ENCLOSURE 1

EXAMINATION REPORT - 50-321/OL-87-01

Facility Licensee: Georgia Power Company

Facility Name: Edwin I. Hatch Nuclear Plant

Facility Docket No.: 50-321 and 50-366

Written and operating (oral and simulator) examinations were administered at Edwin I Hatch Nuclear Plant near Baxley, Georgia.

Chief Examiner: Ken E. Brockman — 16 June 1987
Date Signed

Approved by: John F. Munro, Section Chief — 6/19/87
Date Signed

Summary:

Examinations were administered on April 20 -23, 1987.

Written and operating (oral and simulator) examinations were given to eight Senior Reactor Operators (SRO). Eight SROs passed the written examination; eight SROs passed the operating examination.

Based on the results described above, eight of eight SROs passed the overall examination.

Of the five technical comments to the examination made by the facility, two (40%) were due to inaccurate/insufficient/outdated material provided to the Commission for the examination construction. This low number indicates the improvement made in the accuracy and completeness of the facility's training materials.

REPORT DETAILS

1. Facility Employees Contacted:

* J. T. Beckham, Vice President - Hatch
* H. Nix, Site General Manager - Hatch
* C. T. Moore, Manager - Nuclear Training
* R. S. Grantham, Supervisor - Operations Training
R. Berry, Simulator Instructor

* Attended Exit Meeting

2. Examiners:

* K. Brockman, Region II
C. Casto, Region II
F. Keeton, Region III

* Chief Examiner

3. Examination Review Meeting:

At the conclusion of the written examination, the examiners provided your training staff with a copy of the written examination and answer key for review. The comments made by the facility reviewers are included as Enclosure 3 to this report. The NRC resolutions to these comments are listed below.

SRO Examination

5.Ø6 Comment not accepted.

The word "WHAT" in the stem of the question is capitalized in bold type. This should be sufficient to focus the examinees' attention to the requirement that a definition be provided.

5.11 Comment not accepted.

The intent of the question was to determine if the examinees have an "appreciation" for relative absorption cross sections of common poisons in the core. Grading was based upon the candidates description of the concept of poison retention in the core. "Key words/phrases" were not required for full credit.

5.15 Comment partially accepted.

The statement in Part a. is word-for-word from the GE BWR Academic Series, "Heat Transfer and Fluid Flow," Chapter 6, page 6-100, item 3., with the exception that the words "less than" were dropped as a distractor. If, however, the examinee states the proper assumptions, then TRUE would be an acceptable response.

7.04 Comment accepted.

The answer key has been corrected and the question revised, as per 34AB-OPS-045-2S.

7.09 Comment not accepted.

Parts a, b, and d are actions that an operator must be familiar with if immediate control room evacuation is required. Part c would only require familiarity with the procedure in knowing that "Fuel Pool Cooling" is not addressed.

7.14 Comment acknowledged.

The intent of the question was to determine if the examinee could recognize a "loss of secondary containment" and have a "general" idea of actions required for this event. Although the answer key lists specific actions, the exam was graded accepting answers that could be identified as "reasonable actions", as per 34AB-OPS-018-2S and supporting procedures. The answer key has been annotated to more specifically show this.

8.01 Comment partially accepted.

During the examination, the examinees were instructed to state their assumptions if the intent was unclear. The answer key has been revised as follows:

a. No (Yes with the assumption of TS applicability for both units stated).

d. No (Yes with the assumption of TS applicability for both units stated).

The staffing requirements as stated in the Technical Specifications are not clear, in that the potential exist to interpret these staffing levels as being unit specific, as opposed to being site specific. Neither Unit I nor Unit II Technical Specifications identifies Table 6.2.2.1 as being the minimum staff required for Unit I and Unit II. Subsequent conversations with the Resident Inspectors at the site confirm that the specifications are being consistently interpreted as site specific, and that there is no reason for considering this to be an item requiring further resolution.

8.Ø2 Comment partially accepted.

The term "Open Air Gap," although only used in Hatch material as stated in the comment, applies to pulled fuses, open breakers, open disconnects, racked-out breakers, etc., in any electrical circuit. An SRO, responsible for the safety of personnel, should recognize that this condition is necessary for work on any high-voltage system. The statement is correctly referenced to LP 3.1. The EO reference is incorrect and was removed from the answer key; also, the specific voltage (277 V) will not be required for full credit.

8.Ø3 Comment accepted.

Part b. - The answer key has been corrected according to the revised procedure 34GO-SUV-ØØ1-ØS.

Part c. - (or local) is in parentheses indicating it is not required for full credit.

8.Ø4 Comment acknowledged.

The stem of the question and part (a) clearly state that the examinee is the OSOS. Therefore, any of the titles or names suggested (other than OSOS) are acceptable. In part (b), any responses indicating that the examinee is familiar with the ED duties would be acceptable. The answer key was annotated to more specifically show this.

8.Ø5 Comment accepted.

The question was deleted as recommended. A review of the ALARA Procedure substantiates that memorization is not required, because reference material is readily available and the administrative criteria for staff actions does not require short-term operator retention.

8.Ø7 Comment accepted.

The question was deleted as recommended. A review of the Hatch reporting requirements and operator responsibilities indicate that the items listed in the question would not be considered the responsibility of an Operations SRO.

8.Ø9 Comment accepted.

MCPR will be included as a correct answer. This is based on the utility recommended references as well as the 5th paragraph on page 3/4 1-2 in the Unit II Technical Specifications.

8.12 Comment not accepted.

The requirements for entry are considered to be of significance. They are presented in the lesson material with enough emphasis to justify using them as a tool for measuring the examinees' knowledge.

4. Exit Meeting

At the end of the site visit the examiners met with representatives of the plant staff to discuss the results of the examination.

There were no generic performance weaknesses noted during the oral or simulator examinations.

There were four weaknesses noted during the operating examinations which, while not generic, were significant enough to bring to the attention of the plant management.

a. In using the Emergency Operating Procedures (EOPs), one candidate took a wrong action path due to the human factors construction of the flow path charts. With the great quantity of information which the utility has decided to include on the flow charts, the action paths which go from step to step often are so close together, that the potential for mistracing the proper path is very great. The utility was encouraged to continue their evaluation of the symptom-based emergency procedures from a human-factors viewpoint.

b. The operators, in two instances, were hesitant to utilize HPCI or RCIC as high pressure feed systems, when they were INOPERABLE in the automatic mode of operation. The EOPs asked the question as to whether HPCI or RCIC were AVAILABLE; the systems were available and would have helped to mitigate the consequences of the transient if they had been used. The training department was encouraged to ensure that all operators understand the difference between available and operable, as they apply to system operation.

c. Procedure AR 602-325 only lists one of the three Technical Specification relationships which exist if this annunciator illuminates (TS 3/4.6.3). TS 3/4.3.2-1 and 3/4.7 are not listed as applicable in the procedure. These TSs should be included at the first possible convenience.

d. The Terminal Blocks for the fuses which control the solenoids for the Main Steam Isolation Valves (MSIVs) were not labeled and could not be verified. This could cause operational errors if the fuses were required to be pulled, as is possible during utilization of the EOPs.

There were numerous instances of simulator weaknesses during the examination. All were of minor significance and posed no challenge to the integrity of the examinations. Specific software shortcomings of note were:

a. When establishing RCIC flow for performance of the full-flow Surveillance Inspection, only 390 gpm could be established, as opposed to the required 400 gpm.

b. Cycling of the Minimum Flow Valves within the Feedwater System caused an unrealistic reaction on feedwater flow when power was less than 70% and three Condensate Booster Pumps were in operation.

c. The RCIC -022 valve hand switch must be held for approximately 5 seconds after the "red light" comes on to attain proper valve operation.

d. SPDS did not reset when Initial Conditions were changed between scenarioes. The trace data which was being tracked from the last scenario continued to be displayed until the time retention period expired.

e. The Cause - Effect Book for the various malfunctions needs to be updated to ensure that both utility and Commission personnel have accurate descriptions of the simulation activities.

The cooperation given to the examiners and the effort to ensure an atmosphere in the control room conducive to oral examinations was noted and appreciated.

The licensee did not identify as proprietary any of the material provided or reviewed by the examiners.

ENCLOSURE 2

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

FACILITY: HATCH 1&2

REACTOR TYPE: BWR-GE4

DATE ADMINISTERED: 87/04/20

EXAMINER: KEETON, J.

CANDIDATE: _____

INSTRUCTIONS TO CANDIDATE:

Use separate paper for the answers. Write answers on one side only. Staple question sheet on top of the answer sheets. Points for each question are indicated in parentheses after the question. The passing grade requires at least 70% in each category and a final grade of at least 80%. Examination papers will be picked up six (6) hours after the examination starts.

CATEGORY VALUE	% OF TOTAL	CANDIDATE'S SCORE	% OF CATEGORY VALUE	CATEGORY
26.00	25.81	_____	_____	5. THEORY OF NUCLEAR POWER PLANT OPERATION, FLUIDS, AND THERMODYNAMICS
25.50	25.31	_____	_____	6. PLANT SYSTEMS DESIGN, CONTROL, AND INSTRUMENTATION
25.50	25.31	_____	_____	7. PROCEDURES - NORMAL, ABNORMAL, EMERGENCY AND RADIOLOGICAL CONTROL
23.75	23.57	_____	_____	8. ADMINISTRATIVE PROCEDURES, CONDITIONS, AND LIMITATIONS
100.75		_____	_____%	Totals
		Final Grade		

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

_____
Candidate's Signature

NRC RULES AND GUIDELINES FOR LICENSE EXAMINATIONS

During the administration of this examination the following rules apply:

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

2. 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.

3. Use black ink or dark pencil only to facilitate legible reproductions.

4. Print your name in the blank provided on the cover sheet of the examination.

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

6. Use only the paper provided for answers.

7. Print your name in the upper right-hand corner of the first page of each section of the answer sheet.

8. Consecutively number each answer sheet, write "End of Category __" as appropriate, start each category on a new page, write only on one side of the paper, and write "Last Page" on the last answer sheet.

