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

Report Nos.: 50-335/94-300 and 50-389/94-300

Licensee: Florida Power and Light Company
9250 West Flagler Street
Miami, FL 33102

Docket Nos.: 50-335 and 50-389 License Nos.: DPR-67 and NPF-16

Facility Name: St. Lucie Plant Units 1 and 2

Inspection Conducted: October 17-24, 1994

Chief Examiner: Richard S. Baldwin 11/14/94
Richard S. Baldwin Date Signed

Examiners:
G. Hopper, NRC, Region II
M. Jones, Lockheed, Idaho
F. Jaeger, Lockheed, Idaho
P. Isaksen, Lockheed, Idaho

Approved by: Lawrence L. Lawyer 11/14/94
Lawrence L. Lawyer, Chief Date Signed
Operator Licensing Section
Operations Branch
Division of Reactor Safety

SUMMARY

Scope:

NRC examiners conducted regular, announced operator licensing initial examinations during the period of October 17-24, 1994. Examiners administered examinations under the guidelines of the Examiner Standards (ES), NUREG-1021, Revision 7. Nine Senior Reactor Operator (SRO) and two Reactor Operator (RO) candidates received written and operating examinations.

Results:

Candidate Pass/Fail:

	SRO	RO	Total	Percent
Pass	9	2	11	100%
Fail	0	0	0	0%

Examiners identified a weakness regarding crew communications (paragraph 2.b.1.(a)).

Examiners identified an inspector follow-up item regarding a weakness in removing a reactor coolant pump from service when reactor coolant system temperature decreases below 500° F (paragraph 2.b.1.(b)).

Examiners identified weaknesses in written examination operator knowledge (paragraph 2.b.3).

Examiners identified a weakness in procedural guidance (paragraphs 2.c.1 and 2.c.2).

No violations or deviations were identified.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

*K. Beatty, Manager, Nuclear Training/Juno Beach
*D. Borgmann, Instructor Operations Training
*C. Burton, Plant Manager
*C. Couture, RCO Program Lead Instructor
*M. Dryden, Licensing
*P. Fincher, Training Manager
*C. Marple, Operations
*D. Sager, Vice President, PSL
*J. Scarola, Operations Manager
*J. West, Services Manager

Other licensee employees contacted included instructors, engineers, technicians, operators, and office personnel.

NRC Personnel

*R. Baldwin, Chief Examiner
*M. Miller, Resident Inspector

*Attended exit interview

2. Discussion

a. Summary

NRC examiners conducted regular, announced operator licensing initial examinations during the period of October 17 through October 24, 1994. Examiners administered examinations under the guidelines of the Examiner Standards, NUREG-1021, Revision 7. The NRC administered initial licensing examinations to 11 applicants. Eight SRO upgrades, one SRO instant, and two RO license applicants received written examinations and operating tests. All of the applicants passed the written and operating examinations. The examiners concluded that the overall performance of the candidates was satisfactory. The examiners identified weaknesses in crew communications. The examiners identified an Inspector Follow-up Item (IFI) concerning securing reactor coolant pumps prior to 500° F in the reactor coolant system. The examiners identified knowledge weaknesses during the administration of the written examination. The examiners also identified two procedural discrepancies in an Emergency Operating Procedure (EOP) Appendix.

b. Candidate performance

The examiners evaluated the candidates' performance during simulator scenarios and job performance measures (JPMs) using the guidelines of NUREG-1021, "Examiner Standards," Revision 7, Supplement 1, and

concluded that the candidates performed satisfactorily. All candidates passed the simulator and walkthrough examinations. The candidates passed all 70 of the JPMs administered. The examiners analyzed the questions missed on the written examination and identified several areas of training weaknesses.

(1) Simulator Performance

(a) The examiners observed each applicant's performance in their assigned position during the performance of two or three scenarios depending upon the crew compliment. The applicants' communications were considered weak. The Senior Reactor Operators (SROs) did not provide sufficient control room updates of current plant conditions to the crew members. During two separate simulator scenarios in which a tube rupture occurred and ultimately resulted in a release of radioactivity to the environment, the SROs did not use the plant paging system to inform outside operators of the potential radiological hazard. During the performance of the Standard Post Trip Actions (SPTAs), the reactor operator performed the immediate operator actions from memory. The other reactor operator backed-up the first by using a copy of the procedure. The operator who was performing this back-up function did not provide sufficient information to the SRO on parameters that did not meet the required operating limits. A "snap shot" was taken at the time the parameter was monitored and did not provide trending information until the entire SPTA procedure was completed. The crews did not consistently announce starting and stopping major plant equipment during normal or abnormal conditions. Additionally, the crews did not announce reactor trips during the performance of simulator scenarios. The examiners identified these crew communications problems as a weakness.

(b) The examiners identified that only one of four crews was able to remove a reactor coolant pump (RCP) from service before the reactor coolant system temperature decreased below 500° F. In the scenarios observed, the candidates received compound casualties in which the RCS temperature decreased below 500° F before the candidates received procedural guidance for removal of a RCP from service. This issue was previously addressed in NRC Inspection Report 55-335/93-301. NRC

examiners identified this item for follow up as Inspector Follow-up Item (IFI) 50-335 and 50-389/94-300-01, procedures do not provide information on securing RCPs before the reactor coolant system temperature decreases below 500° F.

(c) The examiners noted that the facilities self-checking program, the STOP program, was evident during the performance of the simulator and walkthrough examinations. There were no mistakes made by candidates during the operating examination. It was evident that the STOP program was working satisfactorily.

(d) The examiners identified that, during the performance of simulator scenarios, operators consistently placed the Intake Cooling Water (ICW) pumps in pull-to-lock when energizing emergency buses during recovery from a loss of offsite power. This action was not addressed by plant emergency procedures. Additionally, the examiners identified a step in an EOP Appendix that erroneously contained two action steps. Refer to paragraphs 2.c.1 and 2.c.2 for details on these procedures.

(2) Walkthrough Examinations

The examiners evaluated the candidates' performance during the walkthrough examinations using the guidelines of NUREG-1021, "Examiner Standards," Revision 7, Supplement 1, and determined it was satisfactory. The candidates passed all of the 70 JPMs administered. The examiners identified that the candidates had a good knowledge of plant equipment location as well as use of health physics survey area maps during the performance of the walkthrough examination.

(3) Written Examination

The candidates' scores on the written examination ranged from 80.8 percent to 93.9 percent. The average score was 86.8. The examiners reviewed all questions missed by more than 50 percent of the candidates. Based upon this review of missed questions, the examiners identified 1 question (SRO # 59) that did not have a correct answer and 10 knowledge area weaknesses. Question SRO # 59 was deleted from the SRO examination. Details of the weaknesses and the associated questions are provided below.

(a) Question RO-009/SRO-012

This question dealt with entries in the Jumper/Lifted Lead Log. Two of two RO candidates and two of nine SRO candidates missed this question with all of them selecting "c" as the answer. The examiners concluded that a knowledge weakness was indicated by the RO candidates relating to lesson plan 0702841, "Administrative Procedures/Quality Instructions," Revision 9, Enabling Objectives 13 and 14.

(b) Question RO-030/SRO-029

This question dealt with the Technical Specification basis for Unit 2 Condensate Storage Tank volume for the auxiliary feed water system. Two of two RO candidates and five of nine SRO candidates missed this question with all of them selecting "a" as the answer. The examiners concluded that a knowledge weakness existed for candidates relating to lesson plan 0702412, "Auxiliary Feedwater System and AFAS," Revision 5, Enabling Objective 2.d.

(c) Question RO-034/SRO-033

This question dealt with the Technical Specification requirements for containment depressurization and cooling systems on Unit 1 in Mode 1. Two of two RO candidates and five of nine SRO candidates missed this question with the five SRO candidates selecting "b" as the answer. The examiners concluded that a knowledge weakness existed for the candidates relating to lesson plan 0702207, "Emergency Core Cooling and Containment Heat Removal Systems," Revision 10, Enabling Objectives 14 and 18.

(d) Question RO-045/SRO-041

This question dealt with what pump is required on Unit 2 to fill Safety Injection Tanks (SITs). One of two RO candidates and five of nine SRO candidates missed this question with five of them selecting "d" as the answer. The examiners concluded that a knowledge weakness existed relating to lesson plan "Emergency Core Cooling and Containment Heat Removal Systems," Revision 10, Enabling Objectives 4.e and 11.d.

(e) Question RO-047/SRO-043

This question dealt with reactor trip signals that are equipment protective trips and not required for reactor protection. Two of two RO candidates and four of nine SRO candidates missed this question with six of them selecting "a" as the answer. The examiners concluded that a knowledge weakness existed relating to lesson plan 0702404, "Reactor Protection System," Revision 5, Enabling Objective 2.c.

(f) Question RO-063/SRO-055

This question dealt with the main generator protective features that open the main generator output breakers but not the auxiliary transformer breakers. One of two RO candidates and six of nine SRO candidates missed this question with six of them selecting "a" as the answer. The examiners concluded that a knowledge weakness existed relating to lesson plan 0702307, "Main Generator and Control," Revision 6, Enabling Objectives 9.c, 9.d, 10, and 12.

(g) Question RO-065/SRO-057

This question dealt with the development of the reactor trip quick open signal of the Steam Bypass and Control system. Six of nine SRO candidates missed this question with five of them selecting "d" as the answer. The examiners concluded that a knowledge weakness existed relating to lesson plan 0702406, "Steam Bypass and Control System," Revision 4, Enabling Objective 4.b.

(h) Question SRO-059

This question dealt with required LPCI flow in accordance with 2-EOP-099, Figure 2. The examiners reviewed this question and determined that there is no correct answer provided. This question was reworded during the pre-examination review at the request of the facility in order to provide the necessary plant conditions. Since there was no correct answer for the conditions provided, this question was deleted from the examination for the SRO candidates and the examination total point value adjusted. This question was not commented on by the facility following the post-examination review.

(i) Question RO-077/SRO-078

This question dealt with the basis for boration during a plant cooldown with excessive reactor coolant system activity. Two of two RO candidates and three of nine SRO candidates missed this question with all the candidates selecting "d" as the answer. The examiners concluded that a knowledge weakness existed relating to lesson plan 0702812, "Off-Normal Procedures and ARPS," Revision 7, Enabling Objective 5.

(j) Question RO-092/SRO-092

The question dealt with the loss of a electrical bus and with the action that prevents shutdown cooling from being placed in service on Unit 1. Two of two RO candidates and five of nine SRO candidates missed this question with 6 of the candidates selecting answer "b" as the answer. The examiners concluded that a knowledge weakness existed relating to lesson plan 0702207, "Emergency Core Cooling and Containment Heat Removal Systems," Enabling Objective 5.a.

(k) Question RO-096/SRO-096

This question dealt with methods for cooling down and depressurizing an isolated Steam Generator on Unit 1. Two of two RO candidates and six of nine SRO candidates missed this question with six of them selecting "d" as the answer. The examiners concluded that a knowledge weakness existed relating to lesson plan 0702812, "Off-Normal Procedures and ARPS," Revision 7, Enabling Objectives 5 and 41.d.

c. Procedural Deficiencies

The examiners reviewed procedures during the examination preparation week and observed the candidates use of procedures during simulator and JPM evaluations. The examiners identified one procedure that did not provide all the information needed to address re-energization of the vital electrical buses. In addition, the examiners identified one EOP step that erroneously contained two action steps.

(1) 2-EOP-99, "Appendices/Figures/Tables," Revision 9, Appendix D "Power Restoration Loss of Offsite Power," did not contain the intended ICW pump status when returning power to buses 2A3 or 2B3 when offsite power was available. During the performance of simulator scenarios, all of the crews placed

the ICW pumps in pull-to-lock (PTL) without procedural guidance. The examiners questioned the candidates as to why they performed this action. The candidates stated that there was a potential water hammer concern when re-energizing the buses with the ICW pumps not in PTL. The crews also stated that since offsite power was restored in a short period of time it was important to re-energize the bus due to the core melt situation presented in the scenario. The crews stated there was insufficient time to send an auxiliary operator to open the discharge valve 10 turns as required by the system operating procedure. By placing the ICW pumps in PTL, the crew could return power to the bus expeditiously and not place the ICW system in a potential compromise. The ICW piping concern was attributed to an ICW system rupture that occurred in the late 1970s.

The examiners questioned the operations department about the procedural adequacy of 2-EOP-99, Appendix D. The licensee performed an engineering deposition (STAR # 0-94100266) to determine the transient analysis effects of restarting the ICW pumps for time periods greater than 22 seconds during a loss of offsite power. This analysis determined that system integrity would not be affected if the ICW pumps were not placed in PTL on the loss of offsite power provided the check valves installed at the discharge of the ICW pump met the original design leakage criteria. However, the facility determined that placing the ICW pumps in PTL would be a conservative approach. The licensee issued Revision 10 to 2-EOP-99 Appendix D on October 27, 1994, to incorporate this conservative approach concerning the ICW pumps. The examiners reviewed Revision 10 and found it to address the ICW pump concerns.

(2) The examiners identified 2-EOP-99, "Appendices/Figures/ Tables," Revision 9, Appendix D "Power Restoration Loss of Offsite Power," Step 1.A, as a procedural step containing two action steps. The examiners determined that this was not an acceptable practice in accordance with QI 5-PR/PSL-2, "Writers Guide for Emergency Operating Procedures," Revision 16, Step 4.1.A. Step 4.1.A requires that each instruction step should deal with only one idea. The licensee issued Revision 10 to 2-EOP-99, Appendix D on October 27, 1994, which eliminated the two action steps in step 1.A. The examiners reviewed Revision 10 of 2-EOP-99, Appendix D, and found that the change addressed the examiners concerns.

d. Examination Reference Material

The examiners determined that the lesson plans provided with the examination material were adequate to support the examination. However, during the pre-examination review, the licensee's training instructor pointed out two cases of inaccuracies in the plants training material. The facility is reminded that current information concerning current plant configuration is important for precise examination development as well as prevention of wasting valuable resources and time required to correct inadequate materials. An example of this concerns the three sources of air to the Unit 1 main steam isolation valves. One of the sources is a compressor that is no longer used; however, the compressor is still installed in the plant.

e. Simulation Facility

The examiners identified a problem with the simulation facility during the preparation week. During a large break loss of coolant accident (LOCA) with only one high pressure safety injection (HPSI) pump available, core water level would reflood within minutes to a level of eight and then seven on the reactor vessel water level system (RVLIS). The system is not designed to accomplish this with only one HPSI pump running. A discrepancy report was written by the licensee. This problem was transparent to the candidates during the administration of the scenario.

3. Exit Interview

At the conclusion of the site visit, the examiners met with representatives of the plant staff listed in paragraph 1 to discuss the results of the examinations and inspection findings. The licensee did not identify as proprietary any material provided to, or reviewed by the examiners. The examiners further discussed in detail the inspection finding(s) listed below. Dissenting comments were not received from the licensee.

Item Number	Description and Reference
IFI 50-335 and 50-389/94-300-01	Inspector follow-up item regarding, procedures do not provide information on securing RCPs before the reactor coolant system temperature decreases below 500° F. (paragraph 2.b.1.(b)).

SIMULATOR FACILITY REPORT

Docket Nos.: DPR-67 and NPF-16

License Nos.: 50-250 and 50-251

Examination Conducted: October 17-24, 1994

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

While conducting the simulator portion of the operating tests, the following items were observed (if none, so state):

ITEM	DESCRIPTION
Core reflooded during LOCA with only one HPSI pump available.	During a large break LOCA scenario, the core was able to be reflooded with only one HPSI pump available. Core level returned to RVLIS level 8 and 7 subsequently within minutes of the large break LOCA occurring.

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Operator Licensing
Examination

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

CANDIDATE'S NAME: _____

FACILITY: St Lucie 1 & 2

REACTOR TYPE: PWR-CE

DATE ADMINISTERED: 94/10/17

INSTRUCTIONS TO CANDIDATE:

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

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

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

_____
Candidate's Signature

A N S W E R S H E E T

Multiple Choice (Circle or X your choice)

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

MULTIPLE CHOICE

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

A N S W E R S H E E T

Multiple Choice (Circle or X your choice)

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

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

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 ___

MULTIPLE CHOICE

092 a b c d ___

093 a b c d ___

094 a b c d ___

095 a b c d ___

096 a b c d ___

097 a b c d ___

098 a b c d ___

099 a b c d ___

100 a b c d ___

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

NRC RULES AND GUIDELINES FOR LICENSE EXAMINATIONS

During the administration of this examination the following rules apply:

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

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

3. Restroom trips are to be limited and only one applicant at a time may leave. You must avoid all contacts with anyone outside the examination room to avoid even the appearance or possibility of cheating.

4. Use black ink or dark pencil ONLY to facilitate legible reproductions.

5. Print your name in the blank provided in the upper right-hand corner of the examination cover sheet and each answer sheet.

6. Mark your answers on the answer sheet provided. USE ONLY THE PAPER PROVIDED AND DO NOT WRITE ON THE BACK SIDE OF THE PAGE.

7. Before you turn in your examination, consecutively number each answer sheet, including any additional pages inserted when writing your answers on the examination question page.

8. Use abbreviations only if they are commonly used in facility literature. Avoid using symbols such as < or > signs to avoid a simple transposition error resulting in an incorrect answer. Write it out.

9. The point value for each question is indicated in parentheses after the question.

10. Show all calculations, methods, or assumptions used to obtain an answer to any short answer questions.

11. Partial credit may be given except on multiple choice questions. Therefore, ANSWER ALL PARTS OF THE QUESTION AND DO NOT LEAVE ANY ANSWER BLANK.

12. Proportional grading will be applied. Any additional wrong information that is provided may count against you. For example, if a question is worth one point and asks for four responses, each of which is worth 0.25 points, and you give five responses, each of your responses will be worth 0.20 points. If one of your five responses is incorrect, 0.20 will be deducted and your total credit for that question will be 0.80 instead of 1.00 even though you got the four correct answers.

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

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

15. Ensure all information you wish to have evaluated as part of your answer is on your answer sheet. Scrap paper will be disposed of immediately following the examination.

16. To pass the examination, you must achieve a grade of 80% or greater.

17. There is a time limit of four (4) hours for completion of the examination.

18. When you are done and have turned in your examination, leave the examination area (EXAMINER WILL DEFINE THE AREA). If you are found in this area while the examination is still in progress, your license may be denied or revoked.

QUESTION: 001 (1.00)

Given the following plant conditions:

- CEAs are being withdrawn for startup.
- A stable startup rate of one decade per minute is being maintained.
- Tavg is 513 degrees F.

Which ONE of the following states the action required according to Technical Specification 3.1.1.5, "Minimum Temperature For Criticality"?

Tavg is required to be restored to greater than or equal to:

a. 515 degrees F within one hour or be in HOT STANDBY within the next hour.

b. 532 degrees F within one hour or be in HOT STANDBY within the next hour.

c. 515 degrees F within 15 minutes or be in HOT STANDBY within the next 15 minutes.

d. 532 degrees F within 15 minutes or be in HOT STANDBY within the next 15 minutes.

QUESTION: 002 (1.00)

Which ONE of the following is the definition of a HIGH RADIATION AREA?

An area where a person could receive in one hour, a dose between:

a. 5 mRem and 100 mRem.

b. 100 mRem and 1000mRem.

c. 1000 mRem and 500 Rads.

d. 500 Rads and 1000 Rads.

QUESTION: 003 (1.00)

Which ONE of the following is a valid reason that the "Operator at the Controls" for Unit 2 may cross over the line while remaining in the control room?

a. Using the bathroom.

b. Checking the shift logs in the NWE's office.

c. Finding the status of a clearance.

d. Verifying receipt of an annunciator on a back panel.

QUESTION: 004 (1.00)

A freeze seal is being used on piping as a clearance point to allow maintenance downstream of the seal.

Which ONE of the following would the Operations Department be required to do once the freeze seal is in place?

a. Drain the downstream piping to ensure the plug is holding.

b. Monitor the pipe temperature to ensure that it is adequate to maintain the freeze seal.

c. CAUTION TAG any equipment associated with the piping piece to prevent use of that equipment.

d. Provide an individual stationed at the nearest isolation valve to CLOSE the valve in the event the freeze seal fails.

QUESTION: 005 (1.00)

Which ONE of the following describes the sound made by the SITE EVACUATION alarm?

a. Warble tone of variable frequency

b. Periodic yelping tone

c. Steady buzzer tone

d. Siren tone

QUESTION: 006 (1.00)

The Unit 2 SNPO has racked out the breaker for 2A CCW Pump.

Which ONE of the following states the minimum qualifications required for the individual performing the Independent Verification of this evolution?

a. Nuclear Plant Operator

b. Senior Nuclear Plant Operator

c. Licensed Reactor Operator

d. Licensed Senior Reactor Operator

QUESTION: 007 (1.00)

Which ONE of the following conditions is required for a clearance holder to release a clearance?

a. The system has been tested to the extent that it is evaluated safe to be released.

b. All clearances have been properly released.

c. All tags have been removed and valves, switches, etc., are in their required position.

d. All related maintenance work has been completed.

QUESTION: 008 (1.00)

Which ONE of the following departments can place Caution Tags on installed in-plant equipment according to AP 0010135, "Caution Tag Clearance Procedure"?

a. Mechanical Maintenance

b. Health Physics

c. Electrical Maintenance

d. Chemistry

QUESTION: 009 (1.00)

Which ONE of the following situations would require an entry in the Jumper/Lifted Lead Log?

a. Connecting cables from a 480v Motor Control Center (MCC) to a temporary power panel for outage maintenance support.

b. Maintenance technicians installing a temporary drain hose to support changing oil on a pump.

c. Performing a channel calibration procedure which requires installing jumpers to electrically bypass automatic actuation.

d. Physically removing a Sigma for repair under an approved Nuclear Plant Work Order (NPWO).

QUESTION: 010 (1.00)

Given the following Unit 1 plant conditions:

- The plant is operating at 50% power.

Which ONE of the following positions could be vacant for three (3) hours WITHOUT resulting in a Shift Staffing violation?

a. Desk Reactor Control Operator

b. Fire Brigade Team Leader

c. On-Shift Chemistry Technician

d. Shift Technical Advisor

QUESTION: 011 (1.00)

Which ONE of the following logs is the Assistant Nuclear Plant Supervisor (ANPS) responsible for maintaining?

a. Disconnected Lead and Temporary Jumper Log

b. Chronological Log

c. Equipment Out-of-Service Log

d. Equipment Clearance Order Log

QUESTION: 012 (1.00)

Which ONE of the following states the reason Component Cooling Water (CCW) to the Reactor Coolant Pumps (RCPs) is NOT to be restored following a Safety Injection Actuation Signal (SIAS) while in EOP-1, "Standard Post Trip Actions"?

a. Instrument Air to Containment is no longer available to open the valves.

b. Override capability is not available for these valves if closed by SIAS.

c. Causes thermal shock to the RCP seals if done too soon after being lost.

d. Overrides a safeguard signal prior to diagnosing the event.

QUESTION: 013 (1.00)

Which ONE of the following is the first backup method for notification of the State Warning Point in the event the State Hot Ring Down has failed?

a. FTS 2000 - Federal Telecommunications System

b. NAWAS - National Warning System

c. LGR - Local Government Radio System

d. Bell - Commercial Phone System

QUESTION: 014 (1.00)

During Mode 1 operation, while researching a group of Plant Work Orders (PWO's), a mechanical maintenance department foreman requests that a mechanic be allowed to stroke test Boric Acid Gravity Feed valve (V-2508) to determine if the line is rocked up.

