes when a "fast close" is initiated?

a. The exercise pilot valve.

b. Adjustable flow control valve.

c. Instrument air pressure regulator.

d. The exercise valve.

QUESTION: 084 (1.00)

WHICH one of the following is most likely to occur if a main steam Atmospheric Relief Valve (ARV) fails open at 100% power? (Assume that all control systems are operating in automatic)

a. Reactor trip.

b. No automatic functions.

c. Turbine runback.

d. Control rods step out.

QUESTION: 085 (1.00)

The reactor is shutdown with all RCPs operating. If RCS temperature is 500 degrees F, WHICH one of the following describes the effect on narrow range steam generator level indication?

a. Actual level is higher than indicated.

b. Actual level is the same as indicated level.

c. Actual level is lower than indicated level.

d. Narrow range level indication is automatically de-energized below 558 degrees F.

QUESTION: 086 (1.00)

When a reactor trip occurs as a result of a total loss of AC power, WHICH one of the following gives the immediate action steps in accordance with VEGP 19100-C (ECA-0.0), Loss of All AC Power?

a. Verify reactor and turbine trip, check RCS isolated and verify AFW flow.

b. Verify reactor and turbine trip, attempt to restore power to AC emergency buses.

c. Verify reactor and turbine trip, check RCS isolated and check AC bus status.

d. Verify reactor and turbine trip, verify AFW flow and check AC bus status .

QUESTION: 087 (1.00)

In accordance with VEGP 19100-C (ECA-0.0), Loss of All AC Power, WHICH one of the following describes how valves should be operated to preserve battery life during a loss of all AC power?

a. Shed all DC bus loads, re-energize valves only as needed.

b. Operate DC powered valves in groups.

c. Operate DC powered valves one at a time.

d. Operate DC powered valves in local-manual.

QUESTION: 088 (1.00)

If 4160VAC off-site power is lost to the 1AA02 electrical system and the diesel generator fails to tie in on the same train, WHICH one of the following describes the operator's immediate actions in accordance with VEGP 18031, Loss of Class 1E Electrical Systems?

a. Verify that the affected train diesel generator starts.

b. Verify that the affected train diesel generator starts and that loads sequence on correctly.

c. Trip the affected train diesel generator and dispatch a PEO to shut down the diesel generator if the DG fails to trip.

d. Trip the affected train diesel generator and dispatch a PEO to manually sequence on loads as directed by the RO.

QUESTION: 089 (1.00)

A reactor trip and SI have occurred. Two minutes later a loss of all AC power occurs requiring entry into VEGP 19100 (ECA-0.0), Loss of All AC Power. Four minutes later offsite AC is restored. WHICH one of the following describes the effect of this sequence of events on operation of the safeguards sequencer?

a. The sequencer is reset when AC power is restored; SI load sequencing restarts.

b. Restoration of AC power has no effect on the sequencer; SI load sequencing continues.

c. The sequencer is reset when AC power is restored; SI loads will have to be manually started.

d. Restoration of AC power has no effect on the sequencer; SI loads will have to be manually started.

QUESTION: 090 (1.00)

WHICH one of the following buildings is NOT served by the fire protection siesmic dry standpipe system?

a. Containment Building

b. Fuel Handling Building

c. Auxiliary Feed Pump House

d. Diesel Generator Building

QUESTION: 091 (1.00)

WHICH one of the following describes why the control room ventilation system is maintained at a slight positive pressure during normal operation?

a. To permit the control room HVAC system to shift to the emergency filtration mode.

b. To prevent smoke from entering the control room via the control room HVAC system.

c. To ensure 100% fresh air is maintained in the control room by the control room HVAC system.

d. To prevent the infiltration of unfiltered air into the control room.

QUESTION: 092 (1.00)

WHICH one of the following is correct concerning normal operation of Halon 1301 fire protection systems?

a. Two detector alarms in the area of coverage are required to activate a Halon system.

b. Halon injected into a space will be carried to other spaces through the plant ventilation system.

c. Halon system activation can be detected by observing the white color of the released Halon gas.

d. Areas covered by Halon systems include the plant computer room, the communications room, the Technical Support Center, and the upper and lower cable spreading rooms.

QUESTION: 093 (1.00)

WHICH one of the following is the correct sequence of fire pump start when a fire causes the Fire Protection System to automatically function?

a. Standby jockey pump auto-starts at 115 psig, diesel-driven fire pumps auto-start at 110 psig and motor-driven fire pumps auto-start at 95 and 85 psig.

b. One jockey pump running, motor-driven fire pump auto-starts at 110 psig and diesel-driven fire pumps auto-start at 95 and 85 psig.

c. One jockey pump running, diesel-driven fire pump auto-starts at 110 psig and motor driven-fire pumps auto-start at 95 and 85 psig.

d. Standby jockey pump auto-starts at 115 psig, motor-driven fire pumps auto-start at 110 psig and diesel-driven fire pumps auto-start at 95 and 85 psig.