9. Number each answer as to category and number, for example, 1.4, 6.3.

10. Skip at least three lines between each answer.

11. Separate answer sheets from pad and place finished answer sheets face down on your desk or table.

12. Use abbreviations only if they are commonly used in facility literature.

13. The point value for each question is indicated in parentheses after the question and can be used as a guide for the depth of answer required.

14. Show all calculations, methods, or assumptions used to obtain an answer to mathematical problems whether indicated in the question or not.

15. Partial credit may be given. Therefore, ANSWER ALL PARTS OF THE QUESTION AND DO NOT LEAVE ANY ANSWER BLANK.

16. If parts of the examination are not clear as to intent, ask questions of the examiner only.

17. You must sign the statement on the cover sheet that indicates that the work is your own and you have not received or been given assistance in completing the examination. This must be done after the examination has been completed.

18. When you complete your examination, you shall:

a. Assemble your examination as follows:

(1) Exam questions on top.

(2) Exam aids - figures, tables, etc.

(3) Answer pages including figures which are part of the answer.

b. Turn in your copy of the examination and all pages used to answer the examination questions.

c. Turn in all scrap paper and the balance of the paper that you did not use for answering the questions.

d. Leave the examination area, as defined by the examiner. If after leaving, you are found in this area while the examination is still in progress, your license may be denied or revoked.

QUESTION 5.01 (1.00)

Criticality is defined as Keff=1, "fission chain reaction is self-sustaining." DESCRIBE the process that makes it possible to have a self-sustaining reaction at Keff=0.90?

QUESTION 5.02 (2.00)

You are Shift Supervisor during a startup following a reactor scram. The RO has withdrawn rods to Keff=0.99 and the reactor is cooling down at a rate of 100 degrees F/hr.

a. Calculate WHEN the reactor will go critical with no further rod motion (Consider only temperature effects, assume alpha TM = -1 x 10E-4 Delta K/K degrees F). (1.0)

b. IF the reactor was at 100% power for 60 days prior to the SCRAM, HOW would Xenon affect the time calculated in a. above:

1) 5 hours after the scram? (0.5)

2) 20 hours after the scram? (0.5)

QUESTION 5.03 (1.50)

a. Define Net Positive Suction Head (NPSH). (0.5)

b. Explain WHAT happens and WHY to Recirculation Pump NPSH if HPCI initiates at 70% power. (1.0)

QUESTION 5.04 (1.00)

During reactor shutdown for refueling, the Station Nuclear Engineer tells you shutdown margin is 0.41%. CALCULATE Keff.

QUESTION 5.05 (1.00)

WHAT could happen if the Core Spray Pumps started with the Jockey Pumps shut down?

(***** CATEGORY 05 CONTINUED ON NEXT PAGE *****)

QUESTION 5.06 (1.50)

WHAT is "Power Coefficient of Reactivity."

WHICH other coefficient DOMINATES the power coefficient during:

a. Startup?

b. Power operation?

QUESTION 5.07 (2.00)

With regard to PCIOMR, IDENTIFY the following statements as TRUE or FALSE.

a. PCI failures are dependent on absolute power, increase in power, duration of power increase, previous power history, and fuel exposure.

b. Regardless of stress state, strain rate, temperature, presence of iodine, and state of irradiation, zircalloy fuel tubes will be ductile.

c. If power level is reduced prior to completing the 12-hour soak, pre-conditioning is resumed at either the new power level or the power level 12-hours before the power decrease, whichever is higher.

d. PCIOMR limits are given in Section 3/4.2 of the Technical Specifications.

QUESTION 5.08 (1.00)

DEFINE "rod shadowing," and EXPLAIN the effects.

(***** CATEGORY 05 CONTINUED ON NEXT PAGE *****)

QUESTION 5.09 (1.50)

During your shift, an SRV inadvertently opens at 100% power and 1000 psia. Use the Steam Tables or Mollier Diagram to answer the following: (ASSUME INSTANTANEOUS HEAT TRANSFER AND A SATURATED SYSTEM.)

a. Determine tailpipe temperature, assuming reactor pressure remains constant and suppression pool is at atmospheric pressure.

b. Is the steam exhausting to the suppression pool saturated or superheated?

c. Determine at what reactor pressure the tailpipe would reach its maximum temperature if the reactor depressurizes.

QUESTION 5.10 (2.00)

Match the following statements (1 thru 4) with the predominant reactivity coefficient (a thru c): (May be used more than once.)

1. _____ Becomes more dominant as steam flow increases at power.

2. _____ Will initiate reactor power change upon high level in 4th stage feedwater heater.

3. _____ Least responsive to fuel time constant.

4. _____ Taken advantage of during Anticipated Transient Without Scram (ATWS).

a. Moderator Temperature Coefficient

b. Doppler Coefficient

c. Void Coefficient

QUESTION 5.11 (1.00)

a. GADOLINIUM was chosen as a burnable poison instead of BORON because Gd has a larger absorption cross-section. TRUE or FALSE ?

b. Justify your answer.

(***** CATEGORY 05 CONTINUED ON NEXT PAGE *****)

QUESTION 5.12 (2.50)

Match each of the following statements with the appropriate numbered item:

a. The limiting parameter that assures PCT will not exceed 2200 degrees F during a design basis LOCA.

b. Total power passing through a unit length of fuel rod.

c. APLHGR divided by MAPLHGR limit.

d. Safety limit that is not analyzed at < 10% power or < 800 psia.

e. Ratio of the power required to produce OTB in the bundle to actual bundle power.

1. MAPRAT
2. FLCPR
3. APLHGR
4. MCPR
5. LHGR
6. FLPD
7. CPR
8. GELX

QUESTION 5.13 (1.50)

a. Define reactor period. (1.0)

b. As compared to BOL conditions, the effect of delayed neutrons on reactor period at EOL for the same reactivity addition will result in a (SHORTER, THE SAME, LONGER) period. (Choose one) (0.5)

QUESTION 5.14 (1.00)

Shaping control rods are (DEEP, INTERMEDIATE, SHALLOW) rods that are used to change the power profile because they (ARE, ARE NOT) affected by shadowing. (Choose one answer in each parenthesis.)

(***** CATEGORY 05 CONTINUED ON NEXT PAGE *****)

QUESTION 5.15 (2.00)

Concerning pump characteristics, state whether each of the following is TRUE or FALSE:

a. The total brake horsepower for two identical pumps operating in parallel, is twice the individual brake horsepower for a single pump supplying the same capacity.

b. Minimum flow valves are provided in all ECCS systems to minimize the time the pump is running with shutoff head.

c. Even with the recirculation pumps off, the jet pumps will enhance natural circulation flow.

d. Rotary pumps are used on emergency diesels for pumping viscous liquids (such as oil, fuel oil, etc.) because they are simple, light weight, compact, and low cost.

QUESTION 5.16 (1.00)

During a reactor startup, criticality has been achieved and control rods have been withdrawn to establish a 100 sec period. At what point would you expect to see period become longer and WHY?

QUESTION 5.17 (2.50)

Attached Figure # 070 represents a transient that could occur at a BWR.

GIVEN: (1) An SRV is manually lifted at time T = 2 min
(2) The SRV is closed at time T = 4.5 min
(3) No other operator actions occur
(4) Recorder speed = 1 division = 1 minute

EXPLAIN the cause(s) of the following recorder indications:

a. Pressure DECREASE (Region A)

b. Total Steam Flow REDUCTION (Region B)

c. Turbine Steam Flow REDUCTION (Region C)

d. Level INCREASE (Point D)

e. NEW STABLE (lower) Level (Region E)

(***** END OF CATEGORY 05 *****)

QUESTION 6.01 (1.50)

Following a reactor scram, reactor pressure is at 900 psi and the Reactor Water Cleanup System (RWCU) is being used to control reactor vessel water level. With reguards to the RWCU:

a. WHAT special precaution must be taken? (0.5)

b. WHY? (1.0)

QUESTION 6.02 (2.00)

Indicate whether each of the following are TRUE or FALSE.

a. Recirculation pump flow is varied by varying the frequency while maintaining a constant voltage.

b. To restart a recirculation pump after a trip at power, the idle loop is warmed up by throttling the discharge valve.

c. Available Net Positive Suction Head for the recirculation pumps is greater at 100% power than at 75% power because of greater feed flow.

d. With the recirculation pump drive-motor windings at rated temperature, two starts are allowed during a one-hour period.

QUESTION 6.03 (1.00)

(Fill in the Blanks)

(a)_____ LPRM detectors serve each of the APRM channels on RPS Bus A, and (b)_____ LPRM detectors serve each of the APRM channels on RPS Bus B.

QUESTION 6.04 (2.00)

STATE the purpose of the LOW-FLOW SET (LLS) system, and LIST the conditions that will arm the system?

(***** CATEGORY 6 CONTINUED ON NEXT PAGE *****)

QUESTION 6.05 (.50)

TRUE or FALSE ?

The Standby Liquid Control (SBLC) system will shut down the reactor from any operating condition at any time in core life and is intended as a backup for reactor scram.

QUESTION 6.06 (2.50)

Main steam line rad monitors provide 5 protective actions at radiation levels 3XN. LIST THEM.

QUESTION 6.07 (1.00)

Each Standby Liquid Control (SBLC) pump is sized to inject the solution into the reactor in 50 to 125 minutes. STATE the reasons for the MAXIMUM and MINIMUM injection rates.

QUESTION 6.08 (3.00)

a. STATE the purpose of the "18-inch excess flow isolation dampers" on the Standby Gas Treatment System (SGTS) suction line and HOW this function is performed. (1.5)

b. STATE the purpose of the activated charcoal filter bed in the SGTS, and HOW and WHY it would be affected if the electrical heater is lost following a LOCA. (1.5)

QUESTION 6.09 (.50)

TRUE or FALSE ?