Which ONE of the following states the response of the operations department?

a. Prohibit the mechanic from operating the valve since non-operations manipulations of sensitive equipment must have prior Facility Review Group (FRG) review and Plant Manager approval.

b. Let the mechanic operate the valve as long as the control room operators are notified when the stroke test is complete.

c. Prohibit the mechanic from operating the valve since only licensed personnel can operate it.

d. Let the mechanic operate the valve as long as the control room operators are informed as to how long the valve is open so they can track primary water additions.

QUESTION: 015 (1.00)

During a plant heatup to HOT STANDBY conditions, the RCS temperature must be above 500 degrees F before all FOUR RCPs can be operated simultaneously.

Which ONE of the following states the basis for this requirement?

a. Thermal-hydraulic forces can cause fuel assemblies to lift or become unseated.

b. The pressure surge from starting the RCP can cause Pressurized Thermal Shock to occur.

c. The RCP can draw motor amperage exceeding the nameplate data since water density is higher.

d. Allowable RCS pressure is too low to ensure adequate Net Positive Suction Head for the RCPs.

QUESTION: 016 (1.00)

Which ONE of the following Nuclear Instrumentation failures, occurring on Unit 1, will generate a Boron Dilution Monitor alarm?

a. Logarithmic Startup Channel.

b. Linear Power Range Safety Channel.

c. Wide-Range Logarithmic Safety Channel.

d. Excore Neutron Monitoring System Channel.

QUESTION: 017 (1.00)

A failure in the Steam Generator Water Level Control system has caused the Main Feed Regulation valve to receive a constant full open demand.

Which ONE of the following states the condition that will provide a backup signal to close the Main Feed Regulation valve when Steam Generator level reaches the "High-High" level setpoint?

a. 15% Bypass Valves going to the 5% flow position.

b. 100% Bypass Valves going closed.

c. Main Feed Pumps tripping.

d. Turbine tripping.

QUESTION: 018 (1.00)

Which ONE of the following is the indication used by the operator to verify an AFAS signal may be ready to reset?

a. The initiation relay "INT" lights extinguish.

b. 1C AFW pump runs back to idle speed.

c. AFAS RESET PERMISSIVE annunciator actuates.

d. The AFW cycling valves go closed.

QUESTION: 019 (1.00)

Which ONE of the following describes all the monitor channels located on the Unit 2 Radiation Monitoring System RM-23 panel?

a. Area radiation monitors.

b. Process radiation monitors.

c. Safety-related monitors.

d. Technical Specification monitors.

QUESTION: 020 (1.00)

The Steady State Band for Axial Shape Index (ASI) is wider than the Transient Band.

Which ONE of the following states the basis for providing this wider band?

a. Minimize reactor power reductions for xenon oscillations which cannot be maintained via CEA movement.

b. Allow more time for analyzing corrective actions for divergent xenon oscillations.

c. Minimize waste accumulation from borations and dilutions required for ASI control.

d. Allow minor variations in ASI thus requiring less frequent CEA movements.

QUESTION: 021 (1.00)

Which ONE of the following would indicate a Charging Line break on the inlet to the Regenerative Heat Exchanger?

a. Regenerative Heat Exchanger Outlet Temperature

b. Letdown Ion Exchanger Bypass on High Temperature

c. Regenerative Heat Exchanger Differential Pressure

d. Charging Header Flow

QUESTION: 022 (1.00)

Which ONE of the following conditions would be indicated by the Reactor Coolant Pump control switch "amber" lamp being illuminated?

a. Breaker is racked out.

b. Lift Oil Pressure is adequate.

c. Breaker is locked out on electrical fault.

d. Component Cooling Water flow is insufficient.

QUESTION: 023 (1.00)

Which ONE of the following conditions will cause the Unit 1 RCP Seal Cooler Outlet Isolation Valve (HCV-14-11-A1) to automatically close?

a. A loss of Air Supply with hand switch in the Auto position.

b. The handswitch in Auto with an SIAS signal present.

c. The handswitch in Auto with a cooler outlet temperature of greater than 200 degrees F.

d. A loss of electrical power with the handswitch in the Open/Reset position.

QUESTION: 024 (1.00)

Which ONE of the following states the reason hydrogen is added to the Volume Control Tank?

a. Volume Control Tank inerting.

b. Oxygen scavenging prior to plant heatup.

c. Reactor Coolant System pH control.

d. Oxygen scavenging during normal operations.

QUESTION: 025 (1.00)

Which ONE of the following actions would the operator take to place an Engineered Safety Features Actuation System (ESFAS) channel in BYPASS?

a. Remove ONE isolation module.

b. Remove TWO isolation modules.

c. Operate ONE bypass key switch.

d. Operate TWO bypass key switches.

QUESTION: 026 (1.00)

Which ONE of the following Engineered Safety Features Actuation System signals output relays ENERGIZE to actuate?

a. MSIS (Main Steam Isolation Signal)

b. SIAS (Safety Injection Actuation Signal)

c. CSAS (Containment Spray Actuation Signal)

d. CIAS (Containment Isolation Actuation Signal)

QUESTION: 027 (1.00)

Which ONE of the following states the effect on most components, which can be actuated by the Engineered Safety Features Actuation System (ESFAS), when their NORMAL/ISOLATE switches are placed in ISOLATE?

a. ESFAS functions are rendered inoperable.

b. Actuation logic is reduced to 1-out-of-2.

c. Components actuate to their accident positions.

d. Pumps/fans start and valves/dampers function normally.

QUESTION: 028 (1.00)

Which ONE of the following indications would appear on the Qualified Safety Parameter Display System (QSPDS) for an "OUT-OF-RANGE/BAD DATA" alarm?

Parameter:

a. field filled with asterisks in the inverse mode.

b. field filled with question marks in the inverse mode.

c. value displayed with a single adjacent asterisk in the inverse mode.

d. value displayed with a single adjacent question mark in the inverse mode.

QUESTION: 029 (1.00)

Which ONE of the following pair of Auxiliary Feed Water (AFW) components is "CYCLED" at RESET point levels by an Auxiliary Feedwater Actuation Signal (AFAS)?

a. AFW pumps 1A & 1B and pump 1C trip throttle valve.

b. Unit 2 AFW solenoids and pump 2C trip throttle valve.

c. Unit 1 AFW MOVs and Unit 2 AFW MOVs.

d. AFW pumps 2A & 2B and Unit 1 AFW MOVs.

QUESTION: 030 (1.00)

Which ONE of the following states the Technical Specification basis for Unit 2 Condensate Storage Tank water volume availability for Auxiliary Feed Water (AFW)?

Sufficient to maintain the Reactor Coolant System at HOT STANDBY for:

a. 4 hours followed by an orderly cooldown to 325 degrees F.

b. 4 hours followed by an orderly cooldown to 350 degrees F.

c. 8 hours followed by an orderly cooldown to 325 degrees F.

d. 8 hours followed by an orderly cooldown to 350 degrees F.

QUESTION: 031 (1.00)

Which ONE of the following Auxiliary Feed Water valves is powered from the "A" 125V DC Bus?

a. Unit 1 "B" Steam Stop Valve (MV-08-14)

b. Unit 2 "B" Steam Stop Valve (MV-08-13)

c. Unit 1 Trip and Throttle Valve (MV-08-03)

d. Unit 2 Trip and Throttle Valve (MV-08-03)

QUESTION: 032 (1.00)

Which ONE of the following actions, performed to transfer to the "C" Condensate pump, actuates the solenoid key release and powers the "OK To Transfer" light at the transfer cubicle?

a. Removal of Trip fuses.

b. Removal of Close fuses.

c. Racking out of breaker.

d. Reinsertion of Trip fuses.

QUESTION: 033 (1.00)

Which ONE of the following Main Feed Water Isolation Valve (MFIV) closures can be overridden?

a. Unit 1 Main Steam Isolation Signal

b. Unit 1 Safety Injection Actuation Signal

c. Unit 2 Main Steam Isolation Signal

d. Unit 2 Auxiliary Feedwater Actuation Signal

QUESTION: 034 (1.00)

Which ONE of the following states the required combinations to meet the Technical Specification Limiting Conditions For Operation for Containment Depressurization And Cooling Systems on Unit 1 in MODE 1?

a. 2 Containment Spray and 4 Containment Fan Coolers

b. 1 Containment Spray and 4 Containment Fan Coolers

c. 2 Containment Spray and 3 Containment Fan Coolers

d. 1 Containment Spray and 3 Containment Fan Coolers

QUESTION: 035 (1.00)

Which ONE of the following states the interlock condition that will close the Waste Gas Release Valve (V6565) while discharging a Waste Gas Decay Tank?

a. Less than TWO Auxiliary Building Main Supply Fans operating.

b. Only ONE Auxiliary Building Main Exhaust Fan operating.

c. No Auxiliary Building Main Exhaust Fan operating.

d. Any Auxiliary Building Main Supply Fan operating.

QUESTION: 036 (1.00)

Which ONE of the following Nuclear Instrumentation Channels uses an uncompensated ion chamber for a detector?

a. Wide-Range Logarithmic Safety Channel

b. Logarithmic Startup Channel

c. Excore Neutron Monitoring System Channel

d. Linear-Power-Range Safety Channel

QUESTION: 037 (1.00)

Which ONE of the following conditions will cause the excore neutron detectors output to increase following a Reactor Trip?

a. Reactor core uncovery during a large break Loss Of Coolant Accident (LOCA).

b. Operating Reactor Coolant Pumps (RCPs) with the reactor vessel upper head voided.

c. Safety Injection flow into the Reactor Coolant System following a Steam Generator Tube Rupture (SGTR).

d. Reactor Coolant System cooldown and depressurization resulting from an unisolable Main Steam Line Break (MSLB).

QUESTION: 038 (1.00)

The Unit 2 RCS has been cooled down using procedure OP 2-0030127, "Reactor Plant Cooldown - Hot Standby To Cold Shutdown". The RCO has placed LTOP in service when annunciator H-47, LTOP CHNL B TRANSIENT comes in.

Which ONE of the following is the cause of this annunciator?

a. RCS temperature below setpoint and PORV mode selector in NORMAL.

b. Pressurizer pressure above setpoint and PORV mode selector in NORMAL.

c. RCS temperature below setpoint and PORV mode selector in LTOP.

d. Pressurizer pressure above setpoint and PORV mode selector in LTOP.

QUESTION: 039 (1.00)

Which ONE of the following parameters is used to detect Reactor Vessel Flange inner seal leakage?

a. Temperature

b. Pressure

c. Level

d. Flow

QUESTION: 040 (1.00)

Which ONE of the following states the reason why identifying which PORV is leaking is more easily done on Unit 2 than on Unit 1?

Unit 2 has individual:

a. light indication for high pressure in the piping downstream of each PORV.

b. acoustic monitor indication for piping downstream of each PORV.

c. temperature indication for the piping downstream of each PORV.

d. solenoid auxiliary contact indicating lamps.

QUESTION: 041 (1.00)

Which ONE of the following states how TWO Instrument AC Buses (1MB, 1MD) are prevented from being fed simultaneously from the same Maintenance Bypass Bus on Unit 1?

a. Each Instrument AC Inverter has its own bypass power supply.

b. Each Maintenance Bypass Bus has a mechanical interlock between the power supply breakers.

c. Each Bypass Transfer Panel has an electrical interlock which prevents the closure of BOTH Transfer Switches.

d. There is a SINGLE Transfer Switch to select ONE of the TWO Instrument AC Buses to be supplied from bypass power.

QUESTION: 042 (1.00)

Which ONE of the following statements describes operation of the Main Steam Isolation Valves (MSIVs)?

a. Unit 1 MSIVs get a Safety Injection Actuation Signal (SIAS) to close on High Containment Pressure.

b. Unit 2 MSIVs get a Main Steam Isolation Signal (MSIS) to close on High Containment Pressure.

c. Unit 1 MSIVs fail closed on loss of ALL electrical power to the valves.

d. Unit 2 MSIVs fail open on loss of ALL instrument air to the valves.

QUESTION: 043 (1.00)

Which ONE of the following system functions continues to operate after controls are transferred to the Hot Shutdown Control Panel on Unit 2?

a. Diesel Generator start on loss of 4.16 KV bus voltage.

b. Standby Charging pumps backup stop signal.

c. AFW pump 2A auto start on low Steam Generator level.

d. Low Pressurizer level heater cutout.

QUESTION: 044 (1.00)

Which ONE of the following colors does a Process Radiation Monitor, indicated on the Radiation Monitoring Computer (PC-11), change to for a "LOSS OF COMMUNICATIONS"?

a. White

b. Magenta

c. Dark Blue

d. Light Blue (Cyan)

QUESTION: 045 (1.00)

Given the following Unit 2 plant conditions:

- All Safety Injection Tanks (SITs) have been depressurized to less than 40 psig.
- Shutdown Cooling is in service with LPSI pump A
- Pressurizer is solid.
- Reactor Coolant System is at 98 degrees F.
- SIT 2A2 is LOW and needs filling in preparation for plant heatup.

Which ONE of the following pumps will be used to fill SIT 2A2?

a. HPSI A

b. HPSI B

c. LPSI A

d. LPSI B

QUESTION: 046 (1.00)

Which ONE of the following describes the status of the power supply to the Safety Injection Tank (SIT) Discharge Valves during Reactor Coolant System Fill and Vent?

a. De-energized to minimize motor heating and prolong motor life since valve does not have to function while filling the RCS.

b. Energized to provide emergency boration source in case of a dilution event while filling the RCS.

c. De-energized to preclude spurious operation during pressure changes while venting the RCS.

d. Energized to allow utilizing the SIT inventory for faster filling of the RCS.

QUESTION: 047 (1.00)

Which ONE of the following Reactor Trip signals is an "equipment protective trip" and NOT required for Reactor Protection?

a. Steam Generator Water Level

b. Rate Of Change Of Power

c. Reactor Coolant Flow

d. Containment Pressure

QUESTION: 048 (1.00)

The Asymmetric Steam Generator Transient Protective Trip Function (ASGTPTF) is provided primarily to protect against a slow closure of a single Main Steam Isolation Valve.

Which ONE of the following parameters is used to generate this trip?

a. Valve Position

b. Temperature

c. Pressure

d. Flow

QUESTION: 049 (1.00)

A Reactor Trip signal is sent to the Turbine Auto-Stop Trip solenoid (20 AST) and the Emergency Trip solenoid (20 ET).

Which ONE of the following describes the source of this trip signal?

a. Engineered Safety Features Actuation System

b. Reactor Trip Circuit Breakers Undervoltage Trip Coils

c. Reactor Trip Circuit Breakers Shunt Trip Coils

d. Control Element Drive Mechanism Power Buses Undervoltage Relays

QUESTION: 050 (1.00)

Which ONE of the following Reactor Coolant Loop RTDs failing could be corrected by switching to another RTD without having to switch Reactor Regulating System cabinets?

a. Unit 1 Thot

b. Unit 2 Thot

c. Unit 1 Tcold

d. Unit 2 Tcold

QUESTION: 051 (1.00)

Which ONE of the following states the function of the Turbine First Stage Pressure input to the Reactor Regulating System?

a. Calculation of Steam Bypass Control System Reference Temperature.

b. Calculation of Reactor Coolant System Reference Temperature.

c. Calculation of Pressurizer Level setpoint.

d. Provide for Turbine Runback termination.

QUESTION: 052 (1.00)

Which ONE of the following describes the limits established in Technical Specifications for Steam Generator (SG) primary-to-secondary leakage?

a. Unit 1 has a limit on total leakage through BOTH SGs and a limit on leakage through any ONE SG. Unit 2 has a limit on TOTAL leakage through BOTH SGs only.

b. Unit 2 has a limit on total leakage through BOTH SGs and a limit on leakage through any ONE SG. Unit 1 has a limit on TOTAL leakage through BOTH SGs only.

c. Unit 1 has a limit on total leakage through BOTH SGs and a limit on leakage through any ONE SG. Unit 2 has a limit on leakage through any ONE SG only.

d. Unit 2 has a limit on total leakage through BOTH SGs and a limit on leakage through any ONE SG. Unit 1 has a limit on leakage through any ONE SG only.

QUESTION: 053 (1.00)

Which ONE of the following states the Diesel Generator (DG) fuel oil storage capacity in terms of available time for ONE DG on Unit 2? (Assume total capacity of both the Diesel Oil Storage Tanks.)

a. 4 days

b. 8 days

c. 14 days

d. 28 days

QUESTION: 054 (1.00)

Which ONE of the following states the meaning of the "OVERCRANK" alarm being received while starting the Unit 1 Diesel Generator?

a. Diesel failed to start within a specified amount of time and therefore has been locked out.

b. Diesel has unsuccessfully completed five (5) start attempts.

c. Air pressure is now too low to crank the Diesel due to prolonged continuous cranking.

d. Air pressure is to high and the Diesel is cranking too fast.

QUESTION: 055 (1.00)

Which ONE of the following methods of Diesel Generator emergency shutdown is available on Unit 2 ONLY?

a. Local control panel emergency stop

b. Engine panel emergency stop

c. Control room emergency stop

d. Overspeed latch

QUESTION: 056 (1.00)

A major bus fault occurs on the 4160 V bus 2B3 which results in a DIFFERENTIAL CURRENT LOCK-OUT of that bus.

Which ONE of the following would occur as a result of this condition?

a. The 2B2/2B5 Station Service Transformer Feeder Breaker opens. The Diesel starts but does not attempt to close in on the bus due to the lockout.

b. The 2B2/2B5 Station Service Transformer Feeder Breaker opens. The Diesel does not start due to the lockout.

c. The 2AB to the 2B 480V Load Center Tie Breakers opens. The Diesel starts but does not attempt to close in on the bus due to the lockout.

d. The 2AB to the 2B 480V Load Center Tie Breakers opens. The Diesel does not start due to the lockout.

QUESTION: 057 (1.00)

Which ONE of the following Unit 2 Motor Control Centers (MCCs) can be fed from both 480 V Load Center 2B2 and 2B5?

a. 2B7

b. 2B8

c. 2B9

d. 2B10

QUESTION: 058 (1.00)

The recirculation minimum flow isolation valves for Unit 1 LPSI pumps have key operated lockout power switches.

Which ONE of the following states the reason these switches are excluded on Unit 2?

a. NO recirculation line is required.

b. The recirculation path excludes return to the RWT.

c. Each train of LPSI has a dedicated recirculation line.

d. A relief valve on each LPSI discharge line provides recirculation.

QUESTION: 059 (1.00)

Which ONE of the following discharges to the Quench Tank?

a. Letdown relief valves

b. Charging pump relief valves

c. Reactor Coolant Gas Vent valves

d. Safety Injection Tank (SIT) relief valves

QUESTION: 060 (1.00)

Which ONE of the following describes what the Unit 2 Containment Iodine Removal System consists of?

a. Hydrazine storage tank, two constant metering pumps and isolation valves.

b. Sodium hydroxide storage tank, one constant metering pump and isolation valves.

c. Nitrogen pressurized hydrazine storage tank, isolation valves, eductor, and an orifice.

d. Nitrogen pressurized sodium hydroxide storage tank, isolation valves, eductor, and an orifice.

QUESTION: 061 (1.00)

For Unit 1, annunciator L-24, STM BYPASS SYSTEM UNAVAILABLE, can result from any of the following conditions EXCEPT for ONE.

Which ONE of the following will NOT result in annunciator L-24, STM BYPASS SYSTEM UNAVAILABLE?

a. Loss of condenser vacuum.

b. SBCS Permissive Switch in OFF.

c. SBCS System Test Switch in TEST.

d. SBCS Valve Selector Switch selected to VALVE 1.

QUESTION: 062 (1.00)

Which ONE of the following actions would occur as a result of an "A Header" Component Cooling Water (CCW) radiation monitor HIGH activity alarm on Unit 2?

a. Venting of the CCW Surge Tank to the chemical drain tank.

b. Closure of A header ties to non-essential header valves.

c. Isolation of the CCW Surge Tank makeup.

d. Closure of N header isolation valves.

QUESTION: 063 (1.00)

Which ONE of the following Main Generator protective features will open the Generator Output Breakers (OCBs) and NOT the Auxiliary Transformer Breakers?

a. Negative Sequence Relay

b. Distribution Timer

c. String Bus Relay

d. Underfrequency

QUESTION: 064 (1.00)

Which ONE of the following Component Cooling Water loads is supplied directly from either of the Essential Headers on Unit 2?

a. Letdown Heat Exchanger

b. Waste Gas Compressors

c. Blowdown Radiation Monitor

d. Fuel Pool heat Exchangers

QUESTION: 065 (1.00)

The Steam Bypass Control System develops TWO quick-opening (QO) signals, Reactor Trip and Load Reduction, using some common and some individual inputs for each signal.

Which ONE of the following input signals is used ONLY in the development of the Reactor Trip QO signal?

a. Steam Flow

b. Turbine Load

c. Secondary Pressure

d. Reactor Trip Bus Undervoltage

QUESTION: 066 (1.00)

Unit 2 has been operating at 100% power when a load decrease to 50% is initiated. During the load decrease ONE CEA remains at its fully withdrawn position while the other CEAs in the Group are inserted.

Which ONE of the following annunciator alarms would provide indication that the CEA failed to move?

a. K-11 CEA MOTION INHIBIT

b. K-19 GROUP OUT OF SEQUENCE (DDPS)

c. K-29 CEA POWER DEPENDENT INSERTION (ADS)

d. K-35 DROPPED CEA CEDMCS

QUESTION: 067 (1.00)

Which ONE of the following is the basis for depressurizing the RCS to 1850 psia, if an RCP is tripped while the plant is in HOT STANDBY due to an off-normal condition?

a. Necessary to maintain subcooling margin within limits.

b. Prevents pressurizer level deviation from exceeding +4%.

c. Necessary to maintain RCP lower seal cavity temperature less than 300 degrees F.

d. Prevents departure from nucleate boiling condition in the loop with the secured RCP.

QUESTION: 068 (1.00)

Which ONE of the following actions ensures proper emergency boration flow, when using the Gravity Feed Valves?

a. Closing the Boric Acid Makeup Pump Recirc Valves.

b. Closing the Volume Control Tank Outlet Valve.

c. Closing the Boron Load Control Valve.

d. Opening the Emergency Borate Valves.

QUESTION: 069 (1.00)

On Unit 2, the QSPDS inverter has lost output voltage. Automatic swapping to the Isolimiter did NOT occur. Checks have shown that the Isolimiter is functioning correctly and is available for use.

Which ONE of the following is the FIRST course of action required to attempt restoration of power to the QSPDS bus?

a. place the manual bypass switch to the BYPASS position.

b. de-energize the QSPDS inverter and then place the manual bypass switch to the BYPASS position.

c. depress the lower pushbutton on the static transfer switch and verify the red LED is illuminated.

d. de-energize the QSPDS inverter and then depress the lower pushbutton on the static transfer switch and verify the red LED is illuminated.

QUESTION: 070 (1.00)

Given the following Unit 1 plant conditions:

- A Steam Generator (SG) Tube rupture is in progress on SG 2A.
- An Unisolable Excess Steam Demand Event is in progress on SG 2B.
- 1-EOP-15, "Functional Recovery" has been implemented.

Which ONE of the following states the method of RCS and Core Heat Removal that will be implemented?

a. SG 2A to atmosphere.

b. SG 2B to atmosphere.

c. SG 2A to condenser.

d. SG 2B to condenser.

