APPENDIX

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Inspection Report: 50-458/94-07

License: NPF-47

Licensee: Entergy Operations, Inc.
P.O. Box 220
St. Francisville, Louisiana

Facility Name: River Bend Station

Inspection At: St. Francisville, Louisiana

Inspection Conducted: January 31 through February 4, 1994

Inspectors: J. L. Pellet, Chief Examiner, Operations Branch
Division of Reactor Safety

L. R. Miller, Examiner, Technical Training Center
Office for Analysis and Evaluation of Operational Data

Accompanying Personnel: M. Morgan, Examiner,
Battelle Pacific Northwest Laboratories

M. Mitchell, Examiner,
Battelle Pacific Northwest Laboratories

Approved: Jocelyn A. Mitchell 3/10/94
Jocelyn A. Mitchell, Acting Deputy Director, Date
Division of Reactor Safety

Inspection Summary

Areas Inspected: Routine, announced inspection of the qualifications of applicants for operator licenses at the River Bend Station facility, which included an eligibility determination and administration of comprehensive written examinations and operating tests. The examination team also observed the performance of on-shift operators and plant conditions incident to the conduct of the applicant evaluations. The examiners used the guidance provided in NUREG-1021, "Operator Licensing Examiner Standards," Revision 7, Sections 201-203, 301-303, and 401-403, issued January 1993.

Results:

- All five of the applicants for reactor operator and all three of the applicants for senior reactor operator licenses satisfied the requirements of 10 CFR 55.33(a)(2) (Section 1).

- The reference material provided by the training department for examination development was adequate, with a noted vulnerability (Section 1.1).

- All applicants passed the written examinations, with scores ranging from a low of 80 percent to a high of 91 percent, with averages of 86 percent for reactor operator applicants, 87 percent for senior reactor operator applicants, and 86.5 percent overall (Section 1.2).

- The examiners observed improved, good communication practices from applicants during the conduct of the examinations (Section 1.3) and from control room operators during plant walkthroughs (Section 1.4).

- Component labeling in the fuel building and reactor building was observed to be difficult to read, which impacted the ability of some applicants to perform tasks in those areas (Section 1.4). The plant-wide labeling enhancement program was in progress but had not yet reached these areas (Section 1.6).

Summary of Inspection Findings:

- There were no findings that were assigned a tracking number identified during the course of this inspection.

Attachments:

- Attachment 1 - Persons Contacted and Exit Meeting
- Attachment 2 - Simulation Facility Report
- Attachment 3 - Written Examination Keys
- Attachment 4 - Facility Post-Examination Comments

DETAILS

1 LICENSED OPERATOR APPLICANT INITIAL QUALIFICATION EVALUATION (NUREG-1021)

During the inspection, the examiners evaluated the qualifications of eight license applicants: five for reactor operator (RO), two for senior reactor operator (SRO) currently licensed as ROs, and one for an instant SRO. The inspection assessed the eligibility and administrative and technical competency of the applicants to be issued licenses to operate and direct the operation of the reactivity controls of a commercial nuclear power facility in accordance with 10 CFR Part 55 and NUREG-1021, "Operator License Examiner Standards," Revision 7, Sections 200 (series), 300 (series), and 400 (series). Further, the inspection included evaluations of facility materials, procedures, and simulation capability used to support development and administration of the examinations. These areas were evaluated using the guidance provided in the areas of NUREG-1021 cited above. Additionally, the examination team also observed the performance of on-shift operators and plant conditions incident to the conduct of the applicant evaluations.

After completion of the evaluations, the examiners recommended that all applicants satisfied the requirements of 10 CFR 55.33(a)(2) and all applicants have been issued the appropriate licenses.

Performance results for individual applicants are not included in this report because inspection reports are placed in the NRC Public Document Room as a matter of course. Individual performance results are not subject to public disclosure.