If a LOCA and LOSP occur simultaneously, all RHR pumps will start 12 seconds after the LOSP to allow the diesel generators to first tie to their respective buses.

(***** CATEGORY 06 CONTINUED ON NEXT PAGE *****)

QUESTION 6.10 (2.00)

a. U-1 and U-2 use nitrogen to inert their primary containments during operation. Other than preventing an explosive mixture following a LOCA, what is the reason given for inerting Unit 2? (0.5)

b. The nitrogen is heated prior to reaching containment. Identify THREE adverse effects that loss of heating could have on the systems or plant during inerting. (1.5)

QUESTION 6.11 (1.50)

You have just relieved the offgoing shift during a plant startup. The reactor is at 8% thermal power and you notice the mechanical vacuum pump is running. Is this a problem? WHY or WHY NOT?

QUESTION 6.12 (2.00)

You are Shift Supervisor on Unit 2. An instrument technician informs you that he needs to perform maintenance on an Analog Transmitter Trip System (ATTS) cabinet that requires deenergizing one of the 120-V ac power supplies. WHAT effect will this action have on the following:

a. PCIS Group I

b. PCIS Group II and V

c. Secondary Containment

d. RPS trip systems

QUESTION 6.13 (1.50)

Concerning the Control Rod Drive (CRD) system:

a. Identify TWO sources of water.

b. WHICH source is preferred?

c. WHY is this the preferred source?

(***** CATEGORY 06 CONTINUED ON NEXT PAGE *****)

QUESTION 6.14 (1.00)

Which ONE of the following most accurately describes the PRIMARY concern if a tube leak develops in a RWCU Non-Regenerative Heat Exchanger is:

a. Release of radioactive material to the environment.

b. Colder water being injected into the feedwater system.

c. Contamination of the RBCCW system.

d. Overpressurization of the RBCCW system.

QUESTION 6.15 (2.50)

During a fuel load, you are required to verify proper orientation of the fuel assemblies. SIX visual indications of proper orientation are listed. Give FIVE of them.

QUESTION 6.16 (1.00)

Which of the following lists of responses (a - d) CORRECTLY describes the main turbine's response to an OVERSPEED condition?

RESPONSES

SPEEDS	(a)	(b)	(c)	(d)
102%	"Master" ICV's begin to throttle	All ICV's begin to throttle	All ICV's begin to throttle	"Master" ICV's begin to throttle
	"Slave" ICV's begin to throttle			"Slave" ICV's begin to throttle
	All ICV's Full Closed	All ICV's Full Closed	All ICV's Full Closed	All ICV's Full Closed
110%	Mechanical O'Spd Trip	Electrical O'Spd Trip	Mechanical O'Spd Trip	Electrical O'Spd Trip
111.5%	Electrical O'Spd Trip	Mechanical O'Spd Trip	Electrical O'Spd Trip	Mechanical O'Spd Trip

(***** END OF CATEGORY 06 *****)

QUESTION 7.01 (1.50)

The High Pressure Coolant Injection (HPCI) system is being shut down following surveillance. The operator has started reducing the turbin speed in accordance with 34SO-E41-001-2S but was called to the other unit to assist with a problem. You notice HPCI turbine speed is still decreasing. According to the procedure:

a. WHAT speed is of concern. (0.50)

b. LIST TWO re[illegible] concern. (1.0)

QUESTION 7.02 (2.00)

In accordance with U-2 Procedure 34SO-B21-001-2S, "Automatic Depressurization System (ADS) and LOW-LOW Set System (LLS)," the ADS may be initiated MANUALLY only if 4 conditions exist. STATE these FOUR conditions.

QUESTION 7.03 (.50)

TRUE or FALSE ?

In preparation for plant startup, the operator lining-up the Plant Service Water (PSW) system informs you that a valve must be changed from its normal position. As Shift Supervisor, you can authorize this change, prior to clearance being issued, to expedite the startup.

QUESTION 7.04 (2.00)

a. You have just received the following alarms, "Rod Out Block," "Heater Trouble," and "4th Stage HTR B007A Level High." STATE the immediate action which must be taken (no reactor scram). STATE the reason for this action.

b. It becomes necessary to insert control rods to stay below the 100% load line. WHAT should you tell your reactor operator regarding core flow and rod insertion cautions and notes?

(***** CATEGORY 07 CONTINUED ON NEXT PAGE *****)

QUESTION 7.05 (2.00)

In accordance with 3400-OPS-001-2S, "Plant Startup," the Reactor Water Level Selector switch is selected to "B." STATE FOUR reasons for selecting "B."

QUESTION 7.06 (1.50)

Deleted.

QUESTION 7.07 (2.50)

Given the following general EOP conditions, IDENTIFY the correct flow path to follow in accordance with 31EO-EOP-001-2S, "Emergency Operating Procedure Inside Control Room Unit 2."

a. High radiation, loss of coolant, control of primary containment integrity.

b. High steam line rediation, loss of vital power, stuck open relief valve.

c. Low power transient or failure of vital equipment.

d. Malfunction of Reactivity Control System.

e. High power reactor transients or failure of vital equipment.

QUESTION 7.08 (.50)

TRUE or FALSE ?

After a reactor scram occurs, the Shift Supervisor determines whether ARPs and/or AOPs will be performed.

(***** CATEGORY 07 CONTINUED ON NEXT PAGE *****)

QUESTION 7.09 (2.00)

As Shift Supervisor on Unit 2 during mid-shift, the reactor is in Mode 5 and you are required to immediately evacuate the control room. Answer each of the following statements TRUE or FALSE.

a. Since the immediate actions of 34AB-OPS-055-2S cannot be performed prior to leaving the control room, the same results will be accomplished by opening and reclosing the RPS breakers, and opening breaker 2N21-F113 at MCC-2C, and opening 2N21-F113 at 147TBT18.

b. Because the RPS tripped if the breakers were opened, you would be required to enter 31EO-EOP-002-2S.

c. The subsequent actions of 34AB-OPS-055-2S require that you verify Fuel Pool Cooling is established in accordance with 34SO-G41-01-2S.

d. According to SO-OPS-04-1186, upon entering the reactor building, you are required to close valve 2T48-F111.

QUESTION 7.10 (2.00)

According to 34AB-OPS-024-2, "RPIS Failure," STATE the FOUR indications you would expect if the RPIS failed with the reactor at 20% power?

QUESTION 7.11 (1.00)

You have entered 31EO-EOP-001-2S, Path 5, and a key parameter previously addressed changes. Your immediate action is: (CHOOSE ONE)

a. Return to that key parameter, readdress, and continue from there.

b. Ignore the change since subsequent actions have assured plant safety.

c. Return to top of flow chart.

d. Go to End Path Manual and follow procedure for that parameter.

(***** CATEGORY 07 CONTINUED ON NEXT PAGE *****)

QUESTION 7.12 (1.50)

During plant startup, in accordance with 3400-OPS-001-2S, "Plant Startup," Step J.29.a., "Turbine and Generator Startup," the generator excitation is established.

a. WHAT action must be taken if the generator voltage does not immediately increase to 60% of rated? (0.5)

b. Identify TWO possible reasons of failure to establish excitation. (1.0)

QUESTION 7.13 (1.00)

You are maintaining cold shutdown in accordance with 3400-OPS-015-2S, "Maintaining Cold Shutdown or Refuel Condition." A CAUTION states that heating may occur in the core area with no temperature increase at the recirc pump suction or RWCU inlet. State the TWO conditions that can cause this.

QUESTION 7.14 (2.50)

During power operation as the Unit 2 Shift Supervisor, a PEO reports that both doors on a Reactor Building access were damaged by a contractor moving equipment through and neither door can be fully closed. STATE FIVE actions you would take?

QUESTION 7.15 (1.00)

(Fill in the blanks)

During Post-LOCA operation, the Hydrogen Recombiner System shall be initiated per 3480-T49-001-2, "Post LOCA Hydrogen Recombiner," when hydrogen concentration reaches (a)_____%. The recombiner system will be operated to maintain the hydrogen concentration below (b)_____% and the oxygen concentration below (c)_____%.

(***** CATEGORY 07 CONTINUED ON NEXT PAGE *****)

QUESTION 7.16 (1.50)

According to 3480-L43-001-2, "Plant Fire Protection System," after the fire is out and the fire pumps are shutdown, the Manual Reset Switch must be reset by the PEO.

a. WHERE is this switch located? (0.5)

b. WHAT would be the consequences of not resetting the switch? (1.0)

QUESTION 7.17 (2.00)

Entry into a HIGH RADIATION AREA is required. To complete the task, the operator will receive an estimated 70 mrem whole body dose. You have the following information on available operators. Time constraints will not permit authorization of an increase in administrative limits (above your level as Shift Supervisor). NRC Form 4s are on file unless otherwise indicated. Give your reasons for accepting or rejecting each operator for the job.

Operator	1	2	3	4
Sex	Male	Male	Female	Male
Age	29	30	24	20
Wk/Exposure	200 mrem	0 mrem	5 mrem	98 mrem
Qtr/Exposure	1190 mrem	1960 mrem	435 mrem	420 mrem
Life/Exposure	-	55370 mrem	2735 mrem	9970 mrem
Remarks	History Unavailable		3 months Pregnant- Signed Prenatal Document on File	

(***** END OF CATEGORY 07 *****)

QUESTION 8.01 (2.00)

You are U-2 Shift Supervisor on back shift. U-1 is operating at power, U-2 is in Mode 5, fuel movement in progress. Because of a Flu epidemic, your crew composition is scheduled as follows:

SOL 2 + 1 Fuel Handling Supervisor
OL 3
Non-licensed 3
STA 1

The STA, 1 OL, and FH Supervisor have called in sick. The STA and OL have just completed a double shift, the FH Supervisor operator has worked 14 hours.

a. Can the STA from the previous shift satisfy your requirements?

b. How long do you have to meet your requirements?

c. Who can authorize deviation from overtime guidelines?

d. Can you assign 1 of your SOLs to FH Supervisor to meet that requirement?