QUESTION: 071 (1.00)

Which ONE of the following states how Pressurizer level indication is provided at the Hot Shutdown Control Panel (HSCP) for Unit 2?

a. A Normal/Isolate switch isolates LT-1104 and LT-1105 from the control room and transmits the signal to the HSCP.

b. LT-1110X and LT-1110Y provide continuous indication to the HSCP.

c. A Normal/Isolate switch isolates LT-1110X and LT-1110Y from the control room and transmits the signal to the HSCP.

d. LT-1104 and LT-1105 provide continuous indication to the HSCP.

QUESTION: 072 (1.00)

Which ONE of the following conditions on Unit 1 would require and immediate trip of the reactor and turbine according to the Off-Normal Operating Procedure for Loss Of Condenser Vacuum?

a. One circulating water pump trips and condenser differential pressure increases to 4.5" Hg. Abs.

b. Both circulating water pumps for one main condenser trip and condenser differential pressure increases to 1.5" Hg. Abs.

c. Unit operating at 50% power and backpressure increases to 4.5." Hg. Abs.

d. Unit operating at 100% power and back pressure increases to 3.9" Hg. Abs. after hogging ejectors are placed in service.

QUESTION: 073 (1.00)

Which ONE of the following CCW malfunctions would require a trip of the reactor and turbine according to the Off-Normal Operating Procedure for Component Cooling Water (CCW) Off-Normal Operation?

a. Loss of the "1B" CCW Heat Exchanger.

b. Low level in the CCW Surge Tank.

c. Rupture of the "N" CCW Header.

d. High CCW temperature.

QUESTION: 074 (1.00)

Which ONE of the following safety function status checks would be provided for by the following methods during a Station Blackout?

a. Reactivity Control is provided for by emergency boration capabilities.

b. Containment Temperature, Pressure, And Combustible Gas Control is provided for by containment cooling capabilities.

c. RCS Heat Removal is provided for by Auxiliary Feedwater availability.

d. RCS Inventory Control is provided for by Chemical and Volume Control System availability.

QUESTION: 075 (1.00)

When notifying the NPS of a fire emergency condition, which ONE of the following completes the information required to be given?

Type of Emergency, Any Injuries,:

a. Location of Fire, and Damage to Equipment.

b. Location of Fire, and Need for Outside Fire Assistance.

c. Number of Personnel at Scene, and Damage to Equipment.

d. Number of Personnel at Scene, and Need for Outside Fire Assistance.

QUESTION: 076 (1.00)

Which ONE of the following states the number of covered Heated Junction Thermocouple positions required to ensure the Hot Leg is covered on BOTH Units?

a. 3

b. 4

c. 5

d. 6

QUESTION: 077 (1.00)

During a plant cooldown with excessive Reactor Coolant System (RCS) activity, boration to shutdown concentration is performed early in the cooldown to maximize the cleanup.

Which ONE of the following RCS parameters forms the basis for performing boration early in the cooldown?

a. flow rate

b. temperature

c. volume

d. pressure

QUESTION: 078 (1.00)

Which ONE of the following parameters would be used to determine that an exhausted Purification Ion Exchanger was the cause for excessive Reactor Coolant System activity?

a. Dose equivalent iodine

b. 100/Ebar computation

c. decontamination factor

d. gross activity

QUESTION: 079 (1.00)

Which ONE of the following conditions occurring on ONE Reactor Coolant Pump (RCP) would require the Reactor to be tripped IMMEDIATELY on Unit 1?

a. Component Cooling Water flow is lost due to a closed valve.

b. Valid, rapidly dropping oil level in the upper reservoir.

c. Two failed seals have been detected.

d. Vibration has increased to 10 mils.

QUESTION: 080 (1.00)

Which ONE of the following controls is available at the Hot Shutdown Control Panel on Unit 1 ONLY? (NOT available on Unit 2)

a. Pressurizer Heaters

b. Auxiliary Feed Water Pumps

c. Letdown Flow Control

d. Power Operated Relief Valve

QUESTION: 081 (1.00)

For the Standard Post Trip Actions (SPTAs), which ONE of the following safety functions has the operator consider EOP-15, "Functional Recovery" as part of its Contingency Actions?

a. Reactivity Control

b. Maintenance of Vital Auxiliaries

c. RCS Pressure Control

d. Core Heat Removal

QUESTION: 082 (1.00)

Which ONE of the following system locations is potentially vulnerable to an Interfacing System Loss of Coolant Accident?

a. Chemical and Volume Control System charging lines

b. Reactor Coolant Pump seal injection lines

c. Containment Spray discharge headers

d. Safety Injection Tank outlet lines

QUESTION: 083 (1.00)

Which ONE of the following is considered a Limiting Transient for an Anticipated Transient Without Scram (ATWS) event?

a. Excess Steam Demand.

b. Stuck Open Power Operated Relief Valve.

c. Steam Generator Tube Rupture.

d. Interfacing system LOCA outside containment.

QUESTION: 084 (1.00)

Which ONE of the following states an action and its basis that is required to be performed IMMEDIATELY following a loss of a safety related D.C. Bus?

a. Trip the Main Turbine to prevent an uncontrolled cooldown of the RCS.

b. Isolate Auxiliary Spray to prevent uncontrolled depressurization of the RCS.

c. Close Atmospheric Steam Dump Valves to prevent uncontrolled cooldown of the RCS.

d. Close Power Operated Relief Valves to prevent uncontrolled depressurization of the RCS.

QUESTION: 085 (1.00)

Which ONE of the following states the expected response of the Steam Generator (SG) Blowdown radiation monitor indication following a HIGH activity alarm due to increasing SG Tube Leakage?

a. Continues to indicate SG activity.

b. Increases to full scale.

c. Stabilizes and then slowly decreases.

d. Decreases to minimum scale.

QUESTION: 086 (1.00)

During a cooldown of the Reactor Coolant System (RCS) following a Steam Generator Tube Rupture, it is observed that the isolated steam generator is no longer depressurizing. RCS subcooling is 21 degrees F with RCS pressure and isolated steam generator pressure equal.

Which ONE of the following is the reason that the isolated steam generator pressure is NOT dropping?

a. Thermal stratification is occurring in the isolated steam generator.

b. There is no longer sufficient inleakage of colder water from the RCS.

c. The RCS and the isolated steam generator are in thermal equilibrium.

d. Reverse heat transfer has stopped due to the pressures being equalized.

QUESTION: 087 (1.00)

Which ONE of the following Reactor Coolant System (RCS) break locations would result in the largest RCS energy loss rate?

a. Upstream of the Reactor Vessel Vent Valve.

b. At the Hot Leg tap for the Letdown line.

c. Upstream of a Power Operated Relief Valve.

d. At the top of a Steam Generator Tube.

QUESTION: 088 (1.00)

Which ONE of the following distinguishes between a Small and Large break Loss Of Coolant Accident (LOCA)?

a. A Small break LOCA requires High Pressure and Low Pressure Safety Injection for heat removal.

b. A Large break LOCA requires Steam Generators for heat removal.

c. A Small break LOCA will reach and maintain Shutdown Cooling conditions.

d. A Large break LOCA will void the Reactor Vessel head.

QUESTION: 089 (1.00)

Which ONE of the following would be indicated by an asterisk (*) preceding steps in 1-EOP-02, "Reactor Trip Recovery"?

a. Management directives.

b. Steps which require sign-offs.

c. Regulatory commitments.

d. Steps which may be performed out-of-sequence.

QUESTION: 090 (1.00)

Which ONE of the following is the required time frame for re-diagnosis and exit to the appropriate Emergency Operating Procedure (EOP) if the EOP in use is NOT maintaining safety functions?

a. 5 minutes

b. 10 minutes

c. 15 minutes

d. 20 minutes

QUESTION: 091 (1.00)

Which ONE of the following would be the most likely source of nitrogen in a nitrogen bound Charging Pump?

a. Charging Pump Suction Accumulator

b. Boric Acid Makeup Tank

c. Charging Pump Seal System

d. Refueling Water Tank

QUESTION: 092 (1.00)

On a loss of the "1A3" 4.16 KV bus, which ONE of the following occurs preventing either train of Shutdown Cooling (SDC) from being placed in service on Unit 1?

a. One SDC Hot Leg Suction Valve is de-energized.

b. The SDC Temperature Control Valve (HCV-3657) is de-energized.

c. One Low Pressure Safety Injection Header Isolation Valve in each train is de-energized.

d. The SDC Heat Exchanger Bypass Valve (FCV-3306) fails closed due to a loss of Instrument Air.

QUESTION: 093 (1.00)

Which ONE of the following Off-Normal Operating Procedures (ONOPs) requires verification that the "Extended Range Light" is extinguished?

a. ONOP 1-1210030, "Wide Range Nuclear Instrumentation Channel Malfunction"

b. ONOP 1-1220030, "Linear Power Range Channel Malfunction"

c. ONOP 2-1210030, "Wide Range Nuclear Instrumentation Channel Malfunction"

d. ONOP 2-1220030, "Linear Power Range Channel Malfunction"

QUESTION: 094 (1.00)

Given the following plant conditions:

- A plant trip during startup at 10% power has just occurred.
- Feed line rupture has occurred just downstream of the Main Feedwater Isolation valve for Steam Generator (SG) 2A.
- Both SGs are at 70% Narrow Range and decreasing slowly.
- All Auxiliary Feedwater is unavailable.
- Condensate Pumps are available.

Following completion of EOP-01, "Standard Post Trip Actions", which ONE of the following would be implemented to attempt recovery from these conditions?

a. 2-EOP-05, "Excess Steam Demand"

b. 2-EOP-06, "Total Loss Of Feedwater"

c. 2-EOP-15, "Functional Recovery"

d. 2-EOP-06, "Total Loss Of Feedwater" with 2-EOP-15, "Functional Recovery" for Once-Through-Cooling ONLY

QUESTION: 095 (1.00)

Which ONE of the following radiation monitors reading GREATER THAN a specified amount would require a contingency action to be performed, during performance of the Standard Post Trip Actions?

a. Condenser Air Ejector

b. Containment

c. Main Steam Line

d. Blowdown

QUESTION: 096 (1.00)

Which ONE of the following is NOT an acceptable method of cooling down and depressurizing the isolated Steam Generator according to the Unit 1 Off-Normal Operating Procedure for Steam Generator Tube Leak?

a. Feed and bleed using main or auxiliary feedwater and backflow into the reactor coolant system through the break.

b. Steaming the isolated steam generator to the main condenser.

c. Feed and bleed using main or auxiliary feedwater and blowdown to the steam generator blowdown tank.

d. Steaming the isolated steam generator to atmosphere.

QUESTION: 097 (1.00)

Following a Loss Of Offsite Power on Unit 2, all Reactor Coolant Pump (RCP) oil level indications are reading off-scale LOW.

Which ONE of the following statements explains this indication?

a. RCP oil lift pumps are running.

b. RCPs are not running.

c. Instrument AC power is lost to the SIGMAs.

d. Instrument Air is lost.

QUESTION: 098 (1.00)

Which ONE of the following states the response of the Unit 2 instrument air cross tie if Unit 1 was to experience a loss of instrument air pressure due to a leak on the header.

The Unit 2 instrument air cross tie will OPEN when Unit 1 pressure decreases to:

a. 85 psig and will CLOSE if Unit 2 pressure decreases to 85 psig.

b. 85 psig and will CLOSE if Unit 2 pressure decreases to 95 psig.

c. 95 psig and will CLOSE if Unit 2 pressure decreases to 95 psig.

d. 95 psig and will CLOSE if Unit 1 pressure decreases to 85 psig.

QUESTION: 099 (1.00)

Which ONE of the following states a condition in which the indicated Pressurizer level would indicate "LOWER" than actual level?

a. Pressurizer temperature less than the temperature for which the level transmitter was calibrated.

b. Rupture in the diaphragm of the Pressurizer level transmitter.

c. Containment pressure and temperature higher than normal.

d. Leak in the variable leg of the Pressurizer level transmitter.

QUESTION: 100 (1.00)

Which ONE of the following states the reason that the CEA Transfer Machine and the Fuel Element Transfer Machine (upenders), must be energized prior to operating the Refueling Machine?

a. To ensure the TV camera and underwater lighting can function properly.

b. So the cooling fans can function to prevent refueling equipment overheating.

c. To ensure all interlock relays between refueling equipment can function properly.

d. So the heaters can function to prevent moisture buildup on the internal relays.

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

ANSWER: 001 (1.00)

c.

REFERENCE:

Unit 1 Tech Spec 3.1.1.5, pg. 3/4 1-6.
Unit 2 Tech Spec 3.1.1.5, pg. 3/4 1-7.
LP DN 0902723, obj. 6
1992/04/27 NRC Exam

[4.1/3.9]

194001A102 ..(KA's)

ANSWER: 002 (1.00)

b.

REFERENCE:

HP-2, pg. 41
NO FACILITY OBJECTIVE FOUND
1992/04/27 NRC Exam

[2.8/3.4]

194001K103 ..(KA's)

ANSWER: 003 (1.00)

d.

REFERENCE:

AP 0010120, pg. 27
LP 0702841, obj. 5
1993/10/29 NRC Exam

[2.7/3.9]

194001A109 ..(KA's)

ANSWER: 004 (1.00)

a.

REFERENCE:

OP 0010122 pg. 16
LP 0702804, obj. 4
1993/10/29 NRC Exam

[3.7/4.1]

194001K102 ..(KA's)

ANSWER: 005 (1.00)

a.

REFERENCE:

General Employee Training Level I, "Emergency Conditions", pg 8.
NO FACILITY OBJECTIVE FOUND

[3.1/4.4]

194001A116 ..(KA's)

ANSWER: 006 (1.00)

b.

REFERENCE:

OP 0010122, pg. 3
LP DN 0702802, obj. 6
LP 0702804, obj. 3
Facility Question 073577 (Modified)

[3.6/3.7]

194001K101 ..(KA's)

ANSWER: 007 (1.00)

d.

REFERENCE:

OP 0010122, pg. 2
LP 0702804, obj. 2

[3.7/4.1]

194001K102 ..(KA's)

ANSWER: 008 (1.00)

c.

REFERENCE:

AP 0010135, pg. 1 & 2
LP 0702841, obj. 22 & 23

[3.7/4.1]

194001K102 ..(KA's)

ANSWER: 009 (1.00)

a.

REFERENCE:

AP 0010124, pg. 1 & 2
LP 0702841, obj. 13 & 14

[3.6/3.7]

194001K107 ..(KA's)

ANSWER: 010 (1.00)

c.

REFERENCE:

Unit 1 Tech Specs, pg. 6-2 & 6-4
AP 0010120, pg. 35
AP 1800022, pg. 36
LP 0702841, obj. 3 & 11

[2.5/3.4]

194001A103 ..(KA's)

ANSWER: 011 (1.00)

c.

REFERENCE:

AP 0010120, pg. 44-46
AP 0010124, pg. 4
OP 0010122, pg. 23
OP 0010129, pg. 4
LP 0702804, obj. 4

[3.4/3.4]

194001A106 ..(KA's)

ANSWER: 012 (1.00)

d.

REFERENCE:

AP 0010120, pg. 54
LP 0702841, obj. 8.c

[4.1/3.9]

194001A102 ..(KA's)

ANSWER: 013 (1.00)

b.

REFERENCE:

EPIP 3100023E, pg. 18
LP 0702833, pg. 7
LP 0702833, obj. 6

[3.1/4.4]

194001A116 ..(KA's)

ANSWER: 014 (1.00)

c.

REFERENCE:

AP 0010120, pg.31
LP 0702841, obj. 1 & 4

[3.1/4.1]

194001A112 ..(KA's)

ANSWER: 015 (1.00)

a.

REFERENCE:

OP 1-0030121, pg. 2
OP 2-0030121, pg. 2
LT 0711202, pg. 31
LP 0702202, obj. 7 & 9
1993/10/29 NRC Exam

[3.3/3.9]

003000K501 ..(KA's)

ANSWER: 016 (1.00)

d.

REFERENCE:

LT 0711403, pg. 33
LP 0702403, obj. 3.d
1993/10/29 NRC Exam

[3.7/3.7]

015000A103 ..(KA's)

ANSWER: 017 (1.00)

d.

REFERENCE:

LT 0711408, pg. 33
LP DN 0702408, obj. 4
1993/10/29 NRC Exam

[2.7/3.1]

059000A203 ..(KA's)

ANSWER: 018 (1.00)

d.

REFERENCE:

LP DN 0702412, pg. 33
LP DN 0702412, obj. 14
1993/10/29 NRC Exam

[4.1/4.2]

061000A304 ..(KA's)

ANSWER: 019 (1.00)

c.

REFERENCE:

LT 0711411, pg. 19
LP 0702411, obj. 10.c
Facility Question 073496
1993/10/29 NRC Exam

[2.8/3.0]

072000G009 ..(KA's)

ANSWER: 020 (1.00)

d.

REFERENCE:

OP 1-0030123, pg. 2
OP 2-0030123, pg. 2
LP 0702801, obj. 1

[3.8/4.1]

001000K506 ..(KA's)

ANSWER: 021 (1.00)

a.

REFERENCE:

P&ID 8770-G-078, sh. 120
LP 0702205, obj. 3.a, 3.b, & 3.d

[3.6/4.2]

004000A203 ..(KA's)

ANSWER: 022 (1.00)

b.

REFERENCE:

LT 0711202, pg. 26
LP 0702202, obj. 7.a & 8.d

[2.9/2.9]

003000A102 ..(KA's)

ANSWER: 023 (1.00)

c.

REFERENCE:

LT 0711202, pg. 5 & 25
LP 0702202, obj. 8.c

[3.0/3.3]

003000K112 ..(KA's)

ANSWER: 024 (1.00)

d.

REFERENCE:

LT 0711205, pgs. 8, 10, 37, & 38
LP 0702205, pgs. 4, 6, 26, & 27
LP 0702205, obj. 1 & 2.b

[2.8/3.2]

004000K504 ..(KA's)

ANSWER: 025 (1.00)

c.

REFERENCE:

LT 0711401, pg. 9 & 10
LP 0702401, obj. 10.d & 10.e

[4.5/4.7]

013000A403 ..(KA's)

ANSWER: 026 (1.00)

c.

REFERENCE:

LT 0711401, pg. 17
LP 0702401, obj. 3

[2.7/3.1]

013000K409 ..(KA's)

ANSWER: 027 (1.00)

a.

REFERENCE:

LT 0711401, pg. 13
LP 0702401, obj. 8.f

[4.1/4.2]

013000A302 ..(KA's)

ANSWER: 028 (1.00)

b.

REFERENCE:

LT 0711407, pg. 26 & 27
LP 0702407, obj. 8.d & 9

[3.1/3.2]

017000G008 ..(KA's)

ANSWER: 029 (1.00)

c.

REFERENCE:

LT 0711412, pg. 57
LP 0702412, obj. 10

[2.5/2.8]

061000K601 ..(KA's)

ANSWER: 030 (1.00)

b.

REFERENCE:

Unit 2 Tech Spec Bases, pg. B 3/4 7-2
LP 0702412, obj. 2.d

[4.4/4.6]

061000K301 ..(KA's)

ANSWER: 031 (1.00)

b.

REFERENCE:

AP 2-0010720, pg. 335 & 336
LT 0711412, pg. 11 & 12
LP 0702412, obj. 2.c & 5.c

[3.2/3.3]

061000K201 ..(KA's)

ANSWER: 032 (1.00)

d.

REFERENCE:

LT 0711301, pg. 34
LP 0702301, obj. 2.c

[2.6/2.8]

056000G001 ..(KA's)

ANSWER: 033 (1.00)

d.

REFERENCE:

LT 0711301, pg. 11
LP 0702301, obj. 9.c

[3.4/3.4]

059000K102 ..(KA's)

ANSWER: 034 (1.00)

a.

REFERENCE:

Unit 1 Tech Specs, pg. 3/4 6-15 & 3/4 6-17
LP 0702207, obj. 14 & 18

[3.0/3.7]

022000G005 ..(KA's)

ANSWER: 035 (1.00)

c.

REFERENCE:

LT 0711601, pg. 25
LP 0702601, obj. 2.c

[2.9/3.4]

071000K404 ..(KA's)

ANSWER: 036 (1.00)

d.

REFERENCE:

LT 0711403, pg. 25 & 39
LP 0702403, obj. 1.a & 2

[2.9/3.2]

015000K601 ..(KA's)

ANSWER: 037 (1.00)

a.

REFERENCE:

LT 0711832, pg. 17
LP 0702832, obj. 4

[3.9/3.9]

015000A402 ..(KA's)

ANSWER: 038 (1.00)

d.

REFERENCE:

LT 0711206, pg. 39
LP 0702206, obj. 6.c
1993/10/29 NRC Exam

[4.2/4.4]

002000K410 ..(KA's)

ANSWER: 039 (1.00)

b.

REFERENCE:

LT 0711203, pg. 8
LP 0702203, pg. 11
LP 0702203, obj. 7
1992/04/27 NRC Exam

[3.8/4.2]

002000K405 ..(KA's)

ANSWER: 040 (1.00)

c.

REFERENCE:

LT 0711206, pgs. 34, 35, & 41
LP 0702206, pgs. 12 & 13
LP 0702206, obj. 6.c & 8
1993/10/29 NRC Exam

[3.4/3.7]

010000A109 ..(KA's)

ANSWER: 041 (1.00)

b.

REFERENCE:

LT 0711503, pg. 10
LP 0702503, obj. 4.b
1993/10/29 NRC Exam

[3.3/3.1]

062000A401 ..(KA's)

ANSWER: 042 (1.00)

b.

REFERENCE:

LT 0711304, pgs. 15 thru 19
LP 0702304, obj. 5.c & 6.a

[3.7/3.7]

039000K405 ..(KA's)

ANSWER: 043 (1.00)

a.

REFERENCE:

OJT 0705012, pgs. 10 & 11
OJT 0705012, obj. 11, 22, 23, & 24

[2.9/3.3]

011000K603 ..(KA's)

ANSWER: 044 (1.00)

b.

REFERENCE:

LT 0711411, pg. 36
LP 0702411, obj. 10.a

[3.7/3.7]

073000A402 ..(KA's)

ANSWER: 045 (1.00)

c.

REFERENCE:

OP 2-0410021, pg. 9
LP 0702207, obj. 4.e & 11.d

[3.9/4.2]

006000K406 ..(KA's)

ANSWER: 046 (1.00)

c.

REFERENCE:

OP 1-0120020, pg. 6
OP 2-0120020, pg. 5
LT 0711207, pg. 17
LP 0702207, obj. 11.a & 12

[3.6/3.7]

006000K410 ..(KA's)

ANSWER: 047 (1.00)

b.

REFERENCE:

LT 0711404, pg. 11
LP 0702404, obj. 2.c

[3.9/4.3]

012000K402 ..(KA's)

ANSWER: 048 (1.00)

c.

REFERENCE:

LT 0711404, pg. 17
LP 0702404, obj. 2.b

[3.3/3.8]

012000K501 ..(KA's)

ANSWER: 049 (1.00)

d.

REFERENCE:

LT 0711404, pg. 33
LP 0702404, obj. 9, 11

[3.2/3.3]

012000K302 ..(KA's)

ANSWER: 050 (1.00)

c.

REFERENCE:

LT 0711402, pg. 7 and fig. 7 & 8
LP 0702402, obj. 3.b, 6.a, 8.a, & 8.b

[3.0/3.1]

016000A201 ..(KA's)

ANSWER: 051 (1.00)

b.

REFERENCE:

LT 0711402, pg. 8
LP 0702402, obj. 3.c, 5.b, & 8.c

[3.4/3.4]

016000K101 ..(KA's)

ANSWER: 052 (1.00)

b.