1.1 Facility Materials Submitted for Examination Development

The chief examiner reviewed the licensee's materials provided for development of the examination, which included station administrative and operating procedures, lesson plans, question banks, simulator scenarios, and job performance measures (JPMs). The material was current and adequate, except that some JPMs were not current with the latest procedure revision. This was expected since facility practice is to update JPMs after selection but before use on an examination. This practice can result in significant time between development of the need for revision of the material and implementation of those revisions, immediately prior to the next occurrence. It also reduces the time available for validity testing of revised material. This creates a vulnerability by increasing the opportunity for validity issues to arise during the examination. This practice put considerable stress on facility preexamination reviewers, to help revise JPMs during the preexamination review.

The facility bank of written questions, dynamic simulator scenarios, and JPMs was adequate in scope, depth, and variety. It was used extensively in developing the examinations.

There is no regulatory requirement for a facility to develop and maintain a bank of valid test items (questions, JPMs, and scenarios) for NRC use to develop examinations. However, because of the significant savings in development time, the NRC has expressed willingness to use such material if it is available and meets the standards of NUREG-1021, as was the case for these examinations.

1.2 Written Examinations

The examination team developed comprehensive written RO and SRO examinations in accordance with the guidelines of NUREG-1021, Revision 7, Section 401. The examinations consisted of 100 multiple choice questions. During the week of January 10, 1994, members of the facility operations and training departments, under the nondisclosure security provisions of NUREG-1021, reviewed the examinations at the River Bend Station. The NRC considers the preadministration review of the examination by the facility as part of the examination development process. Therefore, the specific comments resulting from that review are not reported or otherwise retained. The chief examiner incorporated the facility review comments and administered the examinations to the license applicants on January 31, 1994.

The chief examiner provided the facility training staff with a copy of the "as administered" written examination and answer key along with the preadministration review comments on January 31, 1994, immediately following the completion of the examination by the applicants. The facility reviewed the as-administered examination and informally provided additional comments on SRO examination questions 16, 83, and 92, which are included without the supporting documentation in Attachment 4.

Based on an analysis of the comments, supporting information supplied by the facility staff, and other material available to the chief examiner, the facility comments about questions 83 and 92 were found to be technically correct and the actions requested by the facility were in accord with NUREG-1021 and were reflected in the master examination and key in Attachment 3. With respect to question 16, the facility comment was not accepted because it relied on an assumption not explicitly stated in the question stem. Specifically, for two answers to be considered correct, as recommended by the facility staff, it must be assumed that the loss of power stated in the stem has continued for an extended period, resulting in loss of the accumulators designed to supply air to the suppression pool level instrumentation during a loss of power. Applicants were explicitly cautioned by the chief examiner to make no assumptions beyond the statements in the question stem and that a proctor was available at all times to respond to any questions. Review of the proctor's notes indicated that the test question was not questioned during the examination. Therefore, the facility staff comment on SRO examination 16 was rejected and the master examination and key was not changed.

Overall, applicants performed adequately on the written examinations. Scores ranged from a low of 80 percent to a high of 91 percent with averages of

86 percent for reactor operator applicants, 87 percent for senior reactor operator applicants, and 86.5 percent overall. All applicants passed the written examination.

The chief examiner reviewed applicant performance on individual questions and observed that the following questions were missed by 50 percent or more of the applicants responding to the question. The questions are referenced here only by examination level and question number. Refer to Attachment 3 for the complete question and answer.

Questions on the RO examination: 33, 46, 48, 68, 90, 92, 94, 98
Questions on the SRO examination only: 22, 90, 91

The chief examiner concluded that no specific area of significant knowledge weakness was apparent in the responses to the above questions. Therefore, the information is provided to the facility training staff for consideration as feedback into future training needs.

1.3 Operating Tests

The examiners developed comprehensive operating tests in accordance with the guidelines of NUREG-1021, Revision 7, Section 301. The operating tests consisted of two parts, a dynamic simulator scenario portion and a control room/plant walkthrough portion. The chief examiner previewed and validated the various portions of the operating tests during the week of January 10, 1994, with the assistance of facility training personnel under security agreement. The examination team administered the operating tests during the week of January 31, 1994.