QUESTION: 094 (1.00)

Several steps contained in the procedure VEGP 19000-C (E-0), Reactor Trip or Safety Injection direct the operator to check a parameter to be "stable". WHICH one of the following is the definition of "STABLE"

a. Within the normal control band and parameter variation less than 1% for a specified period of time.

b. Within the normal control band or if outside the normal control band rapidly trending to the control band.

c. Within the normal control band or if outside the normal control band responding in a controlled manner.

d. Within the normal control band and parameter variation less than 5% for a specified period of time.

QUESTION: 095 (1.00)

WHICH one of the following indications should be observed on the "COMPARATOR AND RATE" drawer of the excore NIS for an Intermediate Range channel 4 minutes after a reactor trip?

a. 10-5 amps neutron level.

b. 10-6 amps neutron level.

c. 0 decades per minute.

d. -0.3 decades per minute.

QUESTION: 096 (1.00)

WHICH one of the following actions is the correct immediate action to ensure reactor shutdown when a failure of the reactor protection system to initiate a reactor trip occurs?

a. Manually insert control rods.

b. Shut main steam isolation valves.

c. Verify SUR is zero.

d. Check power level in the source range.

QUESTION: 097 (1.00)

Given the following information:

- Reactor trip
- Turbine trip
- Emergency AC buses energized
- RCS pressure = 1214 psig and decreasing
- Pressurizer level = 19% and decreasing
- RCS temperature = 436 degrees F and stable
- SI initiated and both CCP's and SI pumps are running
- AFW flow = 585 gpm

WHICH one of the following actions should the operator take given the above conditions and indications? (Assume VEGP 190000-C (E-0), Reactor Trip or Safety Injection, has been performed through step 16.)

a. Verify ECCS flow.

b. Shut MSIVs.

c. Trip RCPs.

d. Shut Pressurizer spray valves.

QUESTION: 098 (1.00)

WHICH one of the following is indicated if alarm annunciator "PRZR RELIEF DISCH HI TEMP" is actuated?

a. A code safety relief valve is open or leaking.

b. The PRT tank rupture disc has ruptured.

c. A relief block valve is open or leaking.

d. A containment cooling system failure.

QUESTION: 099 (1.00)

Given the following information:

- Pressurizer backup heaters indicate energized.
- RCS pressure = 2105 psig and decreasing.
- Pressurizer level = 60%
- Reactor power = 100%
- Tavg = 588 degrees F

WHICH one of the following has occurred to cause the pressurizer ~~level~~ Pressure control system to respond as indicated by the parameters given?

a. The "PRZR CONTROL HI LEVEL DEV AND HEATER ON" annunciator has actuated.

b. The "PRZR PROPORTIONAL HTR TROUBLE" annunciator has actuated.

c. The pressurizer proportional spray valve (PCV-455C) has failed open.

d. The bistable controlling the pressurizer back-up heaters has failed.

QUESTION: 100 (1.00)

When the Emergency Diesel Generator is operating in parallel with the grid, WHICH one of the following describes how real load (MWe) is increased on the diesel generator?

a. DG Voltage is increased.

b. DG Speed droop is increased.

c. DG Speed is increased.