REFERENCE:

Unit 1 Tech Specs, pg. 3/4 4-14
Unit 2 Tech Specs, pg. 3/4 4-19
LP 0702201, obj. 10

[3.2/3.8]

035000G005 ..(KA's)

ANSWER: 053 (1.00)

c.

REFERENCE:

LT 0711501, pg. 24 & 26
LP 0702501, pgs. 7-12
LP 0702501, obj. 10 & 18.f

[2.5/2.8]

064000A102 ..(KA's)

ANSWER: 054 (1.00)

a.

REFERENCE:

LT 0711501, pg. 22
LP 0702501, obj. 6

[4.1/4.0]

064000A301 ..(KA's)

ANSWER: 055 (1.00)

c.

REFERENCE:

LP 0702501, pgs. 48, 57, & 60
LP 0702501, obj. 17, 18.c & 18.e

[3.7/3.7]

064000G009 ..(KA's)

ANSWER: 056 (1.00)

a.

REFERENCE:

LT 0711502, pg. 15 & 16
LP 0702501, pg. 55
LP 0702501, obj. 16.g
LP 0702502, obj. 6 & 7.b

[3.2/3.6]

062000A212 ..(KA's)

ANSWER: 057 (1.00)

c.

REFERENCE:

LT 0711502, fig. 1B
LP 0702502, obj. 2.a

[3.3/3.4]

062000K201 ..(KA's)

ANSWER: 058 (1.00)

c.

REFERENCE:

LT 0711207, pg. 15 & 16
LP 0702207, obj. 3.a & 3.b
1993/10/29 NRC Exam

[3.5/3.6]

005000K111 ..(KA's)

ANSWER: 059 (1.00)

c.

REFERENCE:

LT 0711201, pg. 29
LT 0711206, pg. 46
LP 0702201, obj. 7.e
LP 0702206, obj. 10.b
1992/04/26 NRC Exam

[2.7/2.9]

007000A301 ..(KA's)

ANSWER: 060 (1.00)

a.

REFERENCE:

LT 0711207, pg. 26
LP 0702207, obj. 1.d & 4.h
1993/10/29 NRC Exam

[3.4/3.7]

027000K101 ..(KA's)

ANSWER: 061 (1.00)

b.

REFERENCE:

ONOP 1-0030131, pg. 92
LT 0711406, pg. 18
LP 0702406, obj. 8.b.3)
1993/10/29 NRC Exam

[2.9/2.9]

041000G012 ..(KA's)

ANSWER: 062 (1.00)

a.

REFERENCE:

LT 0711209, pg. 9 & 10
LT 0711411, pg. 32
LP 0702209, obj. 3 & 5.e
LP 0702411, obj. 5.a & 5.b

[3.3/3.5]

008000A204 ..(KA's)

ANSWER: 063 (1.00)

d.

REFERENCE:

LT 0711307, pg. 44
LP 0702307, obj. 9.c, 9.d, 10, & 12

[2.9/3.2]

045010K301 ..(KA's)

ANSWER: 064 (1.00)

d.

REFERENCE:

LT 0711209, pg. 19
LP 0702209, obj. 1

[3.4/3.5]

008000K301 ..(KA's)

ANSWER: 065 (1.00)

c.

REFERENCE:

LT 0711406, pg. 10
LP 0702406, obj. 4.b

[2.7/2.9]

041020K603 ..(KA's)

ANSWER: 066 (1.00)

a.

REFERENCE:

ONOP 2-0030131, pg. 88 & 90
ONOP 2-0110030, pg. 3
LP 0702812, pg. 22
LP 0702812, obj. 10 & 11
1993/10/29 NRC Exam

[3.1/3.3]

000005G005 ..(KA's)

ANSWER: 067 (1.00)

c.

REFERENCE:

ONOP 1-0120034, pg. 5
ONOP 2-0120034, pg. 5
LP 0702202, obj 9
1993/10/29 NRC Exam

[3.0/4.0]

000015K103 ..(KA's)

ANSWER: 068 (1.00)

b.

REFERENCE:

ONOP 1-0250030, pg. 4
ONOP 2-0250030, pg. 4
LP 0702812, obj. 2 & 27
1993/10/29 NRC Exam

[3.9/3.9]

000024A117 ..(KA's)

ANSWER: 069 (1.00)

c.

REFERENCE:

ONOP 2-0970030, pgs. 7, 8, & 9
LP 0702503, obj 7.b
1993/10/29 NRC Exam

[3.6/3.9]

000057A220 ..(KA's)

ANSWER: 070 (1.00)

a.

REFERENCE:

1-EOP-15, pg. 96 & 99
LP 0702828, obj. 3 & 6

[3.7/3.8]

000040K106 ..(KA's)

ANSWER: 071 (1.00)

d.

REFERENCE:

LT 0711206, pg. 49
LP 0702206, obj. 3 & 6.h

[3.9/4.0]

000068K201 ..(KA's)

ANSWER: 072 (1.00)

a.

REFERENCE:

ONOP 1-0610031, pgs. 6-8
LP 0702812, obj. 2 & 38

[3.9/4.1]

000051A202 ..(KA's)

ANSWER: 073 (1.00)

c.

REFERENCE:

ONOP 1-0310030, pg. 10
ONOP 2-0310030, pg. 11
LP 0702812, obj. 5 & 30.e

[4.0/4.2]

000026K303 ..(KA's)

ANSWER: 074 (1.00)

c.

REFERENCE:

LT 0711830, pg. 11
LP 0702830, obj. 7

[3.7/4.1]

000055A204 ..(KA's)

ANSWER: 075 (1.00)

a.

REFERENCE:

EPIP 3100025E, pg. 4
EPIP 3100029E, pg. 3
LP 0702833, pg. 8
LP 0702833, obj. 8

[3.4/3.4]

000067G012 ..(KA's)

ANSWER: 076 (1.00)

b.c. Aff 10-12-94

REFERENCE:

LT 0711407, fig. 21a & 21b
LP 0702407, obj. 6.a, 8.a, & 8.d

[4.2/4.4]

000074A101 ..(KA's)

ANSWER: 077 (1.00)

a.

REFERENCE:

ONOP 1-0120032, pg. 10
ONOP 2-0120032, pg. 10
LP 0702812, obj. 5

[3.2/3.8]

000076K306 ..(KA's)

ANSWER: 078 (1.00)

c.

REFERENCE:

ONOP 1-0120032, pg. 6
ONOP 2-0120032, pg. 6
LP 0702812, obj. 14

[3.2/3.4]

000076A104 ..(KA's)

ANSWER: 079 (1.00)

b.

REFERENCE:

ONOP 1-0120034, pg. 4 & 6
LP 0702812, obj. 2

[3.4/3.4]

000015G010 ..(KA's)

ANSWER: 080 (1.00)

d.

REFERENCE:

OJT 0705012, pg. 9
OJT 0705012, obj. 5 & 6

[3.9/4.0]

000068K201 ..(KA's)

ANSWER: 081 (1.00)

a.

REFERENCE:

1-EOP-01, pg. 3
2-EOP-01, pg. 3
LP 0702822, obj. 4
1993/10/29 NRC Exam

[4.4/4.6]

000007A204 ..(KA's)

ANSWER: 082 (1.00)

d.

REFERENCE:

LT 0711824, pg. 46
LP 0702824, obj. 14
1993/10/29 NRC Exam

[3.5/3.8]

000009A202 ..(KA's)

ANSWER: 083 (1.00)

b.

REFERENCE:

LP 0702812, pg. 19 & 20
LP 0702812, obj 6
1993/10/29 NRC Exam (Modified)

[4.4/4.6]

000029G011 ..(KA's)

ANSWER: 084 (1.00)

d.

REFERENCE:

ONOP 1-0030136, pg. 4
ONOP 2-0030136, pg. 4
LP 0702812, obj. 2 & 9

[4.0/4.2]

000058K302 ..(KA's)

ANSWER: 085 (1.00)

c.

REFERENCE:

ONOP 1-1110037, pg. 1
ONOP 2-1110037, pg. 2
LP 0702812, obj. 47

[3.9/4.0]

000037A113 ..(KA's)

ANSWER: 086 (1.00)

a.

REFERENCE:

LT 0711825, pg. 39
LP 0702825, obj. 5

[3.9/4.2]

000038K103 ..(KA's)

ANSWER: 087 (1.00)

c.

REFERENCE:

LT 0711824, pg. 9
LP 0702824, pg. 8
LP 0702824, obj. 5.b

[3.2/3.7]

000008K101 ..(KA's)

ANSWER: 088 (1.00)

c.

REFERENCE:

LT 0711824, pg. 8 & 9
LP 0702824, obj. 2

[4.2/4.5]

000009K321 ..(KA's)

ANSWER: 089 (1.00)

d.

REFERENCE:

1-EOP-02, pg. 3
AP 0010120, pg. 49
LP 0702841, obj. 8.c

[3.8/3.9]

000007G012 ..(KA's)

ANSWER: 090 (1.00)

c.

REFERENCE:

AP 0010120, pg. 49
LP 0702841, obj. 8.c

[4.0/4.6]

000007K301 ..(KA's)

ANSWER: 091 (1.00)

a.

REFERENCE:

ONOP 1-0210030, 5
ONOP 2-0210030, 5
LP 0702812, obj. 5 & 25

[3.2/3.7]

000022A202 ..(KA's)

ANSWER: 092 (1.00)

a.

REFERENCE:

LT 0711207, pg. 20 & 21
LP 0702207, obj. 5.a

[3.2/3.2]

000025K202 ..(KA's)

ANSWER: 093 (1.00)

a.

REFERENCE:

ONOP 1-1210030, pg. 5
LT 0711403, pgs. 17 & 18
LP 0702403, obj. 8.d
LP 0702812, obj. 5 & 49

[2.7/3.1]

000032K201 ..(KA's)

ANSWER: 094 (1.00)

b.

REFERENCE:

LT 0711827, pg. 6 & 28
LP 0702827, obj. 8

[4.4/4.6]

000054K304 ..(KA's)

ANSWER: 095 (1.00)

b.

REFERENCE:

1-EOP-01, pg. 10
2-EOP-01, pg. 10
LP 0702822, obj. 4

[3.3/3.3]

000061G010 ..(KA's)

ANSWER: 096 (1.00)

c.

REFERENCE:

ONOP 1-0830030, pg. 13 & 14
LP 0702812, obj. 5 & 41.d

[3.7/3.6]

000037A101 ..(KA's)

ANSWER: 097 (1.00)

d.

REFERENCE:

LT 0711202, pg. 20
LP 0702202, pg. 13
LP 0702202, 3.c

[3.6/3.6]

000009A109 ..(KA's)

ANSWER: 098 (1.00)

a.

REFERENCE:

ONOP 1-1010030, pg. 4
LP 0702812, obj. 45
1993/10/29 NRC Exam

[3.0/3.2]

000065K304 ..(KA's)

ANSWER: 099 (1.00)

d.

REFERENCE:

LP 0702812, pg. 26
LP 0702812, obj. 19

[2.8/3.1]

000028K101 ..(KA's)

ANSWER: 100 (1.00)

c.

REFERENCE:

LP 0702208, obj. 1.h, 3.c
Facility Question 081113

[3.1/3.7]

000036A104 ..(KA's)

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

A N S W E R K E Y

MULTIPLE CHOICE

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

A N S W E R K E Y

046 c

MULTIPLE CHOICE

047 b
048 c
049 d
050 c
051 b
052 b
053 c
054 a
055 c
056 a
057 c
058 c
059 c
060 a
061 b
062 a
063 d
064 d
065 c
066 a
067 c
068 b
069 c
070 a
071 d
072 a
073 c
074 c
075 a
MH 10-12-94 076 b c
077 a
078 c
079 b
080 d
081 a
082 d
083 b
084 d
085 c
086 a
087 c
088 c
089 d
090 c

A N S W E R K E Y

091 a

MULTIPLE CHOICE

092 a

093 a

094 b

095 b

096 c

097 d

098 a

099 d

100 c

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

R O E x a m P W R R e a c t o r

O r g a n i z e d b y Q u e s t i o n N u m b e r

QUESTION	VALUE	REFERENCE
001	1.00	26740
002	1.00	26742
003	1.00	39145
004	1.00	39142
005	1.00	9000166
006	1.00	9000167
007	1.00	9000168
008	1.00	30319
009	1.00	9000170
010	1.00	9000171
011	1.00	9000172
012	1.00	9000173
013	1.00	9000174
014	1.00	25227
015	1.00	39509
016	1.00	39153
017	1.00	39511
018	1.00	39158
019	1.00	39161
020	1.00	9000182
021	1.00	9000183
022	1.00	9000184
023	1.00	30335
024	1.00	9000186
025	1.00	9000187
026	1.00	9000188
027	1.00	9000189
028	1.00	25245
029	1.00	30347
030	1.00	25249
031	1.00	9000193
032	1.00	9000194
033	1.00	9000195
034	1.00	9000196
035	1.00	30344
036	1.00	9000198
037	1.00	25243
038	1.00	39515
039	1.00	26777
040	1.00	39167
041	1.00	39174
042	1.00	9000205
043	1.00	9000206
044	1.00	9000207
045	1.00	9000208
046	1.00	9000209
047	1.00	9000210
048	1.00	9000211
049	1.00	9000212

R O E x a m P W R R e a c t o r

O r g a n i z e d b y Q u e s t i o n N u m b e r

QUESTION	VALUE	REFERENCE
050	1.00	9000213
051	1.00	9000214
052	1.00	30418
053	1.00	9000216
054	1.00	25266
055	1.00	9000218
056	1.00	25265
057	1.00	9000220
058	1.00	39180
059	1.00	26811
060	1.00	39183
061	1.00	39184
062	1.00	9000225
063	1.00	9000226
064	1.00	9000227
065	1.00	9000228
066	1.00	39185
067	1.00	39187
068	1.00	39520
069	1.00	39195
070	1.00	9000245
071	1.00	9000246
072	1.00	9000247
073	1.00	30392
074	1.00	9000249
075	1.00	9000250
076	1.00	9000252
077	1.00	9000253
078	1.00	9000254
079	1.00	9000255
080	1.00	9000256
081	1.00	39524
082	1.00	38255
083	1.00	39202
084	1.00	26827
085	1.00	9000264
086	1.00	30420
087	1.00	9000266
088	1.00	9000267
089	1.00	30412
090	1.00	9000269
091	1.00	30414
092	1.00	9000271
093	1.00	9000272
094	1.00	9000273
095	1.00	25296
096	1.00	9000275
097	1.00	9000276
098	1.00	39209

R O E x a m P W R R e a c t o r

O r g a n i z e d b y Q u e s t i o n N u m b e r

QUESTION	VALUE	REFERENCE
099	1.00	9000279
100	1.00	9000280
	100.00	
	100.00	

RO Exam PWR Reactor

Organized by KA Group

PLANT WIDE GENERICS

QUESTION	VALUE	KA
012	1.00	194001A102
001	1.00	194001A102
010	1.00	194001A103
011	1.00	194001A106
003	1.00	194001A109
014	1.00	194001A112
005	1.00	194001A116
013	1.00	194001A116
006	1.00	194001K101
007	1.00	194001K102
008	1.00	194001K102
004	1.00	194001K102
002	1.00	194001K103
009	1.00	194001K107
PWG Total	14.00	

PLANT SYSTEMS

Group I

QUESTION	VALUE	KA
020	1.00	001000K506
022	1.00	003000A102
023	1.00	003000K112
015	1.00	003000K501
021	1.00	004000A203
024	1.00	004000K504
027	1.00	013000A302
025	1.00	013000A403
026	1.00	013000K409
016	1.00	015000A103
037	1.00	015000A402
036	1.00	015000K601
028	1.00	017000G008
034	1.00	022000G005
032	1.00	056000G001
017	1.00	059000A203
033	1.00	059000K102
018	1.00	061000A304
031	1.00	061000K201
030	1.00	061000K301
029	1.00	061000K601
035	1.00	071000K404
019	1.00	072000G009

R O E x a m P W R R e a c t o r

O r g a n i z e d b y K A G r o u p

PLANT SYSTEMS

Group I

QUESTION	VALUE	KA
PS-I Total	23.00	

Group II

QUESTION	VALUE	KA
039	1.00	002000K405
038	1.00	002000K410
045	1.00	006000K406
046	1.00	006000K410
040	1.00	010000A109
043	1.00	011000K603
049	1.00	012000K302
047	1.00	012000K402
048	1.00	012000K501
050	1.00	016000A201
051	1.00	016000K101
052	1.00	035000G005
042	1.00	039000K405
056	1.00	062000A212
041	1.00	062000A401
057	1.00	062000K201
053	1.00	064000A102
054	1.00	064000A301
055	1.00	064000G009
044	1.00	073000A402
PS-II Total	20.00	

Group III

QUESTION	VALUE	KA
058	1.00	005000K111
059	1.00	007000A301
062	1.00	008000A204
064	1.00	008000K301
060	1.00	027000K101
061	1.00	041000G012
065	1.00	041020K603
063	1.00	045010K301
PS-III Total	8.00	

R O E x a m P W R R e a c t o r

O r g a n i z e d b y K A G r o u p

PLANT SYSTEMS

QUESTION	VALUE	KA
PS Total	51.00	

EMERGENCY PLANT EVOLUTIONS

Group I

QUESTION	VALUE	KA
066	1.00	000005G005
079	1.00	000015G010
067	1.00	000015K103
068	1.00	000024A117
073	1.00	000026K303
070	1.00	000040K106
072	1.00	000051A202
074	1.00	000055A204
069	1.00	000057A220
075	1.00	000067G012
071	1.00	000068K201
080	1.00	000068K201
076	1.00	000074A101
078	1.00	000076A104
077	1.00	000076K306
EPE-I Total	15.00	

Group II

QUESTION	VALUE	KA
081	1.00	000007A204
089	1.00	000007G012
090	1.00	000007K301
087	1.00	000008K101
097	1.00	000009A109
082	1.00	000009A202
088	1.00	000009K321
091	1.00	000022A202
092	1.00	000025K202
083	1.00	000029G011
093	1.00	000032K201
096	1.00	000037A101
085	1.00	000037A113
086	1.00	000038K103
094	1.00	000054K304

R O E x a m P W R R e a c t o r

O r g a n i z e d b y K A G r o u p

EMERGENCY PLANT EVOLUTIONS

Group II

QUESTION	VALUE	KA
084	1.00	000058K302
095	1.00	000061G010
EPE-II Total	17.00	

Group III

QUESTION	VALUE	KA
099	1.00	000028K101
100	1.00	000036A104
098	1.00	000065K304
EPE-III Total	3.00	
EPE Total	35.00	
Test Total	100.00	

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Operator Licensing
Examination

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10 3-A

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

CANDIDATE'S NAME: _____

FACILITY: St Lucie 1 & 2

REACTOR TYPE: PWR-CE

DATE ADMINISTERED: 94/10/17

INSTRUCTIONS TO CANDIDATE:

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

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

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

_____
Candidate's Signature

A N S W E R S H E E T

Multiple Choice (Circle or X your choice)

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

MULTIPLE CHOICE

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

A N S W E R S H E E T

Multiple Choice (Circle or X your choice)

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

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

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 ___

MULTIPLE CHOICE

092 a b c d ___

093 a b c d ___

094 a b c d ___

095 a b c d ___

096 a b c d ___

097 a b c d ___

098 a b c d ___

099 a b c d ___

100 a b c d ___

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

NRC RULES AND GUIDELINES FOR LICENSE EXAMINATIONS

During the administration of this examination the following rules apply:

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

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

3. Restroom trips are to be limited and only one applicant at a time may leave. You must avoid all contacts with anyone outside the examination room to avoid even the appearance or possibility of cheating.

4. Use black ink or dark pencil ONLY to facilitate legible reproductions.

5. Print your name in the blank provided in the upper right-hand corner of the examination cover sheet and each answer sheet.

6. Mark your answers on the answer sheet provided. USE ONLY THE PAPER PROVIDED AND DO NOT WRITE ON THE BACK SIDE OF THE PAGE.

7. Before you turn in your examination, consecutively number each answer sheet, including any additional pages inserted when writing your answers on the examination question page.

8. Use abbreviations only if they are commonly used in facility literature. Avoid using symbols such as < or > signs to avoid a simple transposition error resulting in an incorrect answer. Write it out.

9. The point value for each question is indicated in parentheses after the question.

10. Show all calculations, methods, or assumptions used to obtain an answer to any short answer questions.

11. Partial credit may be given except on multiple choice questions. Therefore, ANSWER ALL PARTS OF THE QUESTION AND DO NOT LEAVE ANY ANSWER BLANK.

12. Proportional grading will be applied. Any additional wrong information that is provided may count against you. For example, if a question is worth one point and asks for four responses, each of which is worth 0.25 points, and you give five responses, each of your responses will be worth 0.20 points. If one of your five responses is incorrect, 0.20 will be deducted and your total credit for that question will be 0.80 instead of 1.00 even though you got the four correct answers.

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

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

15. Ensure all information you wish to have evaluated as part of your answer is on your answer sheet. Scrap paper will be disposed of immediately following the examination.

16. To pass the examination, you must achieve a grade of 80% or greater.

17. There is a time limit of four (4) hours for completion of the examination.

18. When you are done and have turned in your examination, leave the examination area (EXAMINER WILL DEFINE THE AREA). If you are found in this area while the examination is still in progress, your license may be denied or revoked.

QUESTION: 001 (1.00)

Given the following plant conditions:

- CEAs are being withdrawn for startup.
- A stable startup rate of one decade per minute is being maintained.
- Tavg is 513 degrees F.

Which ONE of the following states the action required according to Technical Specification 3.1.1.5, "Minimum Temperature For Criticality"?

Tavg is required to be restored to greater than or equal to:

a. 515 degrees F within one hour or be in HOT STANDBY within the next hour.

b. 532 degrees F within one hour or be in HOT STANDBY within the next hour.

c. 515 degrees F within 15 minutes or be in HOT STANDBY within the next 15 minutes.

d. 532 degrees F within 15 minutes or be in HOT STANDBY within the next 15 minutes.

QUESTION: 002 (1.00)

Which ONE of the following is a violation of the procedure for placing valves under Administrative Control?

a. The Assistant Nuclear Plant Supervisor (ANPS) approved the locking of a motor operated valve.

b. Two motor operated valves were locked using a single locking device.

c. An In-plant Equipment Clearance Tag was used in place of a locking device.

d. Valve positions were changed by an approved procedure, returned to normal by the same procedure, and were NOT entered in the Valve, Switch Deviation Log (Appendix "C").

QUESTION: 003 (1.00)

A small fire has started due to burning insulation inside a breaker cubicle. Power to the breaker cannot be interrupted.

Which ONE of the following would be the appropriate extinguisher to use on this fire upon discovery?

a. Class C C02 extinguisher.

b. Foam generating extinguisher.

c. Stream-type fire hose nozzle.

d. Class A pressurized water extinguisher.

QUESTION: 004 (1.00)

Given the following plant conditions:

- The Reactor is in MODE 6.
- The Nuclear Plant Supervisor (NPS) needs an additional control room operator for the upcoming peak shift on a Friday night.
- NO one is willing to hold over and work just the first four hours of the next shift.
- All "shifts" are eight (8) hours in length.