1.3.1 Dynamic Simulator Scenarios

The examination team evaluated three crews (two crews consisting of two RO applicants and an SRO upgrade applicant and one crew consisting of one RO applicant, an SRO instant applicant, and a nonexamined SRO qualified surrogate) on two scenarios using the River Bend Station plant-specific simulation facility. The examiners compared applicants' actual performance during the scenarios with expected performance in accordance with the requirements of NUREG-1021, Revision 7, Section 303, to evaluate applicants' competency on this portion of the operating tests.

The examination team noted good communication practices among crew members, with only isolated instances of open-ended and informal communications. Communication practices observed during these examinations were improved over those observed during previous examinations. The applicants normally employed echo and confirmation prior to taking action. Crew briefings by the SRO were generally effective and timely.

All eight applicants passed this portion of the operating tests.

1.3.2 Walkthrough Examinations

The examination team evaluated each of the RO and instant SRO applicants using 10 JPMs relating to tasks within the scope of potential duties of a licensed RO or SRO (which included nonlicensed operator tasks outside the control room). The examination team evaluated the remaining upgrade SRO applicants on five RO or SRO tasks. The applicants performed some of the tasks in the simulation facility in the dynamic mode. They simulated (through discussions) the remainder of the tasks in the plant integrated control room and at local operating stations throughout the plant. Immediately following the performance of each task, the examiners asked pre-scripted questions relating to the system involved in the task. The questions solicited "short-answer" responses and permitted the applicants to use operationally controlled references to aid in their responses, unless specifically annotated to require response from memory. The examiners combined the applicants' task performance and question responses in accordance with the guidelines of NUREG-1021, Revision 7, Section 303, to evaluate performance on this portion of the operating examination.

Overall, the applicants performed adequately. All applicants passed this portion of the operating examination with satisfactory overall performance on systems and tasks.

Each applicant was required to enter the protected area to complete one or more tasks. Applicants were familiar with facility escort procedures on entering the protected area with an escorted visitor.

The examiners noted one instance of poor labeling which directly affected the applicants' performance on the involved task. The task required repositioning dampers in the fuel building ventilation system by venting the air from selected dampers in accordance with AOP-52, Attachment 7. The labeling on the dampers was very poor, written by hand in permanent marker on the damper or nearby ductwork, often at an angle so as to obstructed from clear view as installed. This appeared to be the reason that several applicants had difficulty and one was unable to correctly complete the task. The examiners also noted that the control rod drive flow control valve local controllers were labelled by hand in permanent marker and the low light level in the area where the controllers were located made the labels difficult to interpret.

The examiners noted that applicants were very observant of activities in the plant and were quick to report discrepancies or unusual conditions to the control room. For example, an applicant observed and reported an unsecured extension cord, which was immediately secured by security personnel.

1.4 Observations

The examination team observed the performance of on-shift operators and plant conditions incident to the conduct of the applicant evaluations. These observations did not impact the evaluation of individual applicants and are included in this report for information only.

- Material condition of the plant was noted as good, with significant improvement since last evaluated, especially with regard to cleanliness and lighting.

- Control room communications were observed during several operations coincident with the examinations. In general, communications were formal and effective, consistent with observations made during the dynamic simulator section of the operating tests.

- Component labeling in the fuel building and reactor building was observed to be difficult to read, due to being hand written, remotely located, often not fully visible from the floor, and poorly lit, or a combination of the factors.

1.5 Simulator Fidelity

During the preparation and conduct of the operating tests, the examination team observed several discrepancies in simulator fidelity as described in Attachment 2. The noted discrepancies appeared to complicate the planned scenarios, but not so far as to affect scenario validity.

1.6 Conclusions

The examination team concluded that the performance of all eight applicants for operator licenses satisfied the requirements of 10 CFR 55.33(a)(2) and recommended that licenses be issued.

In general, the examination team concluded that:

- Individual applicants and crews performed satisfactorily. Communications and teamwork were noted strengths and improvements from prior examinations.