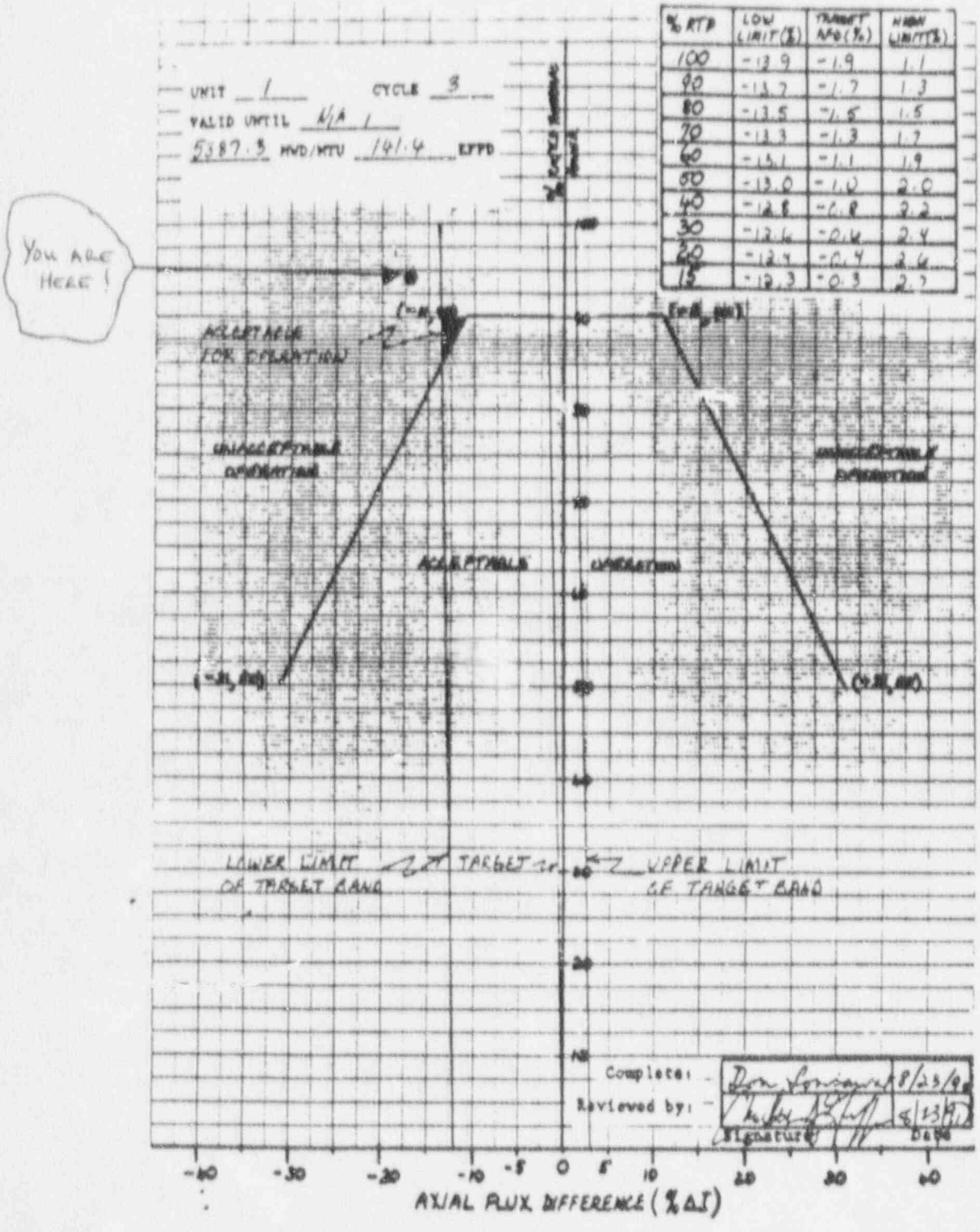
d. Grid frequency is increased.

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

Approval	Vogtle Electric Generating Plant NUCLEAR OPERATIONS	Procedure No. PTDB-1 TAB 6.0
Date	Unit 1	Revision No. 33
	Georgia Power	Page No. 1 of 1