Which ONE of the following operators can work the additional shift according to AP 0010119, "Overtime Limitations For Plant Personnel"?

a. Operator "A", who has worked his normal dayshift, is willing to hold over and work the peak shift but he states that he came in one (1) hour early to relieve an operator for an appointment.

b. Operator "B", who has worked his normal dayshift, is willing to hold over and work the peak shift but he states that he worked eight (8) hours on the peak shift the day before.

c. Operator "C", who works relief dayshift, is willing to work the peak shift but states that he worked an overtime shift two (2) days ago and it would be his third overtime shift this week.

d. Operator "D", who works the midnight shift, is willing to come in and work the peak shift, but states he held over from his previous shift for a one (1) hour training class.

QUESTION: 005 (1.00)

Which ONE of the following methods satisfies the requirement for performing an INDEPENDENT VERIFICATION of a component?

a. The independent verification of position of a locked closed valve was waived since the valve location was in a HIGH Radiation area (200 mRem/hr).

b. An energized valve position light was used to independently verify the position of a motor operated valve on issuing a clearance.

c. The independent verification of position of a locked open valve was waived since functional testing was required to prove system operability.

d. Valve stem position was used to independently verify the position of a FULLY open manual valve on performing a valve lineup.

QUESTION: 006 (1.00)

Which ONE of the following is a responsibility of persons performing work under a Radiation Work Permit (RWP) according to HP-1, "Radiation Work Permits" (RWP)?

a. Changing the job description on the RWP to match the current job conditions as they change.

b. Cleaning the area to the satisfaction of Health Physics upon completion of work.

c. Ensuring availability of protective clothing, respiratory equipment, and monitoring instruments required by the RWP.

d. Cleaning up any spills that occur and then notifying HP and the control room of their occurrence and cleanup.

QUESTION: 007 (1.00)

Which ONE of the following is an example of a valid Temporary Change (TC) to a procedure?

A TC that has been:

a. implemented on a setpoint change for 10 days with FRG review prior to approval.

b. authorized on a Quality Instruction by the NPS and RCO with verbal concurrence from the Quality Manager.

c. implemented for 16 days and is to be reviewed by the Facility Review Group (FRG) tomorrow.

d. authorized for 95 days by the NPS and Operations Manager.

QUESTION: 008 (1.00)

Which ONE of the following describes the sound made by the SITE EVACUATION alarm?

a. Warble tone of variable frequency

b. Periodic yelping tone

c. Steady buzzer tone

d. Siren tone

QUESTION: 009 (1.00)

The Unit 2 SNPO has racked out the breaker for 2A CCW Pump.

Which ONE of the following states the minimum qualifications required for the individual performing the Independent Verification of this evolution?

a. Nuclear Plant Operator

b. Senior Nuclear Plant Operator

c. Licensed Reactor Operator

d. Licensed Senior Reactor Operator

QUESTION: 010 (1.00)

Which ONE of the following conditions is required for a clearance holder to release a clearance?

a. The system has been tested to the extent that it is evaluated safe to be released.

b. All clearances have been properly released.

c. All tags have been removed and valves, switches, etc., are in their required position.

d. All related maintenance work has been completed.

QUESTION: 011 (1.00)

Which ONE of the following departments can place Caution Tags on installed in-plant equipment according to AP 0010135, "Caution Tag Clearance Procedure"?

a. Mechanical Maintenance

b. Health Physics

c. Electrical Maintenance

d. Chemistry

QUESTION: 012 (1.00)

Which ONE of the following situations would require an entry in the Jumper/Lifted Lead Log?

a. Connecting cables from a 480v Motor Control Center (MCC) to a temporary power panel for outage maintenance support.

b. Maintenance technicians installing a temporary drain hose to support changing oil on a pump.

c. Performing a channel calibration procedure which requires installing jumpers to electrically bypass automatic actuation.

d. Physically removing a Sigma for repair under an approved Nuclear Plant Work Order (NPWO).

QUESTION: 013 (1.00)

Given the following Unit 1 plant conditions:

- The plant is operating at 50% power.

Which ONE of the following positions could be vacant for three (3) hours WITHOUT resulting in a Shift Staffing violation?

a. Desk Reactor Control Operator

b. Fire Brigade Team Leader

c. On-Shift Chemistry Technician

d. Shift Technical Advisor

QUESTION: 014 (1.00)

Which ONE of the following logs is the Assistant Nuclear Plant Supervisor (ANPS) responsible for maintaining?

a. Disconnected Lead and Temporary Jumper Log

b. Chronological Log

c. Equipment Out-of-Service Log

d. Equipment Clearance Order Log

QUESTION: 015 (1.00)

Which ONE of the following states the reason Component Cooling Water (CCW) to the Reactor Coolant Pumps (RCPs) is NOT to be restored following a Safety Injection Actuation Signal (SIAS) while in EOP-1, "Standard Post Trip Actions"?

a. Instrument Air to Containment is no longer available to open the valves.

b. Override capability is not available for these valves if closed by SIAS.

c. Causes thermal shock to the RCP seals if done too soon after being lost.

d. Overrides a safeguard signal prior to diagnosing the event.

QUESTION: 016 (1.00)

Which ONE of the following is the first backup method for notification of the State Warning Point in the event the State Hot Ring Down has failed?

a. FTS 2000 - Federal Telecommunications System

b. NAWAS - National Warning System

c. LGR - Local Government Radio System

d. Bell - Commercial Phone System

QUESTION: 017 (1.00)

During Mode 1 operation, while researching a group of Plant Work Orders (PWO's), a mechanical maintenance department foreman requests that a mechanic be allowed to stroke test Boric Acid Gravity Feed valve (V-2508) to determine if the line is rocked up.

Which ONE of the following states the response of the operations department?

a. Prohibit the mechanic from operating the valve since non-operations manipulations of sensitive equipment must have prior Facility Review Group (FRG) review and Plant Manager approval.

b. Let the mechanic operate the valve as long as the control room operators are notified when the stroke test is complete.

c. Prohibit the mechanic from operating the valve since only licensed personnel can operate it.

d. Let the mechanic operate the valve as long as the control room operators are informed as to how long the valve is open so they can track primary water additions.

QUESTION: 018 (1.00)

The charging pumps can be aligned to discharge to the HPSI header via a crosstie.

Which ONE of the following states a function of this crosstie applicable to Unit 1 ONLY?

a. Allows functional testing of the SIS check valves.

b. Provides an alternate path for Hot Leg Injection.

c. Permits boration of the RCS in MODES 5 and 6.

d. Supplements draining of the RCS to the RWT.

QUESTION: 019 (1.00)

The Steady State Band for Axial Shape Index (ASI) is wider than the Transient Band.

Which ONE of the following states the basis for providing this wider band?

a. Minimize reactor power reductions for xenon oscillations which cannot be maintained via CEA movement.

b. Allow more time for analyzing corrective actions for divergent xenon oscillations.

c. Minimize waste accumulation from borations and dilutions required for ASI control.

d. Allow minor variations in ASI thus requiring less frequent CEA movements.

QUESTION: 020 (1.00)

Which ONE of the following would indicate a Charging Line break on the inlet to the Regenerative Heat Exchanger?

a. Regenerative Heat Exchanger Outlet Temperature

b. Letdown Ion Exchanger Bypass on High Temperature

c. Regenerative Heat Exchanger Differential Pressure

d. Charging Header Flow

QUESTION: 021 (1.00)

Which ONE of the following conditions would be indicated by the Reactor Coolant Pump control switch "amber" lamp being illuminated?

a. Breaker is racked out.

b. Lift Oil Pressure is adequate.

c. Breaker is locked out on electrical fault.

d. Component Cooling Water flow is insufficient.

QUESTION: 022 (1.00)

Which ONE of the following conditions will cause the Unit 1 RCP Seal Cooler Outlet Isolation Valve (HCV-14-11-A1) to automatically close?

a. A loss of Air Supply with hand switch in the Auto position.

b. The handswitch in Auto with an SIAS signal present.

c. The handswitch in Auto with a cooler outlet temperature of greater than 200 degrees F.

d. A loss of electrical power with the handswitch in the Open/Reset position.

QUESTION: 023 (1.00)

Which ONE of the following states the reason hydrogen is added to the Volume Control Tank?

a. Volume Control Tank inerting.

b. Oxygen scavenging prior to plant heatup.

c. Reactor Coolant System pH control.

d. Oxygen scavenging during normal operations.

QUESTION: 024 (1.00)

Which ONE of the following actions would the operator take to place an Engineered Safety Features Actuation System (ESFAS) channel in BYPASS?

a. Remove ONE isolation module.

b. Remove TWO isolation modules.

c. Operate ONE bypass key switch.

d. Operate TWO bypass key switches.

QUESTION: 025 (1.00)

Which ONE of the following Engineered Safety Features Actuation System signals output relays ENERGIZE to actuate?

a. MSIS (Main Steam Isolation Signal)

b. SIAS (Safety Injection Actuation Signal)

c. CSAS (Containment Spray Actuation Signal)

d. CIAS (Containment Isolation Actuation Signal)

QUESTION: 026 (1.00)

Which ONE of the following states the effect on most components, which can be actuated by the Engineered Safety Features Actuation System (ESFAS), when their NORMAL/ISOLATE switches are placed in ISOLATE?

a. ESFAS functions are rendered inoperable.

b. Actuation logic is reduced to 1-out-of-2.

c. Components actuate to their accident positions.

d. Pumps/fans start and valves/dampers function normally.

QUESTION: 027 (1.00)

Which ONE of the following indications would appear on the Qualified Safety Parameter Display System (QSPDS) for an "OUT-OF-RANGE/BAD DATA" alarm?

Parameter:

a. field filled with asterisks in the inverse mode.

b. field filled with question marks in the inverse mode.

c. value displayed with a single adjacent asterisk in the inverse mode.

d. value displayed with a single adjacent question mark in the inverse mode.

QUESTION: 028 (1.00)

Which ONE of the following pair of Auxiliary Feed Water (AFW) components is "CYCLED" at RESET point levels by an Auxiliary Feedwater Actuation Signal (AFAS)?

a. AFW pumps 1A & 1B and pump 1C trip throttle valve.

b. Unit 2 AFW solenoids and pump 2C trip throttle valve.

c. Unit 1 AFW MOVs and Unit 2 AFW MOVs.

d. AFW pumps 2A & 2B and Unit 1 AFW MOVs.

QUESTION: 029 (1.00)

Which ONE of the following states the Technical Specification basis for Unit 2 Condensate Storage Tank water volume availability for Auxiliary Feed Water (AFW)?

Sufficient to maintain the Reactor Coolant System at HOT STANDBY for:

a. 4 hours followed by an orderly cooldown to 325 degrees F.

b. 4 hours followed by an orderly cooldown to 350 degrees F.

c. 8 hours followed by an orderly cooldown to 325 degrees F.

d. 8 hours followed by an orderly cooldown to 350 degrees F.

QUESTION: 030 (1.00)

Which ONE of the following Auxiliary Feed Water valves is powered from the "A" 125V DC Bus?

a. Unit 1 "B" Steam Stop Valve (MV-08-14)

b. Unit 2 "B" Steam Stop Valve (MV-08-13)

c. Unit 1 Trip and Throttle Valve (MV-08-03)

d. Unit 2 Trip and Throttle Valve (MV-08-03)

QUESTION: 031 (1.00)

Which ONE of the following actions, performed to transfer to the "C" Condensate pump, actuates the solenoid key release and powers the "OK To Transfer" light at the transfer cubicle?

a. Removal of Trip fuses.

b. Removal of Close fuses.

c. Racking out of breaker.

d. Reinsertion of Trip fuses.

QUESTION: 032 (1.00)

Which ONE of the following Main Feed Water Isolation Valve (MFIV) closures can be overridden?

a. Unit 1 Main Steam Isolation Signal

b. Unit 1 Safety Injection Actuation Signal

c. Unit 2 Main Steam Isolation Signal

d. Unit 2 Auxiliary Feedwater Actuation Signal

QUESTION: 033 (1.00)

Which ONE of the following states the required combinations to meet the Technical Specification Limiting Conditions For Operation for Containment Depressurization And Cooling Systems on Unit 1 in MODE 1?

a. 2 Containment Spray and 4 Containment Fan Coolers

b. 1 Containment Spray and 4 Containment Fan Coolers

c. 2 Containment Spray and 3 Containment Fan Coolers

d. 1 Containment Spray and 3 Containment Fan Coolers

QUESTION: 034 (1.00)

Which ONE of the following states the interlock condition that will close the Waste Gas Release Valve (V6565) while discharging a Waste Gas Decay Tank?

a. Less than TWO Auxiliary Building Main Supply Fans operating.

b. Only ONE Auxiliary Building Main Exhaust Fan operating.

c. No Auxiliary Building Main Exhaust Fan operating.

d. Any Auxiliary Building Main Supply Fan operating.

QUESTION: 035 (1.00)

Which ONE of the following Nuclear Instrumentation Channels uses an uncompensated ion chamber for a detector?

a. Wide-Range Logarithmic Safety Channel

b. Logarithmic Startup Channel

c. Excore Neutron Monitoring System Channel

d. Linear-Power-Range Safety Channel

QUESTION: 036 (1.00)

Which ONE of the following conditions will cause the excore neutron detectors output to increase following a Reactor Trip?

a. Reactor core uncovery during a large break Loss Of Coolant Accident (LOCA).

b. Operating Reactor Coolant Pumps (RCPs) with the reactor vessel upper head voided.

c. Safety Injection flow into the Reactor Coolant System following a Steam Generator Tube Rupture (SGTR).

d. Reactor Coolant System cooldown and depressurization resulting from an unisolable Main Steam Line Break (MSLB).

QUESTION: 037 (1.00)

Given the following plant conditions:

- An operator has lowered an EMPTY fuel grapple on the Refueling Machine by procedure.
- After grappling on to a spent fuel assembly, the operator failed to remove the UNDERLOAD BYPASS switch from the BYPASS position.
- The element was raised to the UP-STOP and repositioned to a new core location.

Which ONE of the following states the effect on the hoist, when lowering the element into the core, as a result of leaving the UNDERLOAD BYPASS in the BYPASS position?

Hoist:

a. speed will be twice as fast as normal and will LOCK-OUT when the hoist box reaches the EXTENDED position.

b. will continue to lower and not be protected from fuel bundle interference at the top of the core.

c. box will remain LATCHED as the hoist is lowered preventing the fuel from reaching the core.

d. motion will NOT automatically STOP when the fuel is seated in the core at CABLE SLACK.

QUESTION: 038 (1.00)

Which ONE of the following statements describes operation of the Main Steam Isolation Valves (MSIVs)?

a. Unit 1 MSIVs get a Safety Injection Actuation Signal (SIAS) to close on High Containment Pressure.

b. Unit 2 MSIVs get a Main Steam Isolation Signal (MSIS) to close on High Containment Pressure.

c. Unit 1 MSIVs fail closed on loss of ALL electrical power to the valves.

d. Unit 2 MSIVs fail open on loss of ALL instrument air to the valves.

QUESTION: 039 (1.00)

Which ONE of the following system functions continues to operate after controls are transferred to the Hot Shutdown Control Panel on Unit 2?

a. Diesel Generator start on loss of 4.16 KV bus voltage.

b. Standby Charging pumps backup stop signal.

c. AFW pump 2A auto start on low Steam Generator level.

d. Low Pressurizer level heater cutout.

QUESTION: 040 (1.00)

Which ONE of the following colors does a Process Radiation Monitor, indicated on the Radiation Monitoring Computer (PC-11), change to for a "LOSS OF COMMUNICATIONS"?

a. White

b. Magenta

c. Dark Blue

d. Light Blue (Cyan)

QUESTION: 041 (1.00)

Given the following Unit 2 plant conditions:

- All Safety Injection Tanks (SITs) have been depressurized to less than 40 psig.
- Shutdown Cooling is in service with LPSI pump A
- Pressurizer is solid.
- Reactor Coolant System is at 98 degrees F.
- SIT 2A2 is LOW and needs filling in preparation for plant heatup.

Which ONE of the following pumps will be used to fill SIT 2A2?

a. HPSI A

b. HPSI B

c. LPSI A

d. LPSI B

QUESTION: 042 (1.00)

Which ONE of the following describes the status of the power supply to the Safety Injection Tank (SIT) Discharge Valves during Reactor Coolant System Fill and Vent?

a. De-energized to minimize motor heating and prolong motor life since valve does not have to function while filling the RCS.

b. Energized to provide emergency boration source in case of a dilution event while filling the RCS.

c. De-energized to preclude spurious operation during pressure changes while venting the RCS.

d. Energized to allow utilizing the SIT inventory for faster filling of the RCS.

QUESTION: 043 (1.00)

Which ONE of the following Reactor Trip signals is an "equipment protective trip" and NOT required for Reactor Protection?

a. Steam Generator Water Level

b. Rate Of Change Of Power

c. Reactor Coolant Flow

d. Containment Pressure

QUESTION: 044 (1.00)

The Asymmetric Steam Generator Transient Protective Trip Function (ASGTPTF) is provided primarily to protect against a slow closure of a single Main Steam Isolation Valve.

Which ONE of the following parameters is used to generate this trip?

a. Valve Position

b. Temperature

c. Pressure

d. Flow

QUESTION: 045 (1.00)

A Reactor Trip signal is sent to the Turbine Auto-Stop Trip solenoid (20 AST) and the Emergency Trip solenoid (20 ET).

Which ONE of the following describes the source of this trip signal?

a. Engineered Safety Features Actuation System

b. Reactor Trip Circuit Breakers Undervoltage Trip Coils

c. Reactor Trip Circuit Breakers Shunt Trip Coils

d. Control Element Drive Mechanism Power Buses Undervoltage Relays

QUESTION: 046 (1.00)

Which ONE of the following Reactor Coolant Loop RTDs failing could be corrected by switching to another RTD without having to switch Reactor Regulating System cabinets?

a. Unit 1 Thot

b. Unit 2 Thot

c. Unit 1 Tcold

d. Unit 2 Tcold

QUESTION: 047 (1.00)

Which ONE of the following states the function of the Turbine First Stage Pressure input to the Reactor Regulating System?

a. Calculation of Steam Bypass Control System Reference Temperature.

b. Calculation of Reactor Coolant System Reference Temperature.

c. Calculation of Pressurizer Level setpoint.

d. Provide for Turbine Runback termination.

QUESTION: 048 (1.00)

Which ONE of the following describes the limits established in Technical Specifications for Steam Generator (SG) primary-to-secondary leakage?

a. Unit 1 has a limit on total leakage through BOTH SGs and a limit on leakage through any ONE SG. Unit 2 has a limit on TOTAL leakage through BOTH SGs only.

b. Unit 2 has a limit on total leakage through BOTH SGs and a limit on leakage through any ONE SG. Unit 1 has a limit on TOTAL leakage through BOTH SGs only.

c. Unit 1 has a limit on total leakage through BOTH SGs and a limit on leakage through any ONE SG. Unit 2 has a limit on leakage through any ONE SG only.

d. Unit 2 has a limit on total leakage through BOTH SGs and a limit on leakage through any ONE SG. Unit 1 has a limit on leakage through any ONE SG only.

QUESTION: 049 (1.00)

Which ONE of the following states the Diesel Generator (DG) fuel oil storage capacity in terms of available time for ONE DG on Unit 2? (Assume total capacity of both the Diesel Oil Storage Tanks.)

a. 4 days

b. 8 days

c. 14 days

d. 28 days

QUESTION: 050 (1.00)

Which ONE of the following states the meaning of the "OVERCRANK" alarm being received while starting the Unit 1 Diesel Generator?

a. Diesel failed to start within a specified amount of time and therefore has been locked out.

b. Diesel has unsuccessfully completed five (5) start attempts.

c. Air pressure is now too low to crank the Diesel due to prolonged continuous cranking.

d. Air pressure is to high and the Diesel is cranking too fast.

QUESTION: 051 (1.00)

Which ONE of the following methods of Diesel Generator emergency shutdown is available on Unit 2 ONLY?

a. Local control panel emergency stop

b. Engine panel emergency stop

c. Control room emergency stop

d. Overspeed latch

QUESTION: 052 (1.00)

A major bus fault occurs on the 4160 V bus 2B3 which results in a DIFFERENTIAL CURRENT LOCK-OUT of that bus.

Which ONE of the following would occur as a result of this condition?

a. The 2B2/2B5 Station Service Transformer Feeder Breaker opens. The Diesel starts but does not attempt to close in on the bus due to the lockout.

b. The 2B2/2B5 Station Service Transformer Feeder Breaker opens. The Diesel does not start due to the lockout.

c. The 2AB to the 2B 480V Load Center Tie Breakers opens. The Diesel starts but does not attempt to close in on the bus due to the lockout.

d. The 2AB to the 2B 480V Load Center Tie Breakers opens. The Diesel does not start due to the lockout.

QUESTION: 053 (1.00)

Which ONE of the following Unit 2 Motor Control Centers (MCCs) can be fed from both 480 V Load Center 2B2 and 2B5?

a. 2B7

b. 2B8

c. 2B9

d. 2B10

QUESTION: 054 (1.00)

Which ONE of the following actions would occur as a result of an "A Header" Component Cooling Water (CCW) radiation monitor HIGH activity alarm on Unit 2?

a. Venting of the CCW Surge Tank to the chemical drain tank.

b. Closure of A header ties to non-essential header valves.

c. Isolation of the CCW Surge Tank makeup.

d. Closure of N header isolation valves.

QUESTION: 055 (1.00)

Which ONE of the following Main Generator protective features will open the Generator Output Breakers (OCBs) and NOT the Auxiliary Transformer Breakers?

a. Negative Sequence Relay

b. Distribution Timer

c. String Bus Relay

d. Underfrequency

QUESTION: 056 (1.00)

Which ONE of the following Component Cooling Water loads is supplied directly from either of the Essential Headers on Unit 2?

a. Letdown Heat Exchanger

b. Waste Gas Compressors

c. Blowdown Radiation Monitor

d. Fuel Pool heat Exchangers

QUESTION: 057 (1.00)

The Steam Bypass Control System develops TWO quick-opening (QO) signals, Reactor Trip and Load Reduction, using some common and some individual inputs for each signal.

Which ONE of the following input signals is used ONLY in the development of the Reactor Trip QO signal?

a. Steam Flow

b. Turbine Load

c. Secondary Pressure

d. Reactor Trip Bus Undervoltage

QUESTION: 058 (1.00)

Given the following plant conditions:

- Unit 1 power has DECREASED from 90% power to 80% power.
- CEAs #44 and #45 have slipped to 90 inches.
- All other Group 5 CEAs are at 120 inches.

Which ONE of the following would be a requirement of ONOP 1-0110030, "CEA Off-Normal Operation And Realignment"?

a. Reduce Reactor power to less than 70% over the next 60 minutes while inserting Group 5 CEAs to 90 inches.

b. Return Reactor power to 90% and attempt to restore CEAs #44 and #45 to 120 inches.

c. Reduce Reactor power to less than 70% over the next 60 minutes while attempting to restore CEAs #44 and #45 to 120 inches.

d. Manually trip the Reactor and implement 1-EOP-01, "Standard Post Trip Actions".

QUESTION: 059 (1.00)

Question Deleted Post Exam - No Right Answer 10-27-94

Given the following plant conditions:

- A large break LOCA condition exists.
- RCS pressure is 150 psia.
- CETs indicate 267 degrees F.
- Both HPSI and LPSI trains are injecting into the RCS.

Which ONE of the following would each of (changed during exam AH 10-24-94) the FOUR LPSI Header Flow indicators be required to indicate, as a MINIMUM, according to 2-EOP-99, Appendixes/Figures/Tables", Figure 2? (References attached.)

a. 350 gpm.

b. 500 gpm.

c. 700 gpm.

d. 1000 gpm.