QUESTION 8.02 (1.00)

TRUE or FALSE ?

A clearance can be issued without an "open-air-gap" to work on Drywell Cooling Fans. JUSTIFY your answer.

QUESTION 8.03 (2.00)

You are verifying a valve line-up, STATE how you confirm position of each of the following:

a. Closed valve.

b. Open valve.

c. Motor-operated valve.

d. Locked throttle valve.

(***** CATEGORY 08 CONTINUED ON NEXT PAGE *****)

QUESTION 8.04 (2.25)

A situation occurs requiring declaration of an alert. As On-Shift Operations Supervisor:

a. Who will relieve you as Emergency Director? (0.5)

b. LIST SEVEN of your responsibilities until relieved? (1.75)

QUESTION 8.05 (1.50)

Deleted.

QUESTION 8.06 (1.00)

STATE the condition that must exist for more than ONE MWO number to be placed on a clearance?

QUESTION 8.07 (1.00)

Deleted.

QUESTION 8.08 (1.00)

Unit 1 Technical Specifications state that "Irradiated fuel shall not be handled in or above the reactor prior to 24 hours after reactor shutdown." WHICH one of the following most accurately describes the reason?

a. This is the minimum time it takes to set up for fuel handling.

b. Decay heat must be below a specified level.

c. Fuel handling accident analyses are based on 24-hour decay.

d. Shutdown margin cannot be calculated until Xe is on its decay cycle.

QUESTION 8.09 (1.50)

With respect to Unit 1 Technical Specifications, Safety Limits, WHICH specification requires periodically checking scram time and WHY?

(***** CATEGORY 08 CONTINUED ON NEXT PAGE *****)

QUESTION 8.10 (1.50)

With respect to Unit 1 and Unit 2 Technical Specifications, STATE the differences between the safety limits for the two Units.

QUESTION 8.11 (1.50)

In accordance with Technical Specification, Section 6.8, and 10AC-MGR-003-0S, "Preparation and Control of Procedures," temporary changes to safety-related procedures can be made if THREE conditions are met. STATE those conditions.

QUESTION 8.12 (2.00)

a. Entry into primary containment is governed by temperature/time limits. STATE those limits as given in 3160-OPS-005-0S, "Primary Containment Entry." (1.5)

b. TRUE or FALSE ?

Following a one-hour rest outside containment, re-entry can be made. (0.5)

QUESTION 8.13 (2.50)

On back shift, a fire is reported in one of the maintenance shops:

a. STATE the PRIMARY and ALTERNATE persons (position title) designated to assume Fire Brigade Chief. (1.0)

b. What is the minimum number of persons who should show up for the fire brigade? (0.5)

c. How many of these persons should have competent knowledge of safety systems? (0.5)

d. Are those persons responding to the fire still counted as part of the shift crew? (0.5)

(***** CATEGORY 08 CONTINUED ON NEXT PAGE *****)

QUESTION 8.14 (1.00)

A Technical Specification Quarterly Surveillance for a Unit 2 ECCS system was due July 1st. Because of an LCO on the system, the surveillance was not completed until July 15th.

a. WHEN will the next quarterly surveillance become due?

b. DEFINE "Grace Period" for Unit 2.

QUESTION 8.15 (2.00)

With regards to Recirculation System:

a. STATE the condition(s) that actuate(s) the End of Cycle RPT trip.

b. STATE WHY this trip is neccessary.

QUESTION 8.16 (1.00)

Unit 2 is in HOT SHUTDOWN with a reactor pressure of 805 psig. Operability SI's are performed on all of the MSL Radiation Monitoring System Channels. Channels A and D test UNSAT, while Channels B and C test SAT. Maintenance has no estimate of repair time and will not be able to commence troubleshooting and repairs for 16 hours.

Which of the following actions most accurately detail the allowances and/or limitations imposed by the Technical Specifications in this instance?

a. No action required; function not required to be OPERABLE.

b. Place one Trip System in the tripped condition, within one hour; no additional action is required.

c. Be in Cold Shutdown within the next 30 hours.

d. Place one Trip System in the tripped condition, within one hour AND be in Cold Shutdown within the next 30 hours.

e. Lock the Reactor Mode Switch in the Shutdown Position, within one hour.

(***** CATEGORY 08 CONTINUED ON NEXT PAGE *****)

QUESTION 8.17 (.50)

Given the following conditions on Unit 2:

Mode Switch - Refuel
Temperature - 180 deg F
Pressure - 0 psig
Level - 35 inches
RHR - SDC Mode
The Head Bolts to the RPV are DETENSIONED

STATE the above described Operational Condition.

QUESTION 8.18 (1.00)

Unit 2 has been recently shutdown and placed in COLD SHUTDOWN - Operational Condition 4. The shutdown/cooldown was necessitated by a requirement to drain and visually inspect the Suppression Pool.

The following plant conditions/requirements have been established:

CS system is aligned to the CST
Reactor Mode Switch is locked in the Shutdown Position
No maintenance affecting the reactor vessel is in progress

There is one outstanding deficiency:

D/G 2A Turbocharger is undergoing repairs (D/G INOP)

NOTE: APPLICABLE TS's ARE ENCLOSED FOR REFERENCE

Which one of the following most accurately describes the allowances/ limitations imposed by the Technical Specifications?

a. Suppression Pool draining may commence, since all TS LCO requirements are met.

b. Suppression Pool draining may commence as soon as the Shift Supervisor ensures that NO POSITIVE REACTIVITY changes will occur in this condition.

c. Suppression Pool draining may commence as soon as the Shift Supervisor ensures that NO POSITIVE REACTIVITY changes will occur AND that one LPCI subsystem is OPERABLE in this condition.

d. Suppression Pool draining may commence ONLY AFTER the D/G 2A Turbocharger is repaired and the D/G is declared OPERABLE.

(***** END OF CATEGORY 08 *****)

SRV OPEN/CLOSE

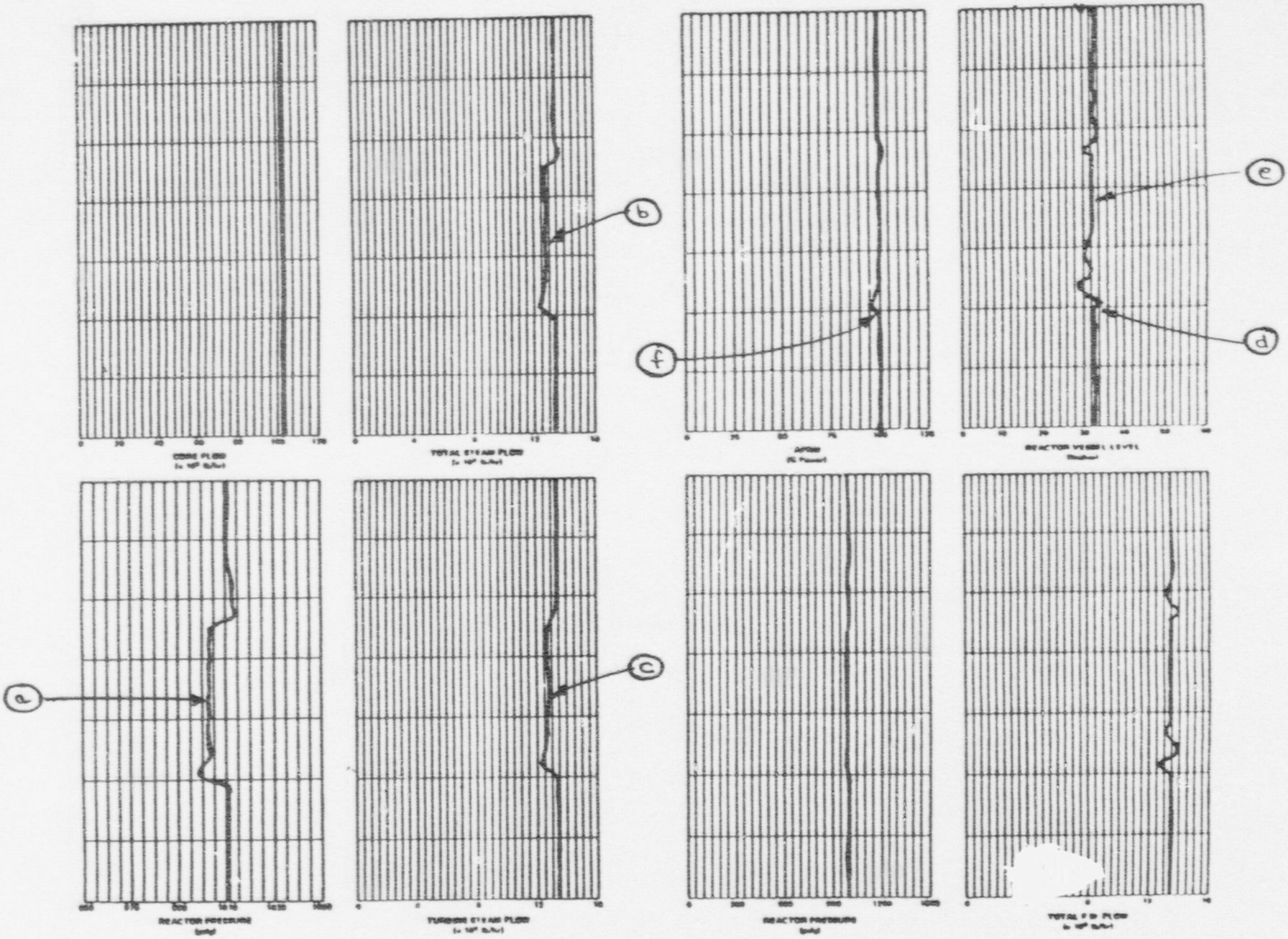

FIGURE 1.11

ANSWERS -- HATCH 1&2 -87/04/20-KEETON, J.