TAB 6.0
AFD TARGET BAND
UNIT 1 CYCLE 3

AXIAL FLUX DIFFERENCE LIMITS AS A FUNCTION OF RATED THERMAL POWER



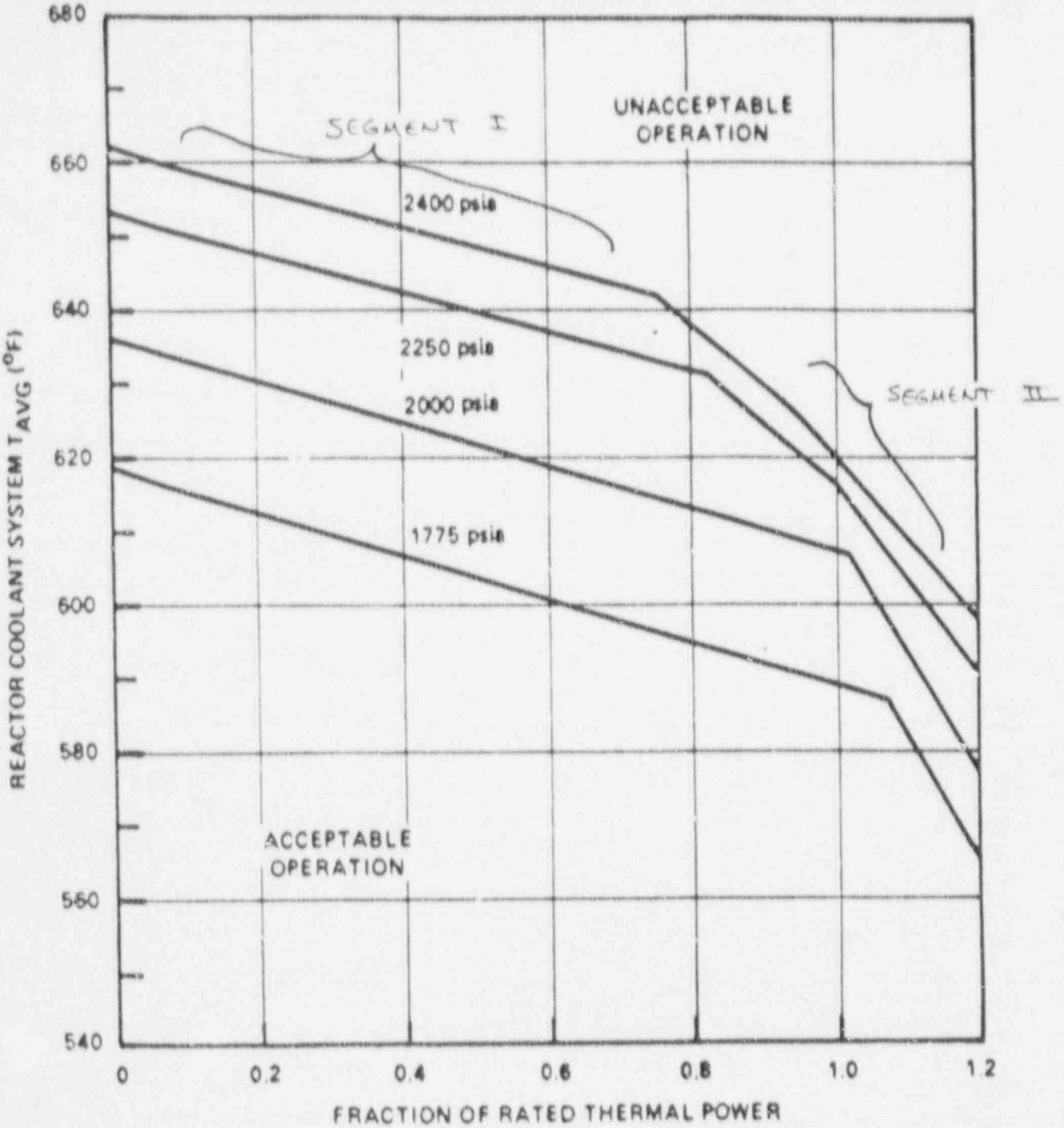


FIGURE 2.1-1

REACTOR CORE SAFETY LIMIT

ANSWER: 001 (1.00)

d.

REFERENCE:

VOGTLE: VEGP 00308-C, "Independent Verification Policy"
194001K101 ..(KA's)

ANSWER: 002 (1.00)

a.

REFERENCE:

VOGTLE: VEGP 10008-C, Conduct of Operations, Section 3.5, Shift Relief and Evolution Briefings.
194001A110 ..(KA's)

ANSWER: 003 (1.00)

b.

REFERENCE:

VOGTLE: VEGP 00920-C, Section 4
194001K104 ..(KA's)

ANSWER: 004 (1.00)

b.

REFERENCE:

VOGTLE: 63304-10-C, Objective 13.

194001K106 ..(KA's)

ANSWER: 005 (1.00)

a. 4

b. 1

c. 2

d. 3

REFERENCE:

VOGTLE: VEGP 00306-C, Temporary Jumper and Lifted Wire Control
VEGP 00304-C, Equipment Clearance and Tagging

194001K102 ..(KA's)

ANSWER: 006 (1.00)

c.

REFERENCE:

VOGTLE: VEGP 00258-C, Safe Work Procedures for Closed Vessels, Confined Spaces, Wet Locations and systems.

194001K113 ..(KA's)

ANSWER: 007 (1.00)

d.

REFERENCE:

VOGTLE: VEGP 10006-C, Reactor Trip Review.

194001A113 ..(KA's)

ANSWER: 008 (1.00)

(0.50 points each)

a. 3

b. 2

REFERENCE:

VOGTLE: VEGP LO-LP-34510-01, Objective 7, p. 31.
Technical Specifications 2.1.1, p. 2-1 & 2-2; B-2.1.1, p. B-2-1.

194001K107 ..(KA's)

ANSWER: 009 (1.00)

a.

REFERENCE:

VOGTLE: VEGP 00920-C, Section 4

194001K103 ..(KA's)

ANSWER: 010 (1.00)

a.

REFERENCE:

VOGTLE: LO-LP-43101-C, Objective 4.e

194001K116 ..(KA's)

ANSWER: 011 (1.00)

a.

REFERENCE:

VOGTLE: VEGP Technical Specifications, Power Distribution Limits, p. 3/4 2-1.

194001K108 ..(KA's)

ANSWER: 012 (1.00)

d.

REFERENCE:

VOGTLE: VEGP 10003-C, Manning the Shift

194001K116 ..(KA's)

ANSWER: 013 (1.00)

d.