QUESTION: 060 (1.00)

Which ONE of the following is a response to an Anticipated Transient Without Scram (ATWS) on Unit 1 directed by 1-EOP-01, "Standard Post Trip Actions"?

a. De-energize the MG Sets input breakers.

b. De-energize the MG Sets output breakers.

c. Manually drive CEAs into the core.

d. Emergency borate using the HPSI pumps.

QUESTION: 061 (1.00)

Which ONE of the following plant design limits would be challenged by an Excess Steam Demand Event (ESDE) occurring at HIGH power levels?

a. DNBR limits

b. Shutdown margin limits

c. RCS pressure limits

d. Offsite radiation dose limits

QUESTION: 062 (1.00)

Which ONE of the following states the affect of losing ONE 120V Class 1E Instrument Bus on the Unit 1 Safety Injection System Actuation Signal (SIAS)?

Actuation:

a. occurs on one (1) train.

b. occurs on two (2) trains.

c. logic is reduced to 1 out of 3.

d. logic is reduced to 2 out of 3.

QUESTION: 063 (1.00)

Which ONE of the following AUTOMATIC actions occurs following a HIGH alarm on Liquid Waste Discharge Monitor Unit 1?

a. BOTH Liquid Waste Discharge Isolation valves FCV-6627X and FCV-6627Y CLOSE.

b. ONLY Liquid Waste Discharge Isolation valve FCV-6627X CLOSES.

c. Waste Monitor Tank Isolation Valves FCV-06-1 and FCV-06-2 CLOSE.

d. Header Isolation valve V-06101 CLOSES.

QUESTION: 064 (1.00)

Which ONE of the following conditions represents a loss of CONTAINMENT VESSEL INTEGRITY for Unit 1 as defined in Technical Specifications? (References attached.)

a. While at 100% power, an electrician opens the outer containment airlock door to perform maintenance activities on the CLOSED INOPERABLE inner containment door without prior approval.

b. While performing operability tests on the redundant Containment Vent Header isolation valves (V-6554 and V-6555) at 100% power, one of the two valves (V-6554) fails to CLOSE.

c. While at 100% power, the Nitrogen Supply To The Safety Injection Tanks isolation valve (V-6741), CLOSES in five (5) seconds.

d. The Integrated Containment Leakage Rate Test results indicate a leakage rate of 0.4 of the maximum allowable leakage (La).

QUESTION: 065 (1.00)

Which ONE of the following is the Technical Specification basis for the requirement to cooldown Unit 1 to below 500 degrees F within six (6) hours when specific activity of the coolant exceeds 1.0 microcurie/gram DOSE EQUIVALENT I-131 for greater than 100 hours?

a. Reduces the dissolution of fission products in the reactor coolant.

b. Increases reliability of the data collected for actual iodine determination.

c. Reduces the rate of release if a steam generator tube should simultaneously rupture.

d. Increases coolant density sufficiently to enable self shielding thereby reducing on-site exposure.

QUESTION: 066 (1.00)

Which ONE of the following is the Technical Specification basis for the limit on boron concentration and temperature in the Refueling Water Tank (RWT)?

a. Ensures the reactor remains subcritical in the cold condition following RWT and RCS mixing.

b. Ensures integrity of Charging Pump suction piping by preventing thermal shock conditions.

c. Prevents corrosion attack of system piping during maximum flow conditions.

d. Prevents excessive motor current for the Charging Pumps during maximum flow conditions.

QUESTION: 067 (1.00)

A NOTE in the Emergency Operating Procedure for Excess Steam Demand warns that early consideration should be given to termination of Containment Spray when containment pressure reduces to an acceptable level.

Which ONE of the following states the concern with prolonged Containment Spray operation?

a. rapidly deplete the Refueling Water Tank volume.

b. damage equipment that may be desirable to use later.

c. create excess waste that must later be processed.

d. produce explosive levels of hydrogen in the Containment.

QUESTION: 068 (1.00)

Which ONE of the following is the MINIMUM length of time that safety related batteries will supply power to the Class 1E instrumentation during a Station Blackout condition?

a. 2 hours

b. 3 hours

c. 4 hours

d. 8 hours

QUESTION: 069 (1.00)

Which ONE of the following statements describe the difference between Unit 1 and Unit 2 equipment protection/availability for Control Room Inaccessibility?

a. Unit 1 has "A" train components fire protected and Unit 2 has "BOTH" trains components fire protected.

b. Unit 1 has "A" train components fire protected and Unit 2 has "B" train components fire protected.

c. Unit 1 has "B" train components fire protected and Unit 2 has "BOTH" trains components fire protected.

d. Unit 1 has "B" train components fire protected and Unit 2 has "A" train components fire protected.

QUESTION: 070 (1.00)

Given the following Unit 1 plant conditions:

- A Steam Generator (SG) Tube rupture is in progress on SG 2A.
- An Unisolable Excess Steam Demand Event is in progress on SG 2B.
- 1-EOP-15, "Functional Recovery" has been implemented.

Which ONE of the following states the method of RCS and Core Heat Removal that will be implemented?

a. SG 2A to atmosphere.

b. SG 2B to atmosphere.

c. SG 2A to condenser.

d. SG 2B to condenser.

QUESTION: 071 (1.00)

Which ONE of the following states how Pressurizer level indication is provided at the Hot Shutdown Control Panel (HSCP) for Unit 2?

a. A Normal/Isolate switch isolates LT-1104 and LT-1105 from the control room and transmits the signal to the HSCP.

b. LT-1110X and LT-1110Y provide continuous indication to the HSCP.

c. A Normal/Isolate switch isolates LT-1110X and LT-1110Y from the control room and transmits the signal to the HSCP.

d. LT-1104 and LT-1105 provide continuous indication to the HSCP.

QUESTION: 072 (1.00)

Which ONE of the following conditions on Unit 1 would require and immediate trip of the reactor and turbine according to the Off-Normal Operating Procedure for Loss Of Condenser Vacuum?

a. One circulating water pump trips and condenser differential pressure increases to 4.5" Hg. Abs.

b. Both circulating water pumps for one main condenser trip and condenser differential pressure increases to 1.5" Hg. Abs.

c. Unit operating at 50% power and backpressure increases to 4.5." Hg. Abs.

d. Unit operating at 100% power and back pressure increases to 3.9" Hg. Abs. after hogging ejectors are placed in service.

QUESTION: 073 (1.00)

Which ONE of the following CCW malfunctions would require a trip of the reactor and turbine according to the Off-Normal Operating Procedure for Component Cooling Water (CCW) Off-Normal Operation?

a. Loss of the "1B" CCW Heat Exchanger.

b. Low level in the CCW Surge Tank.

c. Rupture of the "N" CCW Header.

d. High CCW temperature.

QUESTION: 074 (1.00)

Which ONE of the following safety function status checks would be provided for by the following methods during a Station Blackout?

a. Reactivity Control is provided for by emergency boration capabilities.

b. Containment Temperature, Pressure, And Combustible Gas Control is provided for by containment cooling capabilities.

c. RCS Heat Removal is provided for by Auxiliary Feedwater availability.

d. RCS Inventory Control is provided for by Chemical and Volume Control System availability.

QUESTION: 075 (1.00)

When notifying the NPS of a fire emergency condition, which ONE of the following completes the information required to be given?

Type of Emergency, Any Injuries,:

a. Location of Fire, and Damage to Equipment.

b. Location of Fire, and Need for Outside Fire Assistance.

c. Number of Personnel at Scene, and Damage to Equipment.

d. Number of Personnel at Scene, and Need for Outside Fire Assistance.

QUESTION: 076 (1.00)

Which ONE of the following conditions, occurring on Unit 2, would be an acceptable condition to have BOTH doors on one containment air lock open simultaneously?

a. Mode 4 with Shutdown Cooling in service.

b. Making an emergency Containment entry at power.

c. Mode 6 with refueling in progress.

d. During Reactor Coolant Pump seal replacement.

QUESTION: 077 (1.00)

Which ONE of the following states the number of covered Heated Junction Thermocouple positions required to ensure the Hot Leg is covered on BOTH Units?

a. 3

b. 4

c. 5

d. 6

QUESTION: 078 (1.00)

During a plant cooldown with excessive Reactor Coolant System (RCS) activity, boration to shutdown concentration is performed early in the cooldown to maximize the cleanup.

Which ONE of the following RCS parameters forms the basis for performing boration early in the cooldown?

a. flow rate

b. temperature

c. volume

d. pressure

QUESTION: 079 (1.00)

Which ONE of the following parameters would be used to determine that an exhausted Purification Ion Exchanger was the cause for excessive Reactor Coolant System activity?

a. Dose equivalent iodine

b. 100/Ebar computation

c. decontamination factor

d. gross activity

QUESTION: 080 (1.00)

Which ONE of the following conditions occurring on ONE Reactor Coolant Pump (RCP) would require the Reactor to be tripped IMMEDIATELY on Unit 1?

a. Component Cooling Water flow is lost due to a closed valve.

b. Valid, rapidly dropping oil level in the upper reservoir.

c. Two failed seals have been detected.

d. Vibration has increased to 10 mils.

QUESTION: 081 (1.00)

Which ONE of the following controls is available at the Hot Shutdown Control Panel on Unit 1 ONLY? (NOT available on Unit 2)

a. Pressurizer Heaters

b. Auxiliary Feed Water Pumps

c. Letdown Flow Control

d. Power Operated Relief Valve

QUESTION: 082 (1.00)

Which ONE of the following states the concern with possible uncovery of the reactor vessel internals following a loss of shutdown cooling due to leakage?

a. Cooling to a large heat transfer surface is lost.

b. Core exit thermocouple temperatures will be invalid.

c. Fuel assembly buoyancy will displace the upper internals.

d. Extremely high radiation levels will result within containment.

QUESTION: 083 (1.00)

Following a reactor trip, it is desirable to trip TWO reactor coolant pumps (RCPs) and leave TWO operating following a Safety Injection Actuation Signal caused by Reactor Coolant System depressurization.

Which ONE of the following states the basis for this?

a. Cools Reactor Vessel (RV) head region and prevents void formation during a small break loss of coolant accident (SBLOCA).

b. Facilitates rapid Reactor Coolant System cooldown and accelerates RV refill during a large break loss of coolant accident (LBLOCA).

c. Provides forced circulation during plant cooldown following a NON-LOCA event and reduces inventory loss if a misdiagnosed SBLOCA exists.

d. Prevents void formation in the isolated steam generator tubes and facilitates depressurization during a Steam Generator Tube Rupture (SGTR) event.

QUESTION: 084 (1.00)

Which ONE of the following Unit 2 air-operated valves has a backup accumulator air supply on a loss of Instrument Air (IA)?

a. Steam Generator Main Feedwater Regulating Valves (MFRVs)

b. Containment Vacuum Relief Valves

c. Component Cooling Water (CCW) Supply and Return Valves

d. Pressurizer Spray Control Valves

QUESTION: 085 (1.00)

Which ONE of the following states the expected response of the Steam Generator (SG) Blowdown radiation monitor indication following a HIGH activity alarm due to increasing SG Tube Leakage?

a. Continues to indicate SG activity.

b. Increases to full scale.

c. Stabilizes and then slowly decreases.

d. Decreases to minimum scale.

QUESTION: 086 (1.00)

During a cooldown of the Reactor Coolant System (RCS) following a Steam Generator Tube Rupture, it is observed that the isolated steam generator is no longer depressurizing. RCS subcooling is 21 degrees F with RCS pressure and isolated steam generator pressure equal.

Which ONE of the following is the reason that the isolated steam generator pressure is NOT dropping?

a. Thermal stratification is occurring in the isolated steam generator.

b. There is no longer sufficient inleakage of colder water from the RCS.

c. The RCS and the isolated steam generator are in thermal equilibrium.

d. Reverse heat transfer has stopped due to the pressures being equalized.

QUESTION: 087 (1.00)

Which ONE of the following Reactor Coolant System (RCS) break locations would result in the largest RCS energy loss rate?

a. Upstream of the Reactor Vessel Vent Valve.

b. At the Hot Leg tap for the Letdown line.

c. Upstream of a Power Operated Relief Valve.

d. At the top of a Steam Generator Tube.

QUESTION: 088 (1.00)

Which ONE of the following distinguishes between a Small and Large break Loss Of Coolant Accident (LOCA)?

a. A Small break LOCA requires High Pressure and Low Pressure Safety Injection for heat removal.

b. A Large break LOCA requires Steam Generators for heat removal.

c. A Small break LOCA will reach and maintain Shutdown Cooling conditions.

d. A Large break LOCA will void the Reactor Vessel head.

QUESTION: 089 (1.00)

Which ONE of the following would be indicated by an asterisk (*) preceding steps in 1-EOP-02, "Reactor Trip Recovery"?

a. Management directives.

b. Steps which require sign-offs.

c. Regulatory commitments.

d. Steps which may be performed out-of-sequence.

QUESTION: 090 (1.00)

Which ONE of the following is the required time frame for re-diagnosis and exit to the appropriate Emergency Operating Procedure (EOP) if the EOP in use is NOT maintaining safety functions?

a. 5 minutes

b. 10 minutes

c. 15 minutes

d. 20 minutes

QUESTION: 091 (1.00)

Which ONE of the following would be the most likely source of nitrogen in a nitrogen bound Charging Pump?

a. Charging Pump Suction Accumulator

b. Boric Acid Makeup Tank

c. Charging Pump Seal System

d. Refueling Water Tank

QUESTION: 092 (1.00)

On a loss of the "1A3" 4.16 KV bus, which ONE of the following occurs preventing either train of Shutdown Cooling (SDC) from being placed in service on Unit 1?

a. One SDC Hot Leg Suction Valve is de-energized.

b. The SDC Temperature Control Valve (HCV-3657) is de-energized.

c. One Low Pressure Safety Injection Header Isolation Valve in each train is de-energized.

d. The SDC Heat Exchanger Bypass Valve (FCV-3306) fails closed due to a loss of Instrument Air.

QUESTION: 093 (1.00)

Which ONE of the following Off-Normal Operating Procedures (ONOPs) requires verification that the "Extended Range Light" is extinguished?

a. ONOP 1-1210030, "Wide Range Nuclear Instrumentation Channel Malfunction"

b. ONOP 1-1220030, "Linear Power Range Channel Malfunction"

c. ONOP 2-1210030, "Wide Range Nuclear Instrumentation Channel Malfunction"

d. ONOP 2-1220030, "Linear Power Range Channel Malfunction"

QUESTION: 094 (1.00)

Given the following plant conditions:

- A plant trip during startup at 10% power has just occurred.
- Feed line rupture has occurred just downstream of the Main Feedwater Isolation valve for Steam Generator (SG) 2A.
- Both SGs are at 70% Narrow Range and decreasing slowly.
- All Auxiliary Feedwater is unavailable.
- Condensate Pumps are available.

Following completion of EOP-01, "Standard Post Trip Actions", which ONE of the following would be implemented to attempt recovery from these conditions?

a. 2-EOP-05, "Excess Steam Demand"

b. 2-EOP-06, "Total Loss Of Feedwater"

c. 2-EOP-15, "Functional Recovery"

d. 2-EOP-06, "Total Loss Of Feedwater" with 2-EOP-15, "Functional Recovery" for Once-Through-Cooling ONLY

QUESTION: 095 (1.00)

Which ONE of the following radiation monitors reading GREATER THAN a specified amount would require a contingency action to be performed, during performance of the Standard Post Trip Actions?

a. Condenser Air Ejector

b. Containment

c. Main Steam Line

d. Blowdown

QUESTION: 096 (1.00)

Which ONE of the following is NOT an acceptable method of cooling down and depressurizing the isolated Steam Generator according to the Unit 1 Off-Normal Operating Procedure for Steam Generator Tube Leak?

a. Feed and bleed using main or auxiliary feedwater and backflow into the reactor coolant system through the break.

b. Steaming the isolated steam generator to the main condenser.

c. Feed and bleed using main or auxiliary feedwater and blowdown to the steam generator blowdown tank.

d. Steaming the isolated steam generator to atmosphere.

QUESTION: 097 (1.00)

Following a Loss Of Offsite Power on Unit 2, all Reactor Coolant Pump (RCP) oil level indications are reading off-scale LOW.

Which ONE of the following statements explains this indication?

a. RCP oil lift pumps are running.

b. RCPs are not running.

c. Instrument AC power is lost to the SIGMAs.

d. Instrument Air is lost.

QUESTION: 098 (1.00)

Which ONE of the following factors increases the probability of the formation of a steam void in the reactor vessel upper head during a natural circulation cooldown?

a. Excessive cooldown rate and de-pressurization of the RCS.

b. Excessive flow through the upper head area.

c. Exceeding the 200 degree F subcooling limit.

d. Pressurizer level fluctuations.

QUESTION: 099 (1.00)

Which ONE of the following states a condition in which the indicated Pressurizer level would indicate "LOWER" than actual level?

a. Pressurizer temperature less than the temperature for which the level transmitter was calibrated.

b. Rupture in the diaphragm of the Pressurizer level transmitter.

c. Containment pressure and temperature higher than normal.

d. Leak in the variable leg of the Pressurizer level transmitter.

QUESTION: 100 (1.00)

Which ONE of the following states the reason that the CEA Transfer Machine and the Fuel Element Transfer Machine (upenders), must be energized prior to operating the Refueling Machine?

a. To ensure the TV camera and underwater lighting can function properly.

b. So the cooling fans can function to prevent refueling equipment overheating.

c. To ensure all interlock relays between refueling equipment can function properly.

d. So the heaters can function to prevent moisture buildup on the internal relays.

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

ANSWER: 001 (1.00)

c.

REFERENCE:

Unit 1 Tech Spec 3.1.1.5, pg. 3/4 1-6.
Unit 2 Tech Spec 3.1.1.5, pg. 3/4 1-7.
LP DN 0902723, obj. 6
1992/04/27 NRC Exam

[4.1/3.9]

194001A102 ..(KA's)

ANSWER: 002 (1.00)

b.

REFERENCE:

AP 1-0010123, pg. 4
AP 2-0010123, pg. 4
LP 0902722, obj. 26
1992/04/27 NRC Exam

[3.7/4.1]

194001K102 ..(KA's)

ANSWER: 003 (1.00)

a.

REFERENCE:

General Employee Training Level I, "Fire Protection", pg 10.
NO FACILITY OBJECTIVE FOUND
1993/10/29 NRC Exam

[3.5/4.2]

194001K116 ..(KA's)

ANSWER: 004 (1.00)

c.

REFERENCE:

AP 0010119, pg. 3
LP DN-0902712, obj. 16 & 17
1992/04/27 NRC Exam

[2.5/3.4]

194001A103 ..(KA's)

ANSWER: 005 (1.00)

c.

REFERENCE:

AP 1-0010123, pg. 6
OP 0010122, pg. 3
LP 0902722, obj. 4
1992/04/27 NRC Exam (Modified)

[3.6/3.7]

194001K101 ..(KA's)

ANSWER: 006 (1.00)

b.

REFERENCE:

HP-1, pg. 12
NO FACILITY OBJECTIVE FOUND
1993/10/29 NRC Exam

[2.8/3.4]

194001K103 ..(KA's)

ANSWER: 007 (1.00)

a.

REFERENCE:

QI 5PR/PSL-1, pgs. 31-36
LP 0702802, obj. 2
LP 0902712, obj. 21
1993/10/29 NRC Exam (Modified)

[3.3/3.4]

194001A101 ..(KA's)

ANSWER: 008 (1.00)

a.

REFERENCE:

General Employee Training Level I, "Emergency Conditions", pg 8.
NO FACILITY OBJECTIVE FOUND

[3.1/4.4]

194001A116 ..(KA's)

ANSWER: 009 (1.00)

b.

REFERENCE:

OP 0010122, pg. 3
LP DN 0702802, obj. 6
LP 0702804, obj. 3
Facility Question 073577 (Modified)

[3.6/3.7]

194001K101 ..(KA's)

ANSWER: 010 (1.00)

d.

REFERENCE:

OP 0010122, pg. 2
LP 0702804, obj. 2

[3.7/4.1]

194001K102 ..(KA's)

ANSWER: 011 (1.00)

c.

REFERENCE:

AP 0010135, pg. 1 & 2
LP 0702841, obj. 22 & 23

[3.7/4.1]

194001K102 ..(KA's)

ANSWER: 012 (1.00)

a.

REFERENCE:

AP 0010124, pg. 1 & 2
LP 0702841, obj. 13 & 14

[3.6/3.7]

194001K107 ..(KA's)

ANSWER: 013 (1.00)

c.

REFERENCE:

Unit 1 Tech Specs, pg. 6-2 & 6-4
AP 0010120, pg. 35
AP 1800022, pg. 36
LP 0702841, obj. 3 & 11

[2.5/3.4]

194001A103 ..(KA's)

ANSWER: 014 (1.00)

c.

REFERENCE:

AP 0010120, pg. 44-46
AP 0010124, pg. 4
OP 0010122, pg. 23
OP 0010129, pg. 4
LP 0702804, obj. 4

[3.4/3.4]

194001A106 ..(KA's)

ANSWER: 015 (1.00)

d.

REFERENCE:

AP 0010120, pg. 54
LP 0702841, obj. 8.c

[4.1/3.9]

194001A102 ..(KA's)

ANSWER: 016 (1.00)

b.

REFERENCE:

EPIP 3100023E, pg. 18
LP 0702833, pg. 7
LP 0702833, obj. 6

[3.1/4.4]

194001A116 ..(KA's)

ANSWER: 017 (1.00)

c.

REFERENCE:

AP 0010120, pg.31
LP 0702841, obj. 1 & 4

[3.1/4.1]

194001A112 ..(KA's)

ANSWER: 018 (1.00)

b.

REFERENCE:

LT 0711205, pg. 19
LP 0702205, obj. 8.b
1993/10/29 NRC Exam

[3.8/4.0]

004000K115 ..(KA's)

ANSWER: 019 (1.00)

d.

REFERENCE:

OP 1-0030123, pg. 2
OP 2-0030123, pg. 2
LP 0702801, obj. 1

[3.8/4.1]

001000K506 ..(KA's)

ANSWER: 020 (1.00)

a.

REFERENCE:

P&ID 8770-G-078, sh. 120
LP 0702205, obj. 3.a, 3.b, & 3.d

[3.6/4.2]

004000A203 ..(KA's)

ANSWER: 021 (1.00)

b.

REFERENCE:

LT 0711202, pg. 26
LP 0702202, obj. 7.a & 8.d

[2.9/2.9]

003000A102 ..(KA's)

ANSWER: 022 (1.00)

c.

REFERENCE:

LT 0711202, pg. 5 & 25
LP 0702202, obj. 8.c

[3.0/3.3]

003000K112 ..(KA's)

ANSWER: 023 (1.00)

d.

REFERENCE:

LT 0711205, pgs. 8, 10, 37, & 38
LP 0702205, pgs. 4, 6, 26, & 27
LP 0702205, obj. 1 & 2.b

[2.8/3.2]

004000K504 ..(KA's)

ANSWER: 024 (1.00)

c.

REFERENCE:

LT 0711401, pg. 9 & 10
LP 0702401, obj. 10.d & 10.e

[4.5/4.7]

013000A403 ..(KA's)

ANSWER: 025 (1.00)

c.

REFERENCE:

LT 0711401, pg. 17
LP 0702401, obj. 3

[2.7/3.1]

013000K409 ..(KA's)

ANSWER: 026 (1.00)

a.

REFERENCE:

LT 0711401, pg. 13
LP 0702401, obj. 8.f

[4.1/4.2]

013000A302 ..(KA's)

ANSWER: 027 (1.00)

b.