ANSWER 5.01 (1.00)

Subcritical Multiplication (0.5) uses source neutrons such that the number of neutrons lost in each generation is equal to the number of neutrons produced from the source (i.e., source critical) (0.5).

REFERENCE
EIH: Reactor Theory, Chapter 3, LO #1.2, 1.6
292003K106 ...(KA'S)

ANSWER 5.02 (2.00)

a. Delta K/K = Keff-1/Keff = 0.99-1/0.99 =

0.0101 Delta K/K must be inserted (0.5)

Delta K/K = (Alpha TM) (Delta T) (Time)

0.0101 Delta K/K =
(-1X10E-4 Delta K/K degrees F)(-100 degrees F) (Time hr.)

Time(hr.) = (0.0101 Delta K/K)/
(-1X10E-4 Delta K/K Degrees F)(-100 Degrees F) = 1.01 hr
(0.5)

b. 1) 5 hours after scram Xe is increasing so time would be longer. (0.5)
2) 20 hours after scram Xe is decreasing so time would be shorter. (0.5) [Longer than in a., but shorter than in b.1) is acceptable, because the examinee may assume that a. was Xe free.]

REFERENCE
EIH: Reactor Theory, Chapter 4, LO #2.4, Chapter 6, LO #1.5
292006K107 292008K105 ...(KA'S)

ANSWERS -- HATCH 1&2 -87/04/20-KESTON, J.

ANSWER 5.03 (1.50)

a. NPSH is the difference between total pressure at the eye of the pump and saturation pressure for the liquid. (0.5) [Mathematical definition is acceptable for full credit.]

b. The NPSH would increase (0.5) because the temperature of the feedwater would decrease, thus increasing the subcooling (density, weight, pressure, etc.) at the eye of the recirculation pump. (0.5)

REFERENCE
EIH: Heat Transfer and Fluid Flow, Chapter 6, LO #10.9, 10.10
293004K112 293006K110 ...(KA'S)

ANSWER 5.04 (1.00)

SDM = 1-Keff (or 1-Keff/Keff) (0.50)
SDM = 0.41%/100% = 0.0041
Keff = 1-0.0041 = 0.9959 (0.50)

REFERENCE
EIH: Reactor Theory, Chapter 1, LO #3
292002K113 ...(KA'S)

ANSWER 5.05 (1.00)

The Jockey Pumps are designed to keep the discharge line of the core spray full to prevent waterhammer. Waterhammer could cause severe system damage and reduce the effectiveness of the core spray system. [Any response implying system damage due to WATERHAMMER is acceptable.] (1.0).

REFERENCE
EIH: Heat Transfer and Fluid Flow, Chapter 6, LO #8
EIH: SR-201, LP 8.1, LO #6
209001K402 293006K105 ...(KA'S)

ANSWERS -- HATCH 1&2 -87/04/20-KEETON, J.

ANSWER 5.06 (1.50)

Power Coefficient of Reactivity is the change in reactivity for a 1% change in reactor power. [Will also accept the SUM of reactivity insertion from MODERATOR, DOPPLER, and VOID coefficients at power.] (0.5)
a. During reactor startup, the moderator temperature coefficient is dominant. (0.5)
b. At power, the void coefficient is dominant. (0.5)

REFERENCE
EIH: Reactor Theory, Chapter 4, LO #1.1 and 1.3
292004K114 ...(KA'S)

ANSWER 5.07 (2.00)

a. True
b. False
c. True
d. False

REFERENCE
EIH: Heat Transfer and Fluid Flow, Chapter 9, LO #8
293009K136 ...(KA'S)

ANSWER 5.08 (1.00)

(Insertion or withdrawal of adjacent control rods) changes the relative worth of the control rods, changes zone of control, changes number of neutrons available from adjacent cells, etc. (Any answers showing that the candidate can explain the term will be given full credit.) (1.0)

REFERENCE
EIH: Reactor Theory, Chapter 5, LO #2
292005K104 ...(KA'S)

ANSWERS -- HATCH 1&2 87/04/20-KEETON, J.

ANSWER 5.09 (1.50)

a. 295 degrees F (+ or -15 degrees F)
b. Superheated
c. 450 psia (+ or -50 psia)
(0.5 pts each)

REFERENCE
EIH: Heat Transfer and Fluid Flow, Chapter 3, LO #1.2, 1.4
293003K123 ...(KA'S)

ANSWER 5.10 (2.00)

1. c.
2. a.
3. b.
4. c.
(0.5 pts each)

REFERENCE
EIH: Reactor Theory, Chapter 4, LO #1.5, 3.6, 5.5
292004K114 ...(KA'S)

ANSWER 5.11 (1.00)

a. True (0.5).
b. If boron were used it would remain in the fuel for a longer period of time because of the smaller cross-section adding negative reactivity (0.5).

REFERENCE
EIH: Reactor Theory, Chapter 6, LO #4.4
292007K101 ...(KA'S)

ANSWERS -- HATCH 1&2 -87/04/20-KEETON, J.

ANSWER 5.12 (2.50)

a. 3
b. 5
c. 1
d. 4
e. 7
(0.5 pts each)

REFERENCE
EIH: Heat Transfer and Fluid Flow, Chapter 9, LO #4.2, 3.1, 4.6, 5.10, and 5.2
293009K105 293009K106 293009K111 293009K115 293009K118
...(KA'S)

ANSWER 5.13 (1.50)

a. The amount of time required for reactor power to increase by a factor of e. (1.0)
b. Shorter. (0.5)

REFERENCE
EIH: Reactor Theory, Chapter 3, LO #3.1, 5.6
293009K105 293009K106 ...(KA'S)

ANSWER 5.14 (1.00)

Shallow (0.5)
ARE (0.5)

REFERENCE
EIH: Reactor Theory, Chapter 5, LO #3.3 and 3.5
292005K110 ...(KA'S)

ANSWERS -- HATCH 1&2 -87/04/20-KEETON, J.

ANSWER 5.15 (2.00)

a. False
b. True
c. False
d. True
(0.5 pts each)

REFERENCE
EIH: Heat Transfer and Fluid Flow, Chapters 6 and 8, LO #6.7, 6.11, 6.15, and 8.10
293009K105 293009K106 293009K111 ...(KA'S)

ANSWER 5.16 (1.00)

Period would increase at the point of adding heat (0.5). Moderator temperature coefficient would cause power to turn as the moderator temperature increases (0.5).

REFERENCE
EIH: Reactor Theory, Chapter 4, LO #1.4
292008K108 ...(KA'S)

ANSWERS -- HATCH 1&2 -87/04/20-KEETON, J.

ANSWER 5.17 (2.50)

a. Pressure decrease is from the reduced head losses associated with the steam flow (flow through the SRV requires less driving force). (0.5)

b. Indicated total steam flow is reduced since less steam is "seen" by the flow restrictors. The SRV is upstream of the flow sensors. - OR - EHC reduces flow in response to pressure decrease. Less flow is "seen" by the flow restrictors. (0.5)

c. Turbine steam flow is reduced by the EHC system proportionate to the SRV release (interactive with pressure control). (0.5)

d. Level increase is experienced in the annulus as the pressure reduction causes void formations in the core. (0.5)

e. (Level reduction is controlled by the FWCS). Level is stabilized at a point where the level error matches the steam flow/feed flow mismatch signal. (0.5)

REFERENCE
EIH: GPNT, Vol VII, Chapter 10.4
239001A105 239002K101 239002K104 ...(KA'S)

ANSWERS -- HATCH 1&2 -87/04/20-KEETON, J.

ANSWER 6.01 (1.50)

a. Non-regenerative heat exchanger outlet temperature must be closely monitored. (0.5)
b. Because water is being dumped to the condenser and no cooling water is flowing through the regenerative heat exchanger (0.5). RWCU will isolate if non-regenerative heat exchanger outlet reaches 140 degrees F. (0.5). [Other technically correct responses are also acceptable.]

REFERENCE
EIH: SR-201, LP 3.1, LO #8
293009K105 293009K106 293009K111 ...(KA'S)

ANSWER 6.02 (2.00)

a. False
b. True
c. False
d. False
(0.5 pts each)

REFERENCE
EIH: SR-201, LP 4.1
293009K105 293009K106 ...(KA'S)

ANSWER 6.03 (1.00)

(a) 17
(b) 14
(0.5 pts each)

REFERENCE
EIH: SR-201, LP 12.3, LO #9
215005K104 ...(KA'S)

ANSWERS -- HATCH 1&2 -87/04/20-KEETON, J.

ANSWER 6.04 (2.00)

The purpose of the LLS is to mitigate the postulated high frequency loads on containment and thrust loads on the SRV discharge lines that may occur during subsequent SRV openings (1.0). Armed by high reactor pressure - [> 1054 psig] (0.5) and any SRV open [> 85 psig on tail pipe] (0.5) [Setpoints are not necessary for full credit.]

REFERENCE
EIH: SR-201, LP 14.2, LO 1 and 5b.
293009K105 293009K106 ...(KA'S)

ANSWER 6.05 (.50)

False. (0.5)

REFERENCE
EIH: SR-201, LP 11.1, LO #1
211000G004 ...(KA'S)

ANSWER 6.06 (2.50)

1. Reactor scram
2. Gr. 1 isolation
3. Main control room ventilation switches to pressurization mode
4. Mechanical vacuum pump trips and isolates
5. Gland seal exhauster trips and isolates
(0.5 pts each)

REFERENCE
EIH: SR-201, LP 14.1, LO #2
293009K105 293009K106 293009K111 ...(KA'S)

ANSWER 6.07 (1.00)

Minimum rate limit assures that the boron gets into the reactor quicker than the cooldown rate (0.5). Maximum rate limit assures sufficient mixing to prevent uneven concentrations from circulating through the core causing cyclic power changes (chugging). (0.5)

REFERENCE
EIH: SR-201, LP 11.1, LO #4
211000A107 211000A204 211000K405 ...(KA'S)

ANSWERS -- HATCH 1&2 -87/04/20-KEETON, J.