REFERENCE:

VOGTLE: VEGP Technical Specification 3.4.9.3, Cold Overpressure Protection Systems

194001A115 ..(KA's)

ANSWER: 014 (1.00)

a. two
b. 2
c. 125
d. 50

REFERENCE:

VOGTLE: VEGP 12002-C, Unit Heatup to Normal Operating Temperature and Pressure, p. 1

001000A102 ..(KA's)

ANSWER: 015 (1.00)

b.

REFERENCE:

VOGTLE: Text Chapter 6, Rod Control System, II.B.2.; LO-LP-27102, Objective II.1

001000A102 ..(KA's)

ANSWER: 016 (1.00)

a.

REFERENCE:

VOGTLE: Text Chapter 6, Rod Control System, II.A.2.

001000A103 ..(KA's)

ANSWER: 017 (1.00)

a.

REFERENCE:

VOGTLE: Text, Chapter 4b, Sections III A. and B.; LO-LP-17401-06-c, Section II.B.8.e.7)

017000G001 ..(KA's)

ANSWER: 018 (1.00)

c.

REFERENCE:

VOGTLE: LO-LP-17401-06-C, Section II.B.7.

017000G008 ..(KA's)

ANSWER: 019 (1.00)

a.

REFERENCE:

VOGTLE: E-0, Reactor Trip or Safety Injection; LO-LP-37061-05, Section II.A.2.a

017000G015 ..(KA's)

ANSWER: 020 (1.00)

b.

REFERENCE:

VOGTLE: VEGP Text, Chapter 24F, Section C.3

022000K101 ..(KA's)

ANSWER: 021 (1.00)

c.

REFERENCE:

VOGTLE: LO-LP-29130-3, Section II.B.1.b.3), Objective 1
022000K402 ..(KA's)

ANSWER: 022 (1.00)

b.

REFERENCE:

VOGTLE: LO-LP-29130-3, Section II.B.4.a.1), Objective 3
022000K403 ..(KA's)

ANSWER: 023 (1.00)

d.

REFERENCE:

VOGTLE: LO-LP-18201-09-C, II.A.10.a.2).b), Objective 7
059000K402 ..(KA's)

ANSWER: 024 (1.00)

a.

REFERENCE:

VOGTLE: VEGP Text, Chapter 13a, Section C; LO-LP-18201-C, Objective 2
059000K416 ..(KA's)

ANSWER: 025 (1.00)

c.

REFERENCE:

VOGTLE: VEGP Text, Chapter 13a, Section B.2.b.; LO-LP-18201-C, Objective 2
059000K419 ..(KA's)

ANSWER: 026 (1.00)

b.

REFERENCE:

VOGTLE: LO-LP-20101-13-C, Section III.B.6.c.; Objective 5
06100K101 ..(KA's)

ANSWER: 027 (1.00)

c.

REFERENCE:

VOGTLE: Text, Chapter 13d, Section 1. LO-LP-20101-13-C, Objective 3.

061000K501 ..(KA's)

ANSWER: 028 (1.00)

d.

REFERENCE:

VOGTLE: VEGP LO-LP-20101-08, Objectives 4d, 4e, and 8a, pp. 50 & 53.

061000K402 ..(KA's)

ANSWER: 029 (1.00)

c.

REFERENCE:

VOGTLE: Text Chapter 8a, Section B. page 8a-53; LO-LP-28103-09-C, Objective 4.

013000A101 ..(KA's)

ANSWER: 030 (1.00)

a.

REFERENCE:

VOGTLE: LO-LP-25102-08-C, Section II.A.5.a.3); Objective 4.
033000K405 ..(KA's)

ANSWER: 031 (1.00)

d.

REFERENCE:

VOGTLE: Text Chapter 18b; Section C.1.; LO-LP-25102-C, Objective 2.
033000A203 ..(KA's)

ANSWER: 032 (1.00)

b.

REFERENCE:

VOGTLE: LO-LP-21102-11-C, Section II.D.4.d.2).b); Objective 15
039000K405 ..(KA's)

ANSWER: 033 (1.00)

b.

REFERENCE:

VOGTLE: LO-LP-21101-07-C, Section III.A.4; Objective 4.

039000K101 ..(KA's)

ANSWER: 034 (1.00)

d.

REFERENCE:

VOGTLE: Text Chapter 12b, Section II.B.2; LO-LP-212001-12

03900K102 ..(KA's)

ANSWER: 035 (1.00)

c.

REFERENCE:

VOGTLE: Text Chapter 8a, Section B, page 8a-57 para. 2; LO-LP-28102-05, Objective 2.b

012000K610 ..(KA's)

ANSWER: 036 (1.00)

a.

REFERENCE:

VOGTLE: Text Chapter 8a, page 8a-60; LO-LP-28102-05, Objective 1a.
012000K103 ..(KA's)

ANSWER: 037 (1.00)

a.