REFERENCE:

LT 0711407, pg. 26 & 27
LP 0702407, obj. 8.d & 9

[3.1/3.2]

017000G008 ..(KA's)

ANSWER: 028 (1.00)

c.

REFERENCE:

LT 0711412, pg. 57
LP 0702412, obj. 10

[2.5/2.8]

061000K601 ..(KA's)

ANSWER: 029 (1.00)

b.

REFERENCE:

Unit 2 Tech Spec Bases, pg. B 3/4 7-2
LP 0702412, obj. 2.d

[4.4/4.6]

061000K301 ..(KA's)

ANSWER: 030 (1.00)

b.

REFERENCE:

AP 2-0010720, pg. 335 & 336
LT 0711412, pg. 11 & 12
LP 0702412, obj. 2.c & 5.c

[3.2/3.3]

061000K201 ..(KA's)

ANSWER: 031 (1.00)

d.

REFERENCE:

LT 0711301, pg. 34
LP 0702301, obj. 2.c

[2.6/2.8]

056000G001 ..(KA's)

ANSWER: 032 (1.00)

d.

REFERENCE:

LT 0711301, pg. 11
LP 0702301, obj. 9.c

[3.4/3.4]

059000K102 ..(KA's)

ANSWER: 033 (1.00)

a.

REFERENCE:

Unit 1 Tech Specs, pg. 3/4 6-15 & 3/4 6-17
LP 0702207, obj. 14 & 18

[3.0/3.7]

022000G005 ..(KA's)

ANSWER: 034 (1.00)

c.

REFERENCE:

LT 0711601, pg. 25
LP 0702601, obj. 2.c

[2.9/3.4]

071000K404 ..(KA's)

ANSWER: 035 (1.00)

d.

REFERENCE:

LT 0711403, pg. 25 & 39
LP 0702403, obj. 1.a & 2

[2.9/3.2]

015000K601 ..(KA's)

ANSWER: 036 (1.00)

a.

REFERENCE:

LT 0711832, pg. 17
LP 0702832, obj. 4

[3.9/3.9]

015000A402 ..(KA's)

ANSWER: 037 (1.00)

b.

REFERENCE:

LT 0711208, pg. 2-16
LP 0702208, obj. 6.a
1992/04/27 NRC Exam

[2.6/3.4]

034000K401 ..(KA's)

ANSWER: 038 (1.00)

b.

REFERENCE:

LT 0711304, pgs. 15 thru 19
LP 0702304, obj. 5.c & 6.a

[3.7/3.7]

039000K405 ..(KA's)

ANSWER: 039 (1.00)

a.

REFERENCE:

OJT 0705012, pgs. 10 & 11
OJT 0705012, obj. 11, 22, 23, & 24

[2.9/3.3]

011000K603 ..(KA's)

ANSWER: 040 (1.00)

b.

REFERENCE:

LT 0711411, pg. 36
LP 0702411, obj. 10.a

[3.7/3.7]

073000A402 ..(KA's)

ANSWER: 041 (1.00)

c.

REFERENCE:

OP 2-0410021, pg. 9
LP 0702207, obj. 4.e & 11.d

[3.9/4.2]

006000K406 ..(KA's)

ANSWER: 042 (1.00)

c.

REFERENCE:

OP 1-0120020, pg. 6
OP 2-0120020, pg. 5
LT 0711207, pg. 17
LP 0702207, obj. 11.a & 12

[3.6/3.7]

006000K410 ..(KA's)

ANSWER: 043 (1.00)

b.

REFERENCE:

LT 0711404, pg. 11
LP 0702404, obj. 2.c

[3.9/4.3]

012000K402 ..(KA's)

ANSWER: 044 (1.00)

c.

REFERENCE:

LT 0711404, pg. 17
LP 0702404, obj. 2.b

[3.3/3.8]

012000K501 ..(KA's)

ANSWER: 045 (1.00)

d.

REFERENCE:

LT 0711404, pg. 33
LP 0702404, obj. 9, 11

[3.2/3.3]

012000K302 ..(KA's)

ANSWER: 046 (1.00)

c.

REFERENCE:

LT 0711402, pg. 7 and fig. 7 & 8
LP 0702402, obj. 3.b, 6.a, 8.a, & 8.b

[3.0/3.1]

016000A201 ..(KA's)

ANSWER: 047 (1.00)

b.

REFERENCE:

LT 0711402, pg. 8
LP 0702402, obj. 3.c, 5.b, & 8.c

[3.4/3.4]

016000K101 ..(KA's)

ANSWER: 048 (1.00)

b.

REFERENCE:

Unit 1 Tech Specs, pg. 3/4 4-14
Unit 2 Tech Specs, pg. 3/4 4-19
LP 0702201, obj. 10

[3.2/3.8]

035000G005 ..(KA's)

ANSWER: 049 (1.00)

c.

REFERENCE:

LT 0711501, pg. 24 & 26
LP 0702501, pgs. 7-12
LP 0702501, obj. 10 & 18.f

[2.5/2.8]

064000A102 ..(KA's)

ANSWER: 050 (1.00)

a.

REFERENCE:

LT 0711501, pg. 22
LP 0702501, obj. 6

[4.1/4.0]

064000A301 ..(KA's)

ANSWER: 051 (1.00)

c.

REFERENCE:

LP 0702501, pgs. 48, 57, & 60
LP 0702501, obj. 17, 18.c & 18.e

[3.7/3.7]

064000G009 ..(KA's)

ANSWER: 052 (1.00)

a.

REFERENCE:

LT 0711502, pg. 15 & 16
LP 0702501, pg. 55
LP 0702501, obj. 16.g
LP 0702502, obj. 6 & 7.b

[3.2/3.6]

062000A212 ..(KA's)

ANSWER: 053 (1.00)

c.

REFERENCE:

LT 0711502, fig. 1B
LP 0702502, obj. 2.a

[3.3/3.4]

062000K201 ..(KA's)

ANSWER: 054 (1.00)

a.

REFERENCE:

LT 0711209, pg. 9 & 10
LT 0711411, pg. 32
LP 0702209, obj. 3 & 5.e
LP 0702411, obj. 5.a & 5.b

[3.3/3.5]

008000A204 ..(KA's)

ANSWER: 055 (1.00)

d.

REFERENCE:

LT 0711307, pg. 44
LP 0702307, obj. 9.c, 9.d, 10, & 12

[2.9/3.2]

045010K301 ..(KA's)

ANSWER: 056 (1.00)

d.

REFERENCE:

LT 0711209, pg. 19
LP 0702209, obj. 1

[3.4/3.5]

008000K301 ..(KA's)

ANSWER: 057 (1.00)

c.

REFERENCE:

LT 0711406, pg. 10
LP 0702406, obj. 4.b

[2.7/2.9]

041020K603 ..(KA's)

ANSWER: 058 (1.00)

d.

REFERENCE:

ONOP 1-0110030, pg. 4
LP 0702812, obj. 2
1992/04/27 NRC Exam

[3.3/3.5]

000003G012 ..(KA's)

ANSWER: 059 (1.00)

b.

REFERENCE:

2-EOP-99, Figure 2
LP 0902704, obj. 5
Facility Question 073488
1992/04/27 NRC Exam

[4.5/4.7]

000011A210 ..(KA's)

Question Deleted
Post Exam - No Right Answer
10-27-94

ANSWER: 060 (1.00)

a.

REFERENCE:

1-EOP-01, pg. 3
ONOP 1-0250030, pg. 5
LP 0702822, obj. 4
1992/04/27 NRC Exam

[4.5/4.5]

000029G010 ..(KA's)

ANSWER: 061 (1.00)

a.

REFERENCE:

LT 0711826, pg. 17
LP 0702826, obj. 2
Facility Question 081162
1992/04/27 NRC Exam

[3.3/3.7]

000040G007 ..(KA's)

ANSWER: 062 (1.00)

c.

REFERENCE:

ONOP 1-0970030, pg. 4
LP 0702812, obj. 44
1992/04/27 NRC Exam

[4.0/4.3]

000057A219 ..(KA's)

ANSWER: 063 (1.00)

b.

REFERENCE:

ONOP 1-0510030, pg. 2
LP 0702812, obj. 4
1992/04/27 NRC Exam

[3.6/3.9]

000059A205 ..(KA's)

ANSWER: 064 (1.00)

b.

REFERENCE:

Unit 1 Tech Spec Definition 1.7, pg. 1-2
Unit 1 Tech Spec 3.6.1.1, pg. 3/4 6-1
Unit 1 Tech Spec 3.6.1.2, pg. 3/4 6-2
Unit 1 Tech Spec 3.6.1.3, pg. 3/4 6-10
Unit 1 Tech Spec 3.6.3.1, pg. 3/4 6-18
LP 0702812, obj. 51
LP DN 0902723, obj. 2
1992/04/27 NRC Exam

[3.7/4.3]

000069A201 ..(KA's)

ANSWER: 065 (1.00)

c.

REFERENCE:

Unit 1 Tech Spec Bases 3.4.8, pg B 3/4 4-6
LP DN 0902723, obj. 3
1992/04/27 NRC Exam

[3.2/3.8]

000076K306 ..(KA's)

ANSWER: 066 (1.00)

a.

REFERENCE:

Tech Spec Bases 3.5.4, pg. B 3/4 5-2
LP DN 0902723, obj. 3
1992/04/27 NRC Exam

[2.8/3.6]

000024K104 ..(KA's)

ANSWER: 067 (1.00)

b.

REFERENCE:

1-EOP-05, pg. 17
2-EOP-05, pg. 17
LT 0711826, pg. 28
LP 0702826, obj. 2
1993/10/29 NRC Exam

[4.5/4.7]

000040K304 ..(KA's)

ANSWER: 068 (1.00)

c.

REFERENCE:

LT 0711503, pg. 6
LP 0702503, obj. 5.c.1)
1992/04/27 NRC Exam

[2.7/3.4]

000055K301 ..(KA's)

ANSWER: 069 (1.00)

d.

REFERENCE:

ONOP 1-0030135, pg. 5
ONOP 2-0030135, pg. 5
LP 0702812, obj. 7 & 8
1992/04/27 NRC Exam

[3.1/4.3]

000067A204 ..(KA's)

ANSWER: 070 (1.00)

a.

REFERENCE:

1-EOP-15, pg. 96 & 99
LP 0702828, obj. 3 & 6

[3.7/3.8]

000040K106 ..(KA's)

ANSWER: 071 (1.00)

d.

REFERENCE:

LT 0711206, pg. 49
LP 0702206, obj. 3 & 6.h

[3.9/4.0]

000068K201 ..(KA's)

ANSWER: 072 (1.00)

a.

REFERENCE:

ONOP 1-0610031, pgs. 6-8
LP 0702812, obj. 2 & 38

[3.9/4.1]

000051A202 ..(KA's)

ANSWER: 073 (1.00)

c.

REFERENCE:

ONOP 1-0310030, pg. 10
ONOP 2-0310030, pg. 11
LP 0702812, obj. 5 & 30.e

[4.0/4.2]

000026K303 ..(KA's)

ANSWER: 074 (1.00)

c.

REFERENCE:

LT 0711830, pg. 11
LP 0702830, obj. 7

[3.7/4.1]

000055A204 ..(KA's)

ANSWER: 075 (1.00)

a.

REFERENCE:

EPIP 3100025E, pg. 4
EPIP 3100029E, pg. 3
LP 0702833, pg. 8
LP 0702833, obj. 8

[3.4/3.4]

000067G012 ..(KA's)

ANSWER: 076 (1.00)

d.

REFERENCE:

ONOP 2-1300030, pg. 4
LP 0702812, obj. 2 & 51

[3.3/3.9]

000069G003 ..(KA's)

ANSWER: 077 (1.00)

b. c. AHH 10-12-94

REFERENCE:

LT 0711407, fig. 21a & 21b
LP 0702407, obj. 6.a, 8.a, & 8.d

[4.2/4.4]

000074A101 ..(KA's)

ANSWER: 078 (1.00)

a.

REFERENCE:

ONOP 1-0120032, pg. 10
ONOP 2-0120032, pg. 10
LP 0702812, obj. 5

[3.2/3.8]

000076K306 ..(KA's)

ANSWER: 079 (1.00)

c.

REFERENCE:

ONOP 1-0120032, pg. 6
ONOP 2-0120032, pg. 6
LP 0702812, obj. 14

[3.2/3.4]

000076A104 ..(KA's)

ANSWER: 080 (1.00)

b.

REFERENCE:

ONOP 1-0120034, pg. 4 & 6
LP 0702812, obj. 2

[3.4/3.4]

000015G010 ..(KA's)

ANSWER: 081 (1.00)

d.

REFERENCE:

OJT 0705012, pg. 9
OJT 0705012, obj. 5 & 6

[3.9/4.0]

000068K201 ..(KA's)

ANSWER: 082 (1.00)

d.

REFERENCE:

ONOP 1-0440030, pg. 7
ONOP 2-0440030, pg. 7
LP 0702812, obj. 5
1993/10/29 NRC Exam

[3.4/3.6]

000025G007 ..(KA's)

ANSWER: 083 (1.00)

c.

REFERENCE:

LT 0711825, pg. 29
LP 0702825, obj. 10
LP 0902704, obj. 1
1992/04/27 NRC Exam

[4.1/4.2]

000038K308 ..(KA's)

ANSWER: 084 (1.00)

b.

REFERENCE:

LT 0711413, pg. 42
LP 0702413, obj. 5.g
1992/04/27 NRC Exam

[2.8/3.2]

000065A207 ..(KA's)

ANSWER: 085 (1.00)

c.

REFERENCE:

ONOP 1-1110037, pg. 1
ONOP 2-1110037, pg. 2
LP 0702812, obj. 47

[3.9/4.0]

000037A113 ..(KA's)

ANSWER: 086 (1.00)

a.

REFERENCE:

LT 0711825, pg. 39
LP 0702825, obj. 5

[3.9/4.2]

000038K103 ..(KA's)

ANSWER: 087 (1.00)

c.

REFERENCE:

LT 0711824, pg. 9
LP 0702824, pg. 8
LP 0702824, obj. 5.b

[3.2/3.7]

000008K101 ..(KA's)

ANSWER: 088 (1.00)

c.

REFERENCE:

LT 0711824, pg. 8 & 9
LP 0702824, obj. 2

[4.2/4.5]

000009K321 ..(KA's)

ANSWER: 089 (1.00)

d.

REFERENCE:

1-EOP-02, pg. 3
AP 0010120, pg. 49
LP 0702841, obj. 8.c

[3.8/3.9]

000007G012 ..(KA's)

ANSWER: 090 (1.00)

c.

REFERENCE:

AP 0010120, pg. 49
LP 0702841, obj. 8.c

[4.0/4.6]

000007K301 ..(KA's)

ANSWER: 091 (1.00)

a.

REFERENCE:

ONOP 1-0210030, 5
ONOP 2-0210030, 5
LP 0702812, obj. 5 & 25

[3.2/3.7]

000022A202 ..(KA's)

ANSWER: 092 (1.00)

a.

REFERENCE:

LT 0711207, pg. 20 & 21
LP 0702207, obj. 5.a

[3.2/3.2]

000025K202 ..(KA's)

ANSWER: 093 (1.00)

a.

REFERENCE:

ONOP 1-1210030, pg. 5
LT 0711403, pgs. 17 & 18
LP 0702403, obj. 8.d
LP 0702812, obj. 5 & 49

[2.7/3.1]

000032K201 ..(KA's)

ANSWER: 094 (1.00)

b.

REFERENCE:

LT 0711827, pg. 6 & 28
LP 0702827, obj. 8

[4.4/4.6]

000054K304 ..(KA's)

ANSWER: 095 (1.00)

b.

REFERENCE:

1-EOP-01, pg. 10
2-EOP-01, pg. 10
LP 0702822, obj. 4

[3.3/3.3]

000061G010 ..(KA's)

ANSWER: 096 (1.00)

c.

REFERENCE:

ONOP 1-0830030, pg. 13 & 14
LP 0702812, obj. 5 & 41.d

[3.7/3.6]

000037A101 ..(KA's)

ANSWER: 097 (1.00)

d.

REFERENCE:

LT 0711202, pg. 20
LP 0702202, pg. 13
LP 0702202, 3.c

[3.6/3.6]

000009A109 ..(KA's)

ANSWER: 098 (1.00)

a.

REFERENCE:

LP 0702835, pg. 35
LP 0702812, obj. 23
LP 0702835, obj. 12.a
1992/04/27 NRC Exam

[4.4/4.7]

000056K302 ..(KA's)

ANSWER: 099 (1.00)

d.

REFERENCE:

LP 0702812, pg. 26
LP 0702812, obj. 19

[2.8/3.1]

000028K101 ..(KA's)

ANSWER: 100 (1.00)

c.

REFERENCE:

LP 0702208, obj. 1.h, 3.c
Facility Question 081113

[3.1/3.7]

000036A104 ..(KA's)

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

A N S W E R K E Y

MULTIPLE CHOICE

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

A N S W E R K E Y

046 c

MULTIPLE CHOICE

047 b

048 b

049 c

050 a

051 c

052 a

053 c

054 a

055 d

056 d

057 c

058 d

~~059 b~~ Deleted Post Exam MH 10-27-94

060 a

061 a

062 c

063 b

064 b

065 c

066 a

067 b

068 c

069 d

070 a

071 d

072 a

073 c

074 c

075 a

076 d

MH 10-12-94 077 ~~b~~ c

078 a

079 c

080 b

081 d

082 d

083 c

084 b

085 c

086 a

087 c

088 c

089 d

090 c

A N S W E R K E Y

091 a

MULTIPLE CHOICE

092 a

093 a

094 b

095 b

096 c

097 d

098 a

099 d

100 c

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

S R O E x a m P W R R e a c t o r

O r g a n i z e d b y Q u e s t i o n N u m b e r

QUESTION	VALUE	REFERENCE
001	1.00	26740
002	1.00	26834
003	1.00	26670
004	1.00	26836
005	1.00	26835
006	1.00	39137
007	1.00	39134
008	1.00	9000166
009	1.00	9000167
010	1.00	9000168
011	1.00	30319
012	1.00	9000170
013	1.00	9000171
014	1.00	9000172
015	1.00	9000173
016	1.00	9000174
017	1.00	25227
018	1.00	39150
019	1.00	9000182
020	1.00	9000183
021	1.00	9000184
022	1.00	30335
023	1.00	9000186
024	1.00	9000187
025	1.00	9000188
026	1.00	9000189
027	1.00	25245
028	1.00	30347
029	1.00	25249
030	1.00	9000193
031	1.00	9000194
032	1.00	9000195
033	1.00	9000196
034	1.00	30344
035	1.00	9000198
036	1.00	25243
037	1.00	26807
038	1.00	9000205
039	1.00	9000206
040	1.00	9000207
041	1.00	9000208
042	1.00	9000209
043	1.00	9000210
044	1.00	9000211
045	1.00	9000212
046	1.00	9000213
047	1.00	9000214
048	1.00	30418
049	1.00	9000216

S R O E x a m P W R R e a c t o r

O r g a n i z e d b y Q u e s t i o n N u m b e r

QUESTION	VALUE	REFERENCE	
050	1.00	25266	
051	1.00	9000218	
052	1.00	25265	
053	1.00	9000220	
054	1.00	9000225	
055	1.00	9000226	
056	1.00	9000227	
057	1.00	9000228	
058	1.00	26767	
~~059~~	~~1.00~~	~~26815~~	Deleted Post Exam MH 10-27-94
060	1.00	26754	
061	1.00	26831	
062	1.00	26828	
063	1.00	26823	
064	1.00	26786	
065	1.00	26782	
066	1.00	26762	
067	1.00	39521	
068	1.00	26755	
069	1.00	26821	
070	1.00	9000245	
071	1.00	9000246	
072	1.00	9000247	
073	1.00	30392	
074	1.00	9000249	
075	1.00	9000250	
076	1.00	9000251	
077	1.00	9000252	
078	1.00	9000253	
079	1.00	9000254	
080	1.00	9000255	
081	1.00	9000256	
082	1.00	39200	
083	1.00	26781	
084	1.00	26751	
085	1.00	9000264	
086	1.00	30420	
087	1.00	9000266	
088	1.00	9000267	
089	1.00	30412	
090	1.00	9000269	
091	1.00	30414	
092	1.00	9000271	
093	1.00	9000272	
094	1.00	9000273	
095	1.00	25296	
096	1.00	9000275	
097	1.00	9000276	
098	1.00	26829	

S R O E x a m P W R R e a c t o r

O r g a n i z e d b y Q u e s t i o n N u m b e r

QUESTION	VALUE	REFERENCE
099	1.00	9000279
100	1.00	9000280
	100.00	
	100.00	

S R O E x a m P W R R e a c t o r

O r g a n i z e d b y K A G r o u p

PLANT WIDE GENERICS

QUESTION	VALUE	KA
007	1.00	194001A101
015	1.00	194001A102
001	1.00	194001A102
013	1.00	194001A103
004	1.00	194001A103
014	1.00	194001A106
017	1.00	194001A112
008	1.00	194001A116
016	1.00	194001A116
009	1.00	194001K101
005	1.00	194001K101
002	1.00	194001K102
011	1.00	194001K102
010	1.00	194001K102
006	1.00	194001K103
012	1.00	194001K107
003	1.00	194001K116

PWG Total	17.00	

PLANT SYSTEMS

Group I

QUESTION	VALUE	KA
019	1.00	001000K506
021	1.00	003000A102
022	1.00	003000K112
020	1.00	004000A203
018	1.00	004000K115
023	1.00	004000K504
026	1.00	013000A302
024	1.00	013000A403
025	1.00	013000K409
036	1.00	015000A402
035	1.00	015000K601
027	1.00	017000G008
033	1.00	022000G005
031	1.00	056000G001
032	1.00	059000K102
030	1.00	061000K201
029	1.00	061000K301
028	1.00	061000K601
034	1.00	071000K404

S R O E x a m P W R R e a c t o r

O r g a n i z e d b y K A G r o u p

PLANT SYSTEMS

Group I

QUESTION	VALUE	KA
PS-I Total	19.00	

Group II

QUESTION	VALUE	KA
041	1.00	006000K406
042	1.00	006000K410
039	1.00	011000K603
045	1.00	012000K302
043	1.00	012000K402
044	1.00	012000K501
046	1.00	016000A201
047	1.00	016000K101
037	1.00	034000K401
048	1.00	035000G005
038	1.00	039000K405
052	1.00	062000A212
053	1.00	062000K201
049	1.00	064000A102
050	1.00	064000A301
051	1.00	064000G009
040	1.00	073000A402
PS-II Total	17.00	

Group III

QUESTION	VALUE	KA
054	1.00	008000A204
056	1.00	008000K301
057	1.00	041020K603
055	1.00	045010K301
PS-III Total	4.00	
PS Total	40.00	

EMERGENCY PLANT EVOLUTIONS

Group I

S R O E x a m P W R R e a c t o r

O r g a n i z e d b y K A G r o u p

EMERGENCY PLANT EVOLUTIONS

Group I

QUESTION	VALUE	KA
058	1.00	000003G012
~~059~~	~~1.00~~	~~000011A210~~ Deleted Post Exam MH 10-27-94
080	1.00	000015G010
066	1.00	000024K104
073	1.00	000026K303
060	1.00	000029G010
061	1.00	000040G007
070	1.00	000040K106
067	1.00	000040K304
072	1.00	000051A202
074	1.00	000055A204
068	1.00	000055K301
062	1.00	000057A219
063	1.00	000059A205
069	1.00	000067A204
075	1.00	000067G012
071	1.00	000068K201
081	1.00	000068K201
064	1.00	000069A201
076	1.00	000069G003
077	1.00	000074A101
079	1.00	000076A104
065	1.00	000076K306
078	1.00	000076K306
EPE-I Total	24.00	