ANSWER 6.08 (3.00)

a. These dampers prevent a LOCA pressure spike from causing damage to the filters due to high dp and possible instantaneous release of radioactive particles out of the stack (1.0). (The dampers are spring loaded open and) close on high flow (0.5).
b. The purpose of the charcoal is to adsorb radioactive iodine (0.5). The iodine adsorption efficiency of the charcoal filter bed will be reduced because of the adsorption of water in the charcoal if the heater is lost. (1.0).

REFERENCE
GPC Nuclear Training Manual, Chapter 3.3 and EIH: SR-201, LP 30.1
290001G007 290001K104 ...(KA'S)

ANSWER 6.09 (.50)

False. (0.50)

REFERENCE
EIH: SR-201, LP 34.1, LO #14
203000K407 203000K601 ...(KA'S)

ANSWER 6.10 (2.00)

a. Unit 2 inerts the drywell for fire protection of the recirculation pump areas in lieu of installing a sprinkler system. (0.5)
b. 1. Line could freeze and stop the flow of N2. (Can't inert containment to Tech Spec requirement)
2. Piping could get so cold it could brittle fracture.
3. Containment may get cold enough to cause cracking. (Loss of Primary Containment)
4. Liquid nitrogen could enter containment and damage equipment.
[Other technically correct responses are equally acceptable.]
(any 3 @ 0.5 pts each)

REFERENCE
EI Hatch Lesson Plan, Vol. 5, Chapter 3.1, page 3.1-14 and IE Bulletin 84-01
223001K305 223001K608 .. (KA'S)

ANSWERS -- HATCH 1&2 -87/04/20-KEETON, J.

ANSWER 6.11 (1.50)

Yes. (0.5) Operation of mechanical vacuum pump above 5% is not allowed. Any radioactivity collected in the main condenser is being released directly to the environment (0.5) and sufficient hydrogen may be collected in the condenser to cause an explosion when heated by the vacuum pump. (0.5)

REFERENCE
EIH: SR-201, LP 25.1
271000G001 271000K111 271000K404 ...(KA'S)

ANSWER 6.12 (2.00)

a. Half a Group I isolation (0.5)
b. Half a Group II and V isolation. (0.25)
Half the valves (inboard or outboard) close (0.25)
c. One SBGT starts (0.25)
Loose R/B ventilation (supply and exhaust fans trip and valves close) (0.25)
d. Half scram (no rod motion) (0.5)

REFERENCE
EIH: SR-201, LP 44.3, LO #7
216000K118 216000K318 ...(KA'S)

ANSWER 6.13 (1.50)

a. Condensate system and condensate storage tank (0.25 ea).
b. Condensate system is preferred source (0.5).
c. Because the suction is downstream of the demineralizers and contains less dissolved oxygen (0.5) [Higher purity water, less dissolved solids, etc. also acceptable.]

REFERENCE
EIH: SR-201, LP 1.1, LO #8
201001K101 201001K102 ...(KA'S)

ANSWER 6.14 (1.00)

c. (1.0)

ANSWERS -- MATCH 1&2 -87/04/20-KEETON, J.

REFERENCE
EIH: SR-201, LP 9.1, LO #1
204000K104 204000K601 ...(KA'S)

ANSWER 6.15 (2.50)

1. Channel fastener in center of cell
1. ID lug points to center of cell
3. Spacer buttons adjacent to control rod
4. Serial numbers readable from center of cell
5. Cell to Cell Symmetry
6. Location of Gd rod end plugs
(Any 5 @ 0.4 pts each)

REFERENCE
EIH: SR-201, LP 1.5, LO #11
234000B001 ...(KA'S)

ANSWER 6.16 (1.00)

a.

REFERENCE
EIH: GPNT, Vol. VI, Chapter 5.5-2; Vol. VII, Chapter 9.4-19, 20; L-RO-705

245000G007 245000K405 245000K409 ...(KA'S)

ANSWERS -- HATCH 1&2 -87/04/20-KEETON, J.

ANSWER 7.01 (1.50)

a. The procedure cautions against prolonged operation below 2000 RPM [will accept 2100 RPM] (0.5).
b. To prevent turbine exhaust check valve chatter (0.5), and to ensure adequate oil pressure for turbine governor operation and bearing lubrication [auxiliary oil pump does not start until turbine speed decreases below 1500 RPM]. (0.5)

REFERENCE
GPC: 34SO-E41-001-2S, Rev. 2., Section 7.3.1
EIH: SR-201, LP 5.1, LO #21
206000G010 206000K501 ...(KA'S)

ANSWER 7.02 (2.00)

1. ADS cannot initiate automatically
2. RWL < -101 inches and not increasing
3. Core Spray or RHR or Condensate system is running and capable of injecting.
4. Reactor pressure is > 350 psig.
(4 @ 0.5 pts each)

REFERENCE
GPC: 34SO-B21-001-2S, Rev. 1, Section 7.2.1
EIH: SR-201, LP 38.1, LO #5
218000G002 218000G010 218000K402 ...(KA'S)

ANSWER 7.03 (.50)

False. (0.5)

REFERENCE
GPC: 34SO-P41-001-2S, Rev. 1, Section D.3 (NOTE)
294001K101 294001K102 ...(KA'S)

ANSWERS -- HATCH 1&2 -87/04/20-KEETON, J.

ANSWER 7.04 (2.00)

a. Reduce core thermal power by 20% of initial by decreasing recirc flow (0.5) to limit fuel overpower (0.5).
b. Do not insert shallow rods until core flow is reduced by 10 x 10E6. (0.5) If necessary to insert shallow rods, do so continuously. (0.5)

REFERENCE
GPC: 34AB-OPS-045-2S, Rev. 2, Section 3.0, 4.0 (Caution), and 4.1
EIH: SR-201, LP 15.1, LO #10
259001G001 259001G010 259001K312 ...(KA'S)

ANSWER 7.05 (2.00)

1. "A & C" transmitters use the same reference leg (would negate 2 of 3 trips)
2. Would not get turbine trip on high level if "A" were selected and A&C were failed low.
3. If "A" is selected and failed low, a false signal would cause level increase and level would continue to increase until terminated by operator.
4. With "B" selected, failure of "A" will still allow 2 of 3 trips on high level.
5. With "B" selected, failure of "B" still allows 2 of 3 trips from "A&C".
(Any 4 @ 0.5 pts each)

REFERENCE
GPC: 34BO-OPS-001-2S, Step D.1.d.
EIH: SR-201, LP 2.2, LO #3
259002B010 259002K414 ...(KA'S)

ANSWER 7.06 (1.50)

Deleted.

REFERENCE
Deleted.
266J00A102 2680006001 2680006003 2680006005 ...(KA'S)

ANSWERS -- HATCH 1&2 -87/04/20-KEETON, J.

ANSWER 7.07 (2.50)

a. Path 5
b. Path 4
c. Path 2
d. Path 1
e. Path 3
(0.5 pts each)

REFERENCE
GPC: 31E0-EOP-001-2S, LP # LT-1H-20101-00, LO #7
2950060012 ...(KA'S)

ANSWER 7.08 (.50)

True (0.5)

REFERENCE
GPC: 31E0-EOP-001-2S
E1H: LP # LT-1H-20101-00, EO #11
2950060005 ...(KA'S)

ANSWER 7.09 (2.00)

a. True
b. False
c. False
d. True
(0.5 pts each)

REFERENCE
GPC: 34AB-OPS-055-2S and 80-OPS-04-1186
2950160010 295016K202 295016K301 ...(KA'S)

ANSWERS -- HATCH 1&2 -87/04/20-KEETON, J.

ANSWER 7.10 (2.00)

1. Loss of four rod display
2. Rod drift indication on all rods
3. Select rod block
4. RWM rod block
(0.5 pts each)

REFERENCE
GPC: 34AB-OPS-024-2, Section A
EIH: SR-201, LP 54.2, LO #2
2010020015 201002K103 ...(KA'S)

ANSWER 7.11 (1.00)

c.(1.0)

REFERENCE
GPC: 31E0-EOP-001-2S
EIH: LT-1H-20101-00, LO #5
295038G012 ...(KA'S)

ANSWER 7.12 (1.50)

a. Trip the field breaker (0.5)
b. Failure of manual voltage regulator (0.5) or loss of 125 Vdc [other faults that could result in loss of 125 Vdc to the field will be acceptable.] (0.5)

REFERENCE
GPC: 3400-OPS-001-2S
EIH: Volume 6, Section 7.1
EIH: SR-201, LP 17.1, LO #12
2620016007 2620016014 262001K102 ...(KA'S)

ANSWER 7.13 (1.00)

RWL < 53" (0.5) and core flow < 7700 gpm (0.5)

REFERENCE
GPC: 3480-OPS-015-2S, Section 7.1
2050006001 2050006010 ...(KA'S)

ANSWERS -- HATCH 1&2 -87/04/20-KEETON, J.

ANSWER 7.14 (2.50)

1. Refer to Tech Specs
2. Establish 4 hr. LCO
3. Have PEO attempt to restore containment
4. Notify HNP management
5. Refer to Emergency Classification
6. Notify NRC

[Any reasonable procedural action will be accepted.]
(Any 5 @ 0.5 pts each)

REFERENCE
GPC: 34AB-OPS-019-2S
EIH: SR-201, LP 13.2
2900010001 2900010003 2900010011 2900010015 ...(KA'S)

ANSWER 7.15 (1.00)

a. 3.3 (0.4)
b. 4 (0.3)
c. 5 (0.3)

REFERENCE
GPC: 34SO-T49-001-2
EIH: SR-201, LP 30.1, LO #8
223001G014 223001K404 223001K510 ...(KA'S)

ANSWER 7.16 (1.50)

a. Fire Pump House; Electric Fire Pump Control Panel [either or both answers sufficient for full credit] (0.5).
b. If the switch is not reset, the makeup water will be depleted, i.e., all water going to fire system, demineralized water lost, sanitary water lost, filtered water tank level lost, etc. (1.0).