REFERENCE:

VOGTLE: Text Chapter 8a, page 8a-19; LO-LP-28001-02, Objective 2
012000K404 ..(KA's)

ANSWER: 038 (1.00)

d.

REFERENCE:

VOGTLE: Text, Chapter 10h, page 10h-4; LO-LP-07101-11-C, Objective 18.
075000A201 ..(KA's)

ANSWER: 039 (1.00)

a.

REFERENCE:

VOGTLE: LO-LP-06101-11-C, Objective 8.
075000A401 ..(KA's)

ANSWER: 040 (1.00)

d.

REFERENCE:

VOGTLE: LO-LP-06101-11C, Section II.C.1.; Objective 2.
075020K301 ..(KA's)

ANSWER: 041 (1.00)

a.

REFERENCE:

VOGTLE: Text chapter 9a, page 9a-5; LO-LP-13101-08, Objective 2
006000A101 ..(KA's)

ANSWER: 042 (1.00)

d.

REFERENCE:

VOGTLE: LO-LP-13401-06-C, II.3.c.9); Text Chapter 9a, page 9a-24, Technical Specifications IV.A.1.a).(3)

006000A102 ..(KA's)

ANSWER: 043 (1.00)

d.

REFERENCE:

VOGTLE: Text Chapter 9a page 9a-16, II.B.1; LO-LP-13001-06-C, Objective 5

006000K204 ..(KA's)

ANSWER: 044 (1.00)

a.

REFERENCE:

VOGTLE: LO-LP-12101-C, Objective 2.

005000K111 ..(KA's)

ANSWER: 045 (1.00)

d.

REFERENCE:

VOGTLE: LO-LP-13201, Objective 2
005000K112 ..(KA's)

ANSWER: 046 (1.00)

c.

REFERENCE:

VOGTLE: LO-LP-12101-20-C, page 21; Objective 11
005000K113 ..(KA's)

ANSWER: 047 (1.00)

d.

REFERENCE:

VOGTLE: LO-LP-16301-09-C, Objective 12, p. 5.
002000K109 ..(KA's)

ANSWER: 048 (1.00)

c.

REFERENCE:

VOGTLE: Text, Chapter 5d, page 5d-, LO-LP-09402-03-C, Objective 3
000024A102 ..(KA's)

ANSWER: 049 (1.00)

a.

REFERENCE:

VOGTLE: LO-LP-09402-03-C, page 10, Objective 3
000024A103 ..(KA's)

ANSWER: 050 (1.00)

a.

REFERENCE:

VOGTLE: LO-LP-09402-03-C, page 18; Objective 1
000024A104 ..(KA's)

ANSWER: 051 (1.00)

b.

REFERENCE:

VOGTLE: Text, Chapter 5d, page 5d-23, LO-LP-09402-03-C, Objective 3
000024A113 ..(KA's)

ANSWER: 052 (1.00)

b.

REFERENCE:

VOGTLE: VEGP-18003-C, step A1, NOTE, page 3 0f 21.
000005A101 ..(KA's)

ANSWER: 053 (1.00)

c.

REFERENCE:

VOGTLE: VEGP-18003-C, Subprocedure C, page 16 of 21
000005A102 ..(KA's)

ANSWER: 054 (1.00)

a.

REFERENCE:

VOGTLE: VEGP-18003-C, Immediate actions, page 10 of 21.
000005A104 ..(KA's)

ANSWER: 055 (1.00)

d.

REFERENCE:

VOGTLE: LO-LP-17401-06-C, page 5
000005A201 ..(KA's)

ANSWER: 056 (1.00)

c.

REFERENCE:

VOGTLE: VEGP-18022-C, step 8, page 4 of 7; LO-LP-16401-09, Objective 5
000015K302 ..(KA's)

ANSWER: 057 (1.00)

b.

REFERENCE:

VOGTLE: VEGP 17008-1, Section 4, page 31 0f 36, Tech Specs. 3.4.1.1

000015K303 ..(KA's)

ANSWER: 058 (1.00)

b.

REFERENCE:

VOGTLE: LO-LP-37012-07-C, page 5; Objective 1.

000015K101 ..(KA's)

ANSWER: 059 (1.00)

d.

REFERENCE:

VOGTLE: LO-LP-37012-07-C, Objective 8.

000015K102 ..(KA's)

ANSWER: 060 (1.00)

d.

REFERENCE:

VOGTLE: Text, Chapter 12a, page 12a-30; VEGP-18038-1, Attachment G.
000068A101 ..(KA's)

ANSWER: 061 (1.00)

c.

REFERENCE:

VOGTLE: Text, Chapter 13d, page 13d-17, VEGP-18038-1, Attachment A.
000068A102 ..(KA's)

ANSWER: 062 (1.00)

b.