Group II

QUESTION	VALUE	KA
089	1.00	000007G012
090	1.00	000007K301
087	1.00	000008K101
097	1.00	000009A109
088	1.00	000009K321
091	1.00	000022A202
082	1.00	000025G007
092	1.00	000025K202
093	1.00	000032K201
096	1.00	000037A101
085	1.00	000037A113
086	1.00	000038K103
083	1.00	000038K308
094	1.00	000054K304

S R O E x a m P W R R e a c t o r

O r g a n i z e d b y K A G r o u p

EMERGENCY PLANT EVOLUTIONS

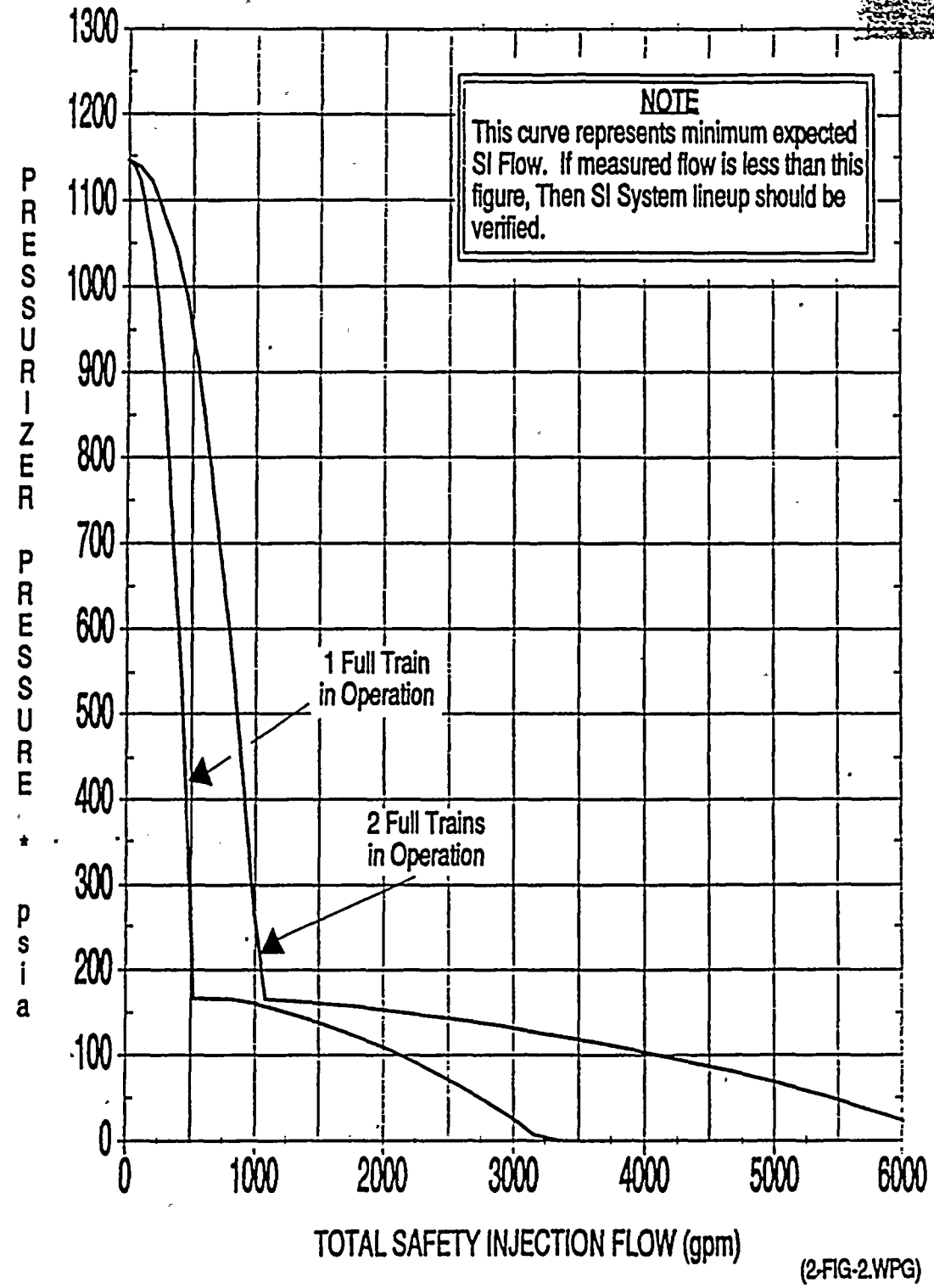
Group II

QUESTION	VALUE	KA
095	1.00	000061G010
084	1.00	000065A207
EPE-II Total	16.00	

Group III

QUESTION	VALUE	KA
099	1.00	000028K101
100	1.00	000036A104
098	1.00	000056K302
EPE-III Total	3.00	
EPE Total	43.00	
Test Total	100.00	

FIGURE 2
SAFETY INJECTION FLOW VS. RCS PRESSURE



(2-FIG-2.WPG)

3/4.6 CONTAINMENT SYSTEMS

3/4.6.1 CONTAINMENT VESSEL

CONTAINMENT VESSEL INTEGRITY

LIMITING CONDITION FOR OPERATION

3.6.1.1 CONTAINMENT VESSEL INTEGRITY shall be maintained.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

Without CONTAINMENT VESSEL INTEGRITY, restore CONTAINMENT VESSEL INTEGRITY within one hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.1.1 CONTAINMENT VESSEL INTEGRITY shall be demonstrated:

a. At least once per 31 days by verifying that:

1. All containment vessel penetrations* not capable of being closed by OPERABLE containment automatic isolation valves and required to be closed during accident conditions are closed by valves, blind flanges, or deactivated automatic valves secured in their positions, except as provided in Table 3.6-2 of Specification 3.6.3.1, and

2. All containment vessel equipment hatches are closed and sealed.

b. By verifying that each containment vessel air lock is OPERABLE per Specification 3.6.1.3.

*Except valves, blind flanges, and deactivated automatic valves which are located inside the containment and are locked, sealed or otherwise secured in the closed position. These penetrations shall be verified closed during each COLD SHUTDOWN except that such verification need not be performed more often than once per 92 days.

CONTAINMENT SYSTEMS

CONTAINMENT LEAKAGE

LIMITING CONDITION FOR OPERATION

3.6.1.2 Containment leakage rates shall be limited to:

a. An overall integrated leakage rate of:

1. $\leq L_a$, 0.50 percent by weight of the containment air per 24 hours at P_a, (39.6 psig), or

2. $\leq L_t$, 0.32 percent by weight of the containment air per 24 hours at a reduced pressure of P_t, (19.8 psig).

b. A combined leakage rate of $\leq 0.60\ L_a$ for all penetrations and valves subject to Type B and C tests as identified in Table 3.6-1 when pressurized to P_a.

c. A combined leakage rate of $\leq 0.27\ L_a$ for all penetrations identified in Table 3.6-1 as secondary containment bypass leakage paths when pressurized to P_a.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With either (a) the measured overall integrated containment leakage rate exceeding $0.75\ L_a$ or $0.75\ L_t$, as applicable, or (b) with the measured combined leakage rate for all penetrations and valves subject to Types B and C tests exceeding $0.60\ L_a$, or (c) with the combined bypass leakage rate exceeding $0.27\ L_a$, restore the leakage rate(s) to within the limit(s) prior to increasing the Reactor Coolant System temperature above 200°F.

SURVEILLANCE REQUIREMENTS

4.6.1.2 The containment leakage rates shall be demonstrated at the following test schedule and shall be determined in conformance with the criteria specified in Appendix J of 10 CFR 50:

a. Type A test shall be performed in accordance with 10 CFR 50 Appendix J, as modified by approved exemptions.

SURVEILLANCE REQUIREMENTS (Continued)

b. If any periodic Type A test fails to meet either .75 L_a or .75 L_t, the test schedule for subsequent Type A tests shall be reviewed and approved by the Commission. If two consecutive Type A tests fail to meet either .75 L_a or .75 L_t, a Type A test shall be performed at least every 18 months until two consecutive Type A tests meet either .75 L_a or .75 L_t at which time the above test schedule may be resumed.

c. The accuracy of each Type A test shall be verified by a supplemental test which:

1. Confirms the accuracy of the Type A test by verifying that the difference between supplemental and Type A test data is within 0.25 L_a or 0.25 L_t,

2. Has a duration sufficient to establish accurately the change in leakage between the Type A test and the supplemental test.

3. Requires the quantity of gas injected into the containment or bled from the containment during the supplemental test to be equivalent to at least 25 percent of the total measured leakage rate at P_a (39.6 psig) or P_t (19.8 psig).

d. Type B and C tests shall be conducted with gas at P_a (39.6 psig) at intervals no greater than 24 months except for tests involving air locks.

e. The combined bypass leakage rate shall be determined to be $< 0.27\ L_a$ by applicable Type B and C tests at least once per 24 months except for penetrations which are not individually testable; penetrations not individually testable shall be determined to have no detectable leakage when tested with soap bubbles while the containment is pressurized to P_a (39.6 psig) during each Type A test.

f. Air locks shall be tested and demonstrated OPERABLE per Surveillance Requirement 4.6.1.3.

SURVEILLANCE REQUIREMENTS (Continued)

g. All Type A test leakage rates shall be calculated using observed data converted to absolute values. Error analyses shall be performed to select a balanced integrated leakage measurement system.

TABLE 3.6-1

CONTAINMENT LEAKAGE PATHS

Penetration	System	Valve Tag Number	Location to Containment	Service	Test Type*
7	Makeup Water	Gate (I-MV-15-1) Check (I-V-15328)	Outside Inside	Primary Makeup Water	Bypass
8	Station Air	Globe (I-V-18-794) Globe (I-V-18-796)	Outside Outside	Station Air Supply	Bypass
9	Instrument Air	Gate (I-MV-18-1) Check (I-V-18195)	Outside Inside	Instrument Air Supply	Bypass
10	Containment Purge	Butterfly (I-FCV-25-4) Butterfly (I-FCV-25-5)	Inside Outside	Containment Purge Exhaust	Type C
11	Containment Purge	Butterfly (I-FCV-25-3) Butterfly (I-FCV-25-2)	Inside Outside	Containment Purge Supply	Type C
14	Waste Management	Globe (V-6741) Check (V-6779)	Outside Outside	Nitrogen supply to SI Tanks	Bypass
23	Component Cooling	Butterfly (I-HCV 14-7) Butterfly (I-HCV-14-1)	Outside Outside	RC Pump CW Supply	Bypass
24	Component Cooling	Butterfly (I-HCV-14-6) Butterfly (I-HCV-14-2)	Outside Outside	RC Pump CW Return	Bypass
25	Fuel Transfer Tube	Double Gasket Flange	Inside	Fuel Transfer	Bypass
26	CVCS	Globe (V-2515) Globe (V-2516)	Inside Inside	Letdown Line	Bypass
28	Sampling	Globe (V-5200) Globe (V-5203) Globe (I-FCV-03-1E) Globe (I-FCV-03-1F)	Outside Outside Outside Outside	Reactor Coolant Sample SI Tank Sample SI Tank Sample	Bypass Bypass

TABLE 3.6-1 (Continued)

Penetration	System	Valve Tag Number	Location to Containment	Service	Test Type*
29	Sampling	Globe (V-5202) Globe (V-5205)	Outside Outside	Pressurizer Steam Space Sample	Bypass
29	Sampling	Globe (V-5201) Globe (V-5204)	Outside Outside	Pressurizer Surge Line Sample	Bypass
31	Waste Management	Gate (V-6554) Gate (V-6555)	Outside Outside	Containment Vent Header	Bypass
41	Safety Injection Tank Test Lines	Gate (V-3463) Gate (I-V-07009)	Outside Outside	Safety Injection Tank Fill and Sampling	Bypass
42	Waste Management	Gate (I-LCV-07-11A) Gate (I-LCV-07-11B)	Outside Outside	Reactor Cavity Sump Pump Discharge	Bypass
43	Waste Management	Gate (V-6301) Gate (V-6302)	Outside Outside	Reactor Drain Tank Pump Suction	Bypass
44	CVCS	Gate (V-2505) Gate (I-SE-01-1)	Outside Inside	RL Pump Controlled Bleedoff	Bypass
46	Fuel Pool Cleanup	Gate (I-V-07-206) Gate (I-V-07-189)	Outside Inside	Refueling Cavity Purification Flow Inlet	Bypass
47	Fuel Pool Cleanup	Gate (I-V-07-170) Gate (I-V-07-188)	Outside Inside	Refueling Cavity Purification Flow Outlet	Bypass
48a	Sampling	Globe (I-FSE-27-1, 2, 3, 4) Globe (I-FSE-27-8)	Inside Outside	H_2 Sampling	Type C

TABLE 3.6-1 (Continued)

Penetration	System	Valve Tag Number	Location to Containment	Service	Test Type*
48c	Sampling	Globe (I-FSE-27-11) Check (I-V-27101)	Outside Inside	H_2 Sampling	Type C
51c	Sampling	Globe (I-FSE-27-5,6,7) Globe (I-FSE-27-9)	Inside Outside	H_2 Sampling	Type C
51a	Sampling	Globe (I-FSE-27-10) Check (I-V-27102)	Outside Inside	H_2 Sampling	Type C
52a	Sampling	Gate (I-FCV-26-1) Gate (I-FCV-26-2)	Inside Outside	Radiation Monitoring	Bypass
52b	Sampling	Gate (I-FCV-26-3) Gate (I-FCV-26-4)	Inside Outside	Radiation Monitoring	Bypass
52c	Sampling	Gate (I-FCV-26-5) Gate (I-FCV-26-6)	Inside Outside	Radiation Monitoring Return	Bypass
52d	ILRT	Globe (I-V00140) Globe (I-V00143)	Inside Outside	ILRT Test Tap	Bypass
52e	ILRT	Globe (I-V00139) Globe (I-V00144)	Inside Outside	ILRT Test Tap	Bypass
54	ILRT	Blind Flange Gate (I-V00101)	Inside Outside	ILRT Pressure Connection	Bypass
56	Containment H_2 Purge	Gate (I-V-25-11) Gate (I-V-25-12)	Outside Outside	Hydrogen Purge Outside Air Makeup	Bypass
57	Containment H_2 Purge	Gate (I-V-25-13) Gate (I-V-25-14)	Outside Outside	Hydrogen Purge Exhaust	Bypass

TABLE 3.6-1 (Continued)

Penetration	System	Valve Tag Number	Location to Containment	Service	Test Type*
58	Containment H_2 Purge	Gate (I-V-25-15) Gate (I-V-25-16)	Outside Outside	Hydrogen Purge Exhaust	Bypass
67	Vacuum Relief	Check (I-V-25-20) Butterfly (I-FCV-25-7)	Inside Outside	Containment Vacuum Relief	Type C
68	Vacuum Relief	Check (I-V-25-21) Butterfly (I-FCV-25-8)	Inside Outside	Containment Vacuum Relief	Type C
Personnel Lock	N.A.	None	N.A.	Ingress & Egress to Containment	Type B**
Escape Lock	N.A.	None	N.A.	Emergency Ingress & Egress to Containment	Type B**
Maintenance Hatch	N.A.	None	N.A.	Vessel Maintenance	Type B (Gasket Interspace)
Electrical Penetrations	N.A.	All primary canisters and flanged electrical penetrations except welded spares	N.A.	Electrical connections in PCV	Type B
1	Main Steam Steel Containment Nozzles	Tap 1 Tap 2	Outside Outside	Expansion Bellows	Type B
2	Main Steam Steel Containment Nozzles	Tap 1 Tap 2	Outside Outside	Expansion Bellows	Type B
3	Feedwater Steel Containment Nozzles	Tap 1 Tap 2	Outside Outside	Expansion Bellows	Type B

TABLE 3.6-1 (Continued)

Penetration	System	Valve Tag Number	Location to Containment	Service	Test Type*
4	Feedwater Steel Containment Nozzles	Tap 1 Tap 2	Outside Outside	Expansion Bellows	Type B
25	Fuel Tube Steel Containment Nozzles	Tap 1	Inside	Expansion Bellows	Type B

* Type C and bypass tests are conducted in the same manner, the only difference is in the acceptance criteria that is applicable.
** In accordance with Specification 4.6.1.3.b.

CONTAINMENT SYSTEMS

CONTAINMENT AIR LOCKS

LIMITING CONDITION FOR OPERATION

3.6.1.3 Each containment air lock shall be OPERABLE with:

a. Both doors closed except when the air lock is being used for normal transit entry and exit through the containment, then at least one air lock door shall be closed, and

b. An overall air lock leakage rate of less than or equal to 0.05 L_a at P_a, 39.6 psig.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

a. With one containment air lock door inoperable*:

1. Maintain at least the OPERABLE air lock door closed and either restore the inoperable air lock door to OPERABLE status within 24 hours or lock the OPERABLE air lock door closed.

2. Operation may then continue until performance of the next required overall air lock leakage test provided that the OPERABLE air lock door is verified to be closed at least once per 31 days.

3. Otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

4. The provisions of Specification 3.0.4 are not applicable.

b. With the containment air lock inoperable, except as the result of an inoperable air lock door, maintain at least one air lock door closed; restore the inoperable air lock to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.1.3 Each containment air lock shall be demonstrated OPERABLE:

a. Within 72 hours following each closing, except when the air lock is being used for multiple entries, then at least once per 72 hours, by verifying the seal leakage is < 0.01 L_a as determined by precision flow measurement when the volume between the door seals is pressurized to greater than or equal to:

*If the inner air lock door is inoperable, passage through the OPERABLE outer air lock door is permitted to effect repairs to the inoperable inner air lock door. No more than one airlock door shall be open at any time.

SURVEILLANCE REQUIREMENTS (Continued)

1. For the personnel air lock, greater than or equal to P_a, 39.6 psig for at least 15 minutes if not tested with the automatic tester.

2. For the emergency air lock, greater than or equal to 10.0 psig for at least 15 minutes.

b. By conducting overall air lock leakage tests at not less than P_a, 39.6 psig, and verifying the overall air lock leakage rate is within its limit:

1. At least once per 6 months,# and

2. Prior to establishing CONTAINMENT INTEGRITY when maintenance has been performed on the air lock that could affect the air lock sealing capability.*

c. At least once per 6 months by verifying that only one door in each air lock can be opened at a time.

#The provisions of Specification 4.0.2 are not applicable.

*This constitutes an exemption to Appendix J of 10 CFR 50.

3/4.6.3 CONTAINMENT ISOLATION VALVES

LIMITING CONDITION FOR OPERATION

3.6.3.1 The containment isolation valves specified in Table 3.6-2 shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With one or more of the isolation valve(s) specified in Table 3.6-2 inoperable, either:

a. Restore the inoperable valve(s) to OPERABLE status within 4 hours, or

b. Isolate each affected penetration within 4 hours by use of at least one deactivated automatic valve secured in the isolation position, or

c. Isolate each affected penetration within 4 hours by use of at least one closed manual valve or blind flange; or

d. Be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.3.1.1 The isolation valves specified in Table 3.6-2 shall be demonstrated OPERABLE prior to returning the valve to service after maintenance, repair or replacement work is performed on the valve or its associated actuator, control or power circuit by performance of the cycling test, and verification of isolation time.

SURVEILLANCE REQUIREMENTS (Continued)

4.6.3.1.2 Each isolation valve specified in Table 3.6-2 shall be demonstrated OPERABLE during the COLD SHUTDOWN or REFUELING MODE at least once per 18 months by:

a. Verifying that on a Containment Isolation test signal, and/or SIAS test signal, each isolation valve actuates to its isolation position.

4.6.3.1.3 The isolation time of each power operated or automatic valve of Table 3.6-2 shall be determined to be within its limits when tested pursuant to Specification 4.0.5.

TABLE 3.6-2

CONTAINMENT ISOLATION VALVES

Valve Tag Number	Penetration Number	Function	Testable During Plant Operation	Isolation Time (Sec)
A. CONTAINMENT ISOLATION				
1. I-FCV-25-4,5	10	Containment purge air exhaust, CIS	No	5
2. I-FCV-25-2,3	11	Containment purge supply, CIS	No	5
3. I-MV-15-1	7	Primary makeup water, CIS	Yes	19
4. I-MV-18-1	9	Instrument air supply, CIS	No	28
5. V-6741	14	Nitrogen supply to safety injection tanks, CIS	Yes	5
6. I-HCV-14-1 & 7	23	Reactor coolant pump cooling water supply, SIAS	No	5
7. I-HCV-14-6 & 2	24	Reactor coolant pump cooling water return, SIAS	No	5
8. V-2515,2516	26	Letdown line, CIS, SIAS	No	5
9. V-5200,5203	28	Reactor coolant sample, CIS	Yes	5
10. V-5201,5204	29	Pressurizer surge line sample, CIS	Yes	5
11. V-5202,5205	29	Pressurizer steam space sample, CIS	Yes	5
12. V-6554,6555	31	Containment vent header, CIS	Yes	5
13. I-LCV-07-11A,11B	42	Reactor cavity sump pump discharge, CIS	Yes	10
14. V-6301,6302	43	Reactor drain tank pump suction, CIS	Yes	5
15. V-2505	44	Reactor coolant pump controlled bleedoff, CIS	No	5
16. I-SE-01-1	44	Reactor coolant pump controlled bleedoff, CIS	No	5

TABLE 3.6-2 (Continued)

Valve Tag Number	Penetration Number	Function	Testable During Plant Operation	Isolation Time (Sec)
B. MANUAL OR REMOTE MANUAL				
1. I-V-18-794 I-V-18-796	8	Station air supply, Manual	Yes	NA
2. I-V-25-11,12	56	Hydrogen purge outside air make-up, Manual (NC)	Yes	NA
3. I-V-25-13,14, 15,16	57 & 58	Hydrogen purge exhaust, Manual (NC)	Yes	NA
4. V-3463	41	Safety injection tank test line, Manual (NC)	Yes	NA*
5. I-V-07009	41	Safety injection tank test line, Manual (NC)	Yes	NA*
6. V-07206, V-07189	46	Refueling cavity purification flow inlet, Manual (NC)	Yes	NA
7. V-07170, V-07188	47	Refueling cavity purification flow outlet, Manual (NC)	Yes	NA
8. I-FSE-27-1,2,3, 4,8,11	48a & 48c	Hydrogen sampling line, Remote manual	Yes	NA*
9. I-FSE-27-5,6,7, 9,10	51a & 51c	Hydrogen sampling line, Remote manual	Yes	NA*

TABLE 3.6-2 (Continued)

Valve Tag Number	Penetration Number	Function	Testable During Plant Operation	Isolation Time (Sec)
10. I-FCV-26-1 & 2	52a	Radiation monitoring	Yes	NA
11. I-FCV-26-3 & 4	52b	Radiation monitoring	Yes	NA
12. I-FCV-26-5 & 6	52c	Radiation monitoring, return	Yes	NA
13. I-V00140 I-V00143	52d	ILRT test tap	Yes	NA
14. I-V00139 I-V00144	52e	ILRT test tap	Yes	NA
15. I-V00101	54	ILRT pressure connection	Yes	NA
16. I-FCV-03-1E & 1F	28	SI Tank Sample	Yes	NA**

NA - Manual Valve-Isolation time not applicable.
* May be opened on an intermittent basis under administrative control.
** Normally closed valves - Isolation time not applicable.