REFERENCE
GPC: 34SO-L43-001-2
EIH: SR-201, LP 1.36, LO # 1.36.1.3
286000B001 286000B009 286000K401 ...(KA'S)

ANSWERS --- HATCH 1&2 -87/04/20-KEETON, J.

ANSWER 7.17 (2.00)

Operator 1 - Rejected - Would exceed 10 CFR 20 limit 1250 mrem/qtr with no Form 4 on file (0.5)
Operator 2 - Rejected - Has already exceeded limits that require approval above shift supervisor level. (0.5)
Operator 3 - Rejected - Would exceed pregnancy limit of 500 mrem (0.5)
Operator 4 - Accepted - Would not exceed quarterly limit of 1.25 rem whole body. 5(N-18) is limiting only when it is desired to exceed 1.25 rem/qtr whole bod . (0.5)

REFERENCE
GPC: 60AC-HPX01-0, 10 CFR 20
EIH: SR-301, LP 300.3, LO #4
294001K103 ...(KA'S)

ANSWERS -- HATCH 1&2 -87/04/20-KEETON, J.

ANSWER 8.01 (2.00)

a. No, will accept yes with reasonable assumption stated concerning applicability of Technical Specifications to both Units. (0.5)
b. 2 hours. (0.5)
c. General Manager-Plant Hatch or his Deputy (0.5)
d. No, will accept yes with reasonable assumption stated concerning applicability of Technical Specifications to both Units. (0.5)

REFERENCE
EIH: U-2 Technical Specification, Section 6.2
EIH: SR-301, LP 300.3, LO #1
2340000001 ...(KA'S)

ANSWER 8.02 (1.00)

False (0.5). An open-air-gap is required on any high voltage system (277 volts or greater, DW fans are 600 volts.) (0.5)

REFERENCE
EIH: SR-301, LP 3.1, EO # 3.1.2.1
294001K102 294001K107 ...(KA'S)

ANSWER 8.03 (2.00)

a. Turn valve in closed direction (1/4 turn max to seat)
b. Turn valve in closed direction (1/4 turn max then return to open)
c. Verify at remote (or local) position indication
d. Confirm locking device operability (by attempting to move valve)
(0.5 each)

REFERENCE
EIH: SR-301, LP 3.1, EO # 3.1.3.3
294001K101 ...(KA'S)

ANSWERS -- HATCH 1&2 -87/04/20-KEETON, J.

ANSWER 8.04 (2.25)

a. General Manager or designee, i.e., Operations Manager, Plant Manager, Plant Support Manager, VP of Nuclear Operations, etc. (0.5)

b. 1. Formal contact for General Office, NRC, State or other organizations
2. Activate corporate response
3. Develop recovery and mitigation plans
4. Identify and coordinate supplemental resource requirements
5. Establish Security
6. Overall management of accident response
7. Protective action recommendations to State
8. Declare proper emergency classification
9. Close out or reduce emergency class
(Any other reasonable response equally acceptable.)
[Any 7 @ 0.25 pts each)

REFERENCE
EIH: SR-301, LP 3.2 EO #3.2.2.1 and 3.2.2.2
294001A116 ...(KA'S)

ANSWER 8.05 (1.50)

Deleted.

REFERENCE
Deleted.
294001K104 ...(KA'S)

ANSWER 8.06 (1.00)

The required isolation boundaries are identical [tags may be added within the boundaries if boundaries are identical]. (1.0)

REFERENCE
EIH: SR-301, LP 300.4, LO #C.8
294001K102 ...(KA'S)

ANSWER 8.07 (1.00)

Deleted.

ANSWERS -- HATCH 1&2 -87/04/20-KEETON, J.

REFERENCE
Deleted.
294001K103 ...(KA'S)

ANSWER 8.08 (1.00)

c. (1.0)

REFERENCE
Unit 1 Technical Specifications, 3.10.H, Basis
EIH: SR-301, LP 4.1
234000G001 234000G005 ...(KA'S)

ANSWER 8.09 (1.50)

Power Transient [will accept MCPR] (0.5).
The safety analyses have shown that scrams caused by exceeding safety limit settings will assure safety limits are not exceeded provided the scram time is within limits. (1.0)

REFERENCE
Unit 1 Technical Specifications, Bases 1.1.C
EIH: SR-301, LP 4.1, EO #4.1.1.1 and 4.1.1.2
201001G006 ...(KA'S)

ANSWER 8.10 (1.50)

1. Unit 1 has an additional Pressure Safety Limit involving the shutdown cooling mode. (0.5)
2. Unit 1 has an additional statement in the Power Transient Safety Limit concerning cause of reactor scram other than expected cause. (0.5)
3. Reactor Water levels are different. Unit 1 is above 378 " (-139.0) and Unit 2 is "above TAF (-164.44") (0.5)

REFERENCE
Unit 1 and Unit 2 Technical Specifications, Section 1.1
EIH:SR-301, LP 300.2, LO #2
295006G005 295025K105 295031G004 ...(KA'S)

ANSWERS -- HATCH 1&2 -87/04/20-KEETON, J.

ANSWER 8.11 (1.50)

1. Intent of the original procedure is not altered.
2. Change reviewed by 2 members of operating staff, one must be SRO on affected unit.
3. Change is documented, reviewed by PRB, and approved by GM or designee within 14 days of change.
(0.5 pts each)

REFERENCE
Unit 1 and 2 Technical Specifications, Section 6.8
GPC: 10AC-MGR-003-0S
EIH: SR-301, LP 300.3, LO #2
2180006001 ...(KA'S)

ANSWER 8.12 (2.00)

a. 1. < 95 degrees F - No time limit (0.5)
2. > 95 degrees F < 110 degrees F - 4 hours (0.5)
3. > 110 degrees F - 1 hr. or as determined by HP (0.5)
b. True. (0.5)

REFERENCE
GPC: 31GO-OPS-005-0S
EIH: SR-301, LP 300.4, LO #C.9
2230016001 ...(KA'S)

ANSWER 8.13 (2.50)

a. U-2 Shift Supervisor will report to fire as Brigade Chief if he is qualified; if not, U-1 SS will act as Chief. (1.0)
b. 5 (0.5)
c. 3 (0.5)
d. No. (0.5)

REFERENCE
GPC: 40AC-FPX-001
EIH: SR-301, LP 300.4, LO # D.10 and D.11
2940016\16 ...(KA'S)

ANSWERS -- WATCH 1&2 -87/04/20-KEETON, J.

ANSWER 8.14 (1.00)

a. The next surveillance will be due October 1 (or 92 days). (0.5)
b. The grace period is + 25% of the frequency not to exceed 3.25 for 3 consecutive surveillances. (0.5)

REFERENCE
Unit 2 Technical Specifications
GPC: 40AC-REG-001
EIH: SR-301, LP 300.4, LO # D.5
206000G005 ...(KA'S)

ANSWER 8.15 (2.00)

a. The EOC RPT trip is actuated if >30% power (0.34) on turbine trip (0.33) or load reject [TCV fast closure] (0.33).
b. This is to insure sufficient negative reactivity is added in conjunction with the control rods which will ensure thermal hydraulic limits (MCPR) are not exceeded (1.0).

REFERENCE
EIH: SR-201, LP 4.1, LO#7 and 12
202001K407 202001K413 ...(KA'S)

ANSWER 8.16 (1.00)

d. (1.0)

REFERENCE
EIH: U2 TS 3.3.1 & 3.3.2
272000D005 272000K402 ...(KA'S)

ANSWER 8.17 (.50)

5 (Refueling)

REFERENCE
EIH: U2 TS, Table 1.2
223002G005 ...(KA'S)

ANSWERS -- HATCH 1&2 -87/04/20-KEETON, J.

ANSWER 8.18 (1.00)

d. (1.0)

REFERENCE
EIH: U2 TS's, 3.5.4; Standing Order 84-35
2230028005 ...(KA'S)

QUESTION	VALUE	REFERENCE
05.01	1.00	KMJ0001077
05.02	2.00	KMJ0001078
05.03	1.50	KMJ0001079
05.04	1.00	KMJ0001080
05.05	1.00	KMJ0001081
05.06	1.50	KMJ0001082
05.07	2.00	KMJ0001083
05.08	1.00	KMJ0001084
05.09	1.50	KMJ0001085
05.10	2.00	KMJ0001086
05.11	1.00	KMJ0001087
05.12	2.50	KMJ0001088
05.13	1.50	KMJ0001089
05.14	1.00	KMJ0001090
05.15	2.00	KMJ0001091
05.16	1.00	KMJ0001092
05.17	2.50	KMJ0001139
	26.00	
06.01	1.50	KMJ0001093
06.02	2.00	KMJ0001094
06.03	1.00	KMJ0001095
06.04	2.00	KMJ0001096
06.05	.50	KMJ0001097
06.06	2.50	KMJ0001098
06.07	1.00	KMJ0001099
06.08	3.00	KMJ0001100
06.09	.50	KMJ0001101
06.10	2.00	KMJ0001102
06.11	1.50	KMJ0001103
06.12	2.00	KMJ0001104
06.13	1.50	KMJ0001105
06.14	1.00	KMJ0001106
06.15	2.50	KMJ0001107
06.16	1.00	KMJ0001140
	25.50	
07.01	1.50	KMJ0001108
07.02	2.00	KMJ0001109
07.03	.50	KMJ0001110
07.04	2.00	KMJ0001111
07.05	2.00	KMJ0001112
07.06	1.50	KMJ0001113
07.07	2.50	KMJ0001114
07.08	.50	KMJ0001115
07.09	2.00	KMJ0001116
07.10	2.00	KMJ0001117
07.11	1.00	KMJ0001118

QUESTION	VALUE	REFERENCE
07.12	1.50	KMJ0001119
07.13	1.00	KMJ0001120
07.14	2.50	KMJ0001121
07.15	1.00	KMJ0001122
07.16	1.50	KMJ0001123
07.17	2.00	KMJ0001131
	27.00	
08.01	2.00	KMJ0001124
08.02	1.00	KMJ0001125
08.03	2.00	KMJ0001126
08.04	2.25	KMJ0001127
~~08.05~~	~~1.50~~	~~KMJ0001128~~
08.06	1.00	KMJ0001129
~~08.07~~	~~1.00~~	~~KMJ0001130~~
08.08	1.00	KMJ0001132
08.09	1.50	KMJ0001133
08.10	1.50	KMJ0001134
08.11	1.50	KMJ0001135
08.12	2.00	KMJ0001136
08.13	2.50	KMJ0001137
08.14	1.00	KMJ0001138
08.15	2.00	KMJ0001141
08.16	1.00	KMJ0001142
08.17	.50	KMJ0001143
08.18	1.00	KMJ0001144
	26.25	
	104.75	

ENCLOSURE 3

PLANT E.I. HATCH
UTILITY COMMENTS
SENIOR OPERATOR LICENSE EXAMINATION
WRITTEN RESPONSE REQUESTED
APRIL 20, 1987

5.06 Utility Comment:

While the definition of the power coefficient is objective based, the stem of the question requires three responses per the key, the definition itself and the "a" and "b" parts. However, the question gives the appearance of a two part ("a" and "b") question; this is confusing and the examinee may not have realized that the definition is part of the required response.