REFERENCE:

VOGTLE: LO-LP-60327-01-C, Objective 1.
000068A103 ..(KA's)

ANSWER: 063 (1.00)

c.

REFERENCE:

VOGTLE: VEGP LO-LP-60328-02-C, Objective 2, p. 4.
000068K313 ..(KA's)

ANSWER: 064 (1.00)

c.

REFERENCE:

VOGTLE: LO-LP-28102-05, Objective 4q
000054K304 ..(KA's)

ANSWER: 065 (1.00)

b.

REFERENCE:

VOGTLE: LO-LP-37011-06-C, Objective 8
000054K303 ..(KA's)

ANSWER: 066 (1.00)

b.

REFERENCE:

VOGTLE: LO-LP-18201-09-C, Objective 4; LO-LP-18501-06-C, Objective 12
000054K302 ..(KA's)

ANSWER: 067 (1.00)

d.

REFERENCE:

VOGTLE: LO-LI 0101-13-C, Objective 8
000054A203 ..(KA's)

ANSWER: 068 (1.00)

d.

REFERENCE:

VOGTLE: VEGP-18002-C, Step A1; LO-LP-60302-02, Objective 2.
000032K302 ..(KA's)

ANSWER: 069 (1.00)

a.

REFERENCE:

VOGTLE: LO-LP-60302-02, Objective 5.
000032K301 ..(KA's)

ANSWER: 070 (1.00)

b.

REFERENCE:

VOGTLE: LO-LP-60302-02, Objective 1.
000032A204 ..(KA's)

ANSWER: 071 (1.00)

c.

REFERENCE:

VOGTLE: LO-LP-46101-08, Objective 11
000060K303 ..(KA's)

ANSWER: 072 (1.00)

d.

REFERENCE:

VOGTLE: LO-LP-32101, Objective 12
000060A205 ..(KA's)

ANSWER: 073 (1.00)

a.

REFERENCE:

VOGTLE: Text, Chapter 11a, page 11a-31; LO-LP-32101, Objective 11
000060G005 ..(KA's)

ANSWER: 074 (1.00)

b.

REFERENCE:

VOGTLE: LO-LP-37012-07, Objective 6, page 7
000056K302 ..(KA's)

ANSWER: 075 (1.00)

d.

REFERENCE:

VOGTLE: LO-LP-60301-04, Objective 12; VEGP-18001-C, Section D, page 7.
000028K305 ..(KA's)

ANSWER: 076 (1.00)

b.

REFERENCE:

VOGTLE: VEGP 00920-C, Radiation Exposure Limits and Administrative Guidelin , Section 4.2.1

194001K103 ..(KA's)

ANSWER: 077 (1.00)

d.

REFERENCE:

VOGTLE: VEGP-00308-C, p. 5.

194001K101 ..(KA's)

ANSWER: 078 (1.00)

d.

REFERENCE:

VOGTLE: VEGP 10000-C, Conduct of Operations, Section 3.3.1.5

194001A112 ..(KA's)

ANSWER: 079 (1.00)

a.

REFERENCE:

VOGTLE: VEGP 91001-C, Emergency Classification and Implementing Instructions, Section 2.2

194001A116 ..(KA's)

ANSWER: 080 (1.00)

a.

REFERENCE:

VOGTLE: LO-LP-01301-06-C, Section II.C.5.; Objective 1.

063000A201 ..(KA's)

ANSWER: 081 (1.00)

b.

REFERENCE:

VOGTLE: LO-LP-01201-07-C, Section II.H.1.a.2)
063000A202 ..(KA's)

ANSWER: 082 (1.00)

b.

REFERENCE:

VOGTLE: LO-LP-01201-C, Section II.C.2.b, Objective 4.
063000A101 063000A403 ..(KA's)

ANSWER: 083 (1.00)

b.

REFERENCE:

VOGTLE: Text Chapter 12a, page 12a-19; LO-LP-21102-C, Objective 6.
035010K601 ..(KA's)

ANSWER: 084 (1.00)

d.

REFERENCE:

VOGTLE: LO-LP-21102-11-C, Objective 18

035010K602 ..(KA's)

ANSWER: 085 (1.00)

c.

REFERENCE:

VOGTLE: LO-LP-18501-06-C, Objective 7.

035010K402 ..(KA's)

ANSWER: 086 (1.00)

a.

REFERENCE:

VOGTLE: VEGP-19100-C (ECA-0.0), Loss of all AC Power, LO-LP-37031-06-C, Objective 6.

000055K302 ..(KA's)

ANSWER: 087 (1.00)

c.

REFERENCE:

VOGTLE: VEGP-19100-C (ECA-0.0), Loss of all AC Power, Note before step 11.
000055A105 ..(KA's)

ANSWER: 088 (1.00)

c.

REFERENCE:

VOGTLE: LO-LP-60323-01-C, Objective 1.
000056G010 ..(KA's)

ANSWER: 089 (1.00)

a.

REFERENCE:

VOGTLE: LO-LP-28201-06-C, Objective 5
000055A107 ..(KA's)

ANSWER: 090 (1.00)

c.

REFERENCE:

VOGTLE: LO-LP-43101-04-C, Objective 6c.
000067A216 ..(KA's)

ANSWER: 091 (1.00)

d.

REFERENCE:

VOGTLE: LO-LP-43101-06-C, Objective 2.
000067A105 ..(KA's)

ANSWER: 092 (1.00)

a.

REFERENCE:

VOGTLE: LO-LP-43101-05-C, Objective 7
000067A108 ..(KA's)

ANSWER: 093 (1.00)

b.

REFERENCE:

VOGTLE: LO-LP-43101-05-C, Objective 9

000067A217 ..(KA's)

ANSWER: 094 (1.00)

c.

REFERENCE:

VOGTLE: Westinghouse Owners Group Emergency Response Guidelines; LO,LP-37011-06-C, Objective 2

000007K301 ..(KA's)

ANSWER: 095 (1.00)

d.

REFERENCE:

VOGTLE: LO-LP-37011-06-C, Objective 1

000007K105 ..(KA's)

ANSWER: 096 (1.00)

a.

REFERENCE:

VOGTLE: VEGP 19211-C, Step 1, RNO column.
000007A202 ..(KA's)

ANSWER: 097 (1.00)

c.

REFERENCE:

VOGTLE: VEGP-190000-C, Reactor Trip or Safety Injection, Foldout page.
000008K304 ..(KA's)

ANSWER: 098 (1.00)

a.

REFERENCE:

VOGTLE: VEGP-17012-1, Annunciator Response Procedures, page 28
000008A203 ..(KA's)

ANSWER: 099 (1.00)

c.

REFERENCE:

VOGTLE: LO-LP-16303-C, Objective 3.

000008A219 ..(KA's)

ANSWER: 100 (1.00)

c.

REFERENCE:

VOGTLE: LO-LP-11202-C, Objective 5.

000056A104 ..(KA's)

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

A N S W E R S H E E T

Multiple Choice (Circle or X your choice)

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

001 a b c d _____

002 a b c d _____

003 a b c d _____

004 a b c d _____

005 match with selected number in the blank

a _____

b _____

c _____

d _____

006 a b c d _____

007 a b c d _____

008 match with selected number in the blank

a _____

b _____

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 fill response in the blank

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.

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	_____

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.

041	a	b	c	d	_____
042	a	b	c	d	_____
043	a	b	c	d	_____
044	a	b	c	d	_____
045	a	b	c	d	_____
046	a	b	c	d	_____
047	a	b	c	d	_____
048	a	b	c	d	_____
049	a	b	c	d	_____
050	a	b	c	d	_____
051	a	b	c	d	_____
052	a	b	c	d	_____
053	a	b	c	d	_____
054	a	b	c	d	_____
055	a	b	c	d	_____
056	a	b	c	d	_____
057	a	b	c	d	_____
058	a	b	c	d	_____
059	a	b	c	d	_____
060	a	b	c	d	_____
061	a	b	c	d	_____
062	a	b	c	d	_____
063	a	b	c	d	_____
064	a	b	c	d	_____
065	a	b	c	d	_____

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.

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

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.

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

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

A N S W E R K E Y

001	d	
002	a	
003	b	
004	b	
005	a	4
	b	1
	c	2
	d	3
006	c	
007	d	
008	a	3
	b	2
009	a	
010	a	
011	a	
012	d	
013	d	
014	a	2
	b	2
	c	125
	d	50
015	b	
016	a	
017	a	
018	c	
019	a	
020	b	

A N S W E R K E Y

021	c
022	b
023	d
024	a
025	c
026	b
027	c
028	d
029	c
030	a
031	d
032	b
033	b
034	d
035	c
036	a
037	a
038	d
039	a
040	d
041	a
042	d
043	d
044	a
045	d
046	c
047	d
048	c

SENIOR REACTOR OPERATOR

A N S W E R K E Y

049	a
050	a
051	b
052	b
053	c
054	a
055	d
056	c
057	b
058	b
059	d
060	d
061	c
062	b
063	c
064	c
065	b
066	b
067	d
068	d
069	a
070	b
071	c
072	d
073	a
074	b
075	d

A N S W E R K E Y

076	b
077	d
078	d
079	a
080	a
081	b
082	b
083	b
084	d
085	c
086	a
087	c
088	c
089	a
090	c
091	d
092	a
093	b
094	c
095	d
096	a
097	c
098	a
099	c
100	c

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