Suggested Resolution:

If the grading process shows that this was a problem, consideration should be given to deleting the definition of power coefficient as a required response.

Reference:

GE BWR Academic Series, Reactor Theory, Chapter 4

5.11 Utility Comment:

Part b: This portion of the question is not supported by objectives. Additionally, the question statement may not elicit the desired response in that the justification for a TRUE answer in part "a" could be that Gadolinia has a larger absorption cross-section.

Suggested Resolution:

It is recommended that the "b" portion of the question be deleted.

Reference:

GE BWR Academic Series, Reactor Theory, Chapter 6

PLANT E. I. HATCH LICENSE EXAMINATION COMMENTS

5.15 Utility Comment:

Part a: This could be answered either TRUE or FALSE depending on the assumptions made. Mathematically it is TRUE.
Total Power = 2 x Individual Power. If two identical pumps are operating in parallel, the sum of their EQUAL powers will be the total power. However, if the assumption is made that the question is asking the KEY point, that for a GIVEN flow rate, it takes less power for two pumps in parallel than it does for one pump, the answer would be FALSE.

Suggested Resolution:

It is recommended that part "a" be deleted.

Reference:

GE BWR Academic Series, Heat Transfer and Fluid Flow, Chapter 6

7.04 Utility Comment:

Part b: The answer key is incorrect in that the procedure states: "shallow rods should not be inserted without a PRIOR REDUCTION of core flow > 10E6 lbm/hr", not "shallow rods should not be inserted WITH a core flow > 10E6 lbm/hr". Additionally, the response "If necessary to ... do so continuously." is a note, not a caution. Since the question asked for cautions (plural), the examinee may have answered with:

1. notes, or
2. notes and the only caution, or
3. the only caution listed in the procedure.

Suggested Resolution:

Part b: It is recommended the key be modified to require either notes or cautions, of which there are three in the 34AB-OPS-045 procedure, or require only the one caution for full credit. The key also needs to be corrected to correspond to the procedural caution.

Reference:

34AB-OPS-045-2S

7.09 Utility Comment:

This question requires a level of knowle ge of the procedure bordering on memorization which is inconsistent with performance based testing and the Plant Hatch philosophy regarding procedure memorization. The Abnormal Operating Procedures lesson plan as approved by the Managers of the Operations and the Training departments is attached. This lesson plan was developed based on the input of a consensus group consisting of subject matter experts, and training specialists. It was written to ensure the operators are sufficiently familiar with the abnormal procedures such that they can perform them without excessive burden on their memory.

Part A: Without explicitly stating the conditions in the TRUE or FALSE statement, incorrect assumptions are likely on the part of the examinee. In other words, the distractor as worded may not elicit the desired response.

Part B: Does not state the breakers that were tripped. This causes same problem as part A.

Part C: This requires memorization of SUBSEQUENT actions, which is inconsistent with performance based testing and the plant's philosophy regarding procedure memorization.

Part D: Same comments as part C.

Suggested Resolution

It is recommended that this question be deleted.

Reference:

34AB-OPS-055-2S, SO-OPS-04-1186

7.14 Utility Comment:

The question requires verbatim knowledge of subsequent operator actions, which have been determined by the Operations and Training departments to be an unnecessary burden on the operator's memory. Refer to question 7.09 comments.

Suggested Resolution:

It is recommended that this question be deleted.

Reference:

34AB-OPS-018-2S

8.01 Utility Comment:

The wording of the question is such that it implies the manning for each unit is that of the minimum shift manning for both units. This may lead to confusion as to the manning levels present at the beginning of the scenario. This will make it difficult for the examinee to determine the correct response.

Suggested Resolution:

It is recommended that parts A and D be deleted. Additionally, part B may have been affected by this problem. If during the grading this becomes apparent, part B should also be deleted.

Reference:

30AC-OPS-003-0S, U2 Tech Specs, LP 300.3

PLANT E. I. HATCH LICENSE EXAMINATION COMMENTS

8.02 Utility Comment:

Open Air Gap is normally thought of as disconnects used on a very high voltage. The 277 voltage maximum is found in 34SO-S22-001, 500 KV switchyard and is not mentioned in the clearance procedure. Additionally, the reference on the key is the Emergency actions lesson plan and deals with the location of the MET towers. The 300.4 lesson plan discusses clearances and switching orders and does not refer to or cover by objectives the topic of this question. This is not the terminology used to require racking out a 600 volt breaker. As such this question may not elicit the desired response. Lesson plans 300.4, Administrative Procedures, and 3.1, Emergency Actions are attached.

Suggested Resolution:

It is recommended that this question be deleted.

Reference:

34SO-S22-001, 30AC-OPS-001-OS

8.03 Utility Comment:
The key is incorrect. The procedure has been revised.

Suggested Resolution:
It is recommended the answer key be modified as follows:
Part b: Turn the valve in the closed direction no more than 1/4 turn and return to full open position.
Part c: The response "or local" should not be required for full credit.

References:
34GO-SUV-001-0S (attached)

8.04 Utility Comment:

Part A: The question of who will relieve the OSOS as ED could be answered in other ways. The designated alternate is the typical relief during ALL drills. The plant's philosophy is to relieve the OSOS as soon as possible to allow him to direct recovery actions in the control room (typically this is the TSC manager who is the manager of Operations).
Part B: The 73EP-EIP-004-0S procedure, Duties of Emergency Director (Attached) lists additional duties. These duties are correct responses, though they may be more specific than the broad categories listed on the key. There may be other reasonable duties not listed in the procedure or lesson materials that should be allowed for credit that would fall into the categories listed on the key. Additionally, the listing of duties of the ED rather than an application of the procedure may not be an appropriate application of performance based testing, and places an excessive burden on the examinee's memory.

Suggested Resolution:

It is recommended the key be modified as follows:.
Part A: The OSOS should assume Emergency Director (ED) responsibilities until relieved by:
Primary: Plant Manager (Harvey Nix)
1st Alt. Plant Support Manager (Dennis Read)
2nd Alt. Manager of Operations, (Lewis Sumner)
3rd Alt. Vice President of Nuclear Operations (Tom Beckham)
Accept any of the specific titles as an acceptable response for "designee".
Part B: It is recommended the key be modified to accept any of the additional duties listed in 73EP-EIP-004-0S for credit.

References:

73EP-EIP-004-0S

8.05 Utility Comment:

The question is inconsistent with performance based testing and is not covered by objectives. To test in this manner places an unwarranted burden on the operators memory and is not consistent with the nature of their job duties. The objectives referenced in the answer key deal with the restrictions placed on access to high radiation areas, not the specifics involved in the issuance of RWPs. To correctly answer the question, memorization of a flow chart in the procedure is required. For comments regarding procedure memorization see question 7.09 comments.

Suggested Resolution:

It is recommended that this question be deleted.

Reference:

60AC-HPX09-0

8.07 Utility Comment:

The question requires memorization of several pages of a matrix of reporting requirements of the 40AC-REG-002-0S procedure. See comments on procedure memorization for question 7.09. None of the choices provided fall under Operations department responsibility for reporting. Additionally, our objectives don't support identifying the type of report required without using the procedure for reference. Procedurally, the correct responses are identified as "immediate notifications" rather than "1 hour reports".

Suggested Resolution:

It is recommended that this question be deleted.

Reference:

40AC-REG-002-0S

PLANT E. I. HATCH LICENSE EXAMINATION COMMENTS

8.09 Utility Comment:

In section 3.11.C., the OLMCPR is stated to be a function of scram time. The basis for the OLMCPR also states that compliance with the OLMCPR will prevent violating the Tech Spec Safety Limit for MCPR. This demonstrates that MCPR would be an acceptable response.

Suggested Resolution:

It is recommended that the key also accept MCPR for full credit. Also, greater specificity as to the desired response would be preferred prior to usage on future exams.

Reference:
Unit 1 Tech Specs, 3.11.C., and 4.11.C.2.

8.12 Utility Comment:

These requirements should not need memorization, as HP and procedure will be referenced prior to this entry. The time and temperature limits are included in the lesson material for familiarization and are not identified as required by the objectives. The objective requires the use of the procedure to identify the abnormal (oxygen deficient atmosphere) entry requirements. As such, this test item does not meet the intent of the learning objective.

Part a: Does not specify the number of responses required.

Part b: The question may not elicit the desired response since the initial conditions were not specified. The one hour rest requirement only applies if the temperature is greater than 95 degrees.

Suggested Resolution:

It is recommended that the question be deleted.

Reference:

31GO-OPS-005-0S