- Some JPMs were not current with the latest procedure revision. This can result in a long delay between the need for and a revision. It reduces the validity testing of revised material. This creates a vulnerability to increased validity issues during the examination, but the only effect noted was considerable stress on facility preexamination reviewers, to help revise JPMs during the preexamination review.

- Control room conduct and housekeeping had improved from prior visits.

- Component labeling significantly impeded some tasks outside the control room. Labeling deficiencies had been previously identified and a plant-wide labeling enhancement program was in place, but had not yet reached the areas noted during the examinations.

- Simulator fidelity discrepancies had increased since the last examinations, but did not significantly impact the examinations.

ATTACHMENT 1

1 PERSONS CONTACTED

1.1 Licensee Personnel

*B. Biggs, Supervisor, Quality Assurance Systems
*C. Rohrmann, Coordinator - Simulator Support
*D. Lorfing, Supervisor, Nuclear Licensing
*L. Woods, Supervisor, Operations Training
*W. Beck, Director, Nuclear Training
*J. Venable, Assistant Plant Manager, Operations
*W. Trudell, Acting Operations Supervisor

1.2 NRC Personnel

*J. Pellet, Chief, Operations Branch
L. Miller, Examiner, AEOD
*M. Mitchell, Contractor, Battelle Pacific Northwest Laboratories
M. Morgan, Contractor, Battelle Pacific Northwest Laboratories
*B. Ferguson, Contractor, Battelle Pacific Northwest Laboratories
L. Vick, Auditor, Operator Licensing Branch/NRR

In addition to the personnel listed above, the examiners contacted other personnel during this inspection period.

*Denotes personnel that attended the exit meeting.

2 EXIT MEETING

An exit meeting was conducted on February 4, 1994. During this meeting, the chief examiner reviewed the scope and generic findings of the inspection. The chief examiner did not disclose preliminary results of individual evaluations since they are subject to change during the final review and approval process. The licensee did not identify as proprietary any information provided to, or reviewed by, the examiner. The licensee did not state any position on the findings presented during the exit meeting.

ATTACHMENT 2

SIMULATION FACILITY REPORT

Facility Licensee: River Bend Station

Facility Docket: 50-458

Operating Tests Administered at: River Bend Station

Operating Tests Administered on: January 31 - February 4, 1994

These observations do not constitute 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 which may be used in future evaluations. No licensee action is required in response to these observations.

- Simulator instrument E22*R615, 4160 volt HPCS bus frequency indicator read 57 Hertz versus the 60 Hertz expected given a proper start and running at rated speed.

- Simulator instrument B21-R623A, postaccident reactor level and pressure chart recorder, lagged the other channel and other instruments.

- Simulation of an HPCS motor trip on overcurrent did not illuminate the HPCS breaker trip light and did not cause a breaker lockout as expected.

ATTACHMENT 3

WRITTEN EXAMINATION KEYS

U. S. NUCLEAR REGULATORY COMMISSION
SITE SPECIFIC EXAMINATION
REACTOR OPERATOR LICENSE
REGION 4

CANDIDATE'S NAME: _____

FACILITY: River Bend 1

REACTOR TYPE: BWR-GE6

DATE ADMINISTERED: 94/01/31

INSTRUCTIONS TO CANDIDATE:

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

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

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

_____
Candidate's Signature

A N S W E R S H E E T

Multiple Choice (Circle or X your choice)

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

MULTIPLE CHOICE

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

A N S W E R S H E E T

Multiple Choice (Circle or X your choice)

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

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

A N S W E R S H E E T

Multiple Choice (Circle or X your choice)

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

092 a b c d ___

093 a b c d ___

094 a b c d ___

095 a b c d ___

096 a b c d ___

097 a b c d ___

098 a b c d ___

099 a b c d ___

100 a b c d ___

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

NRC RULES AND GUIDELINES FOR LICENSE EXAMINATIONS

During the administration of this examination the following rules apply:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

QUESTION: 001 (1.00)

With the SRMs fully inserted, WHICH ONE (1) of the following conditions will cause the SRM retract permit light to energize?

a. BOTH of its associated IRMs are on Range 2 or above.

b. BOTH of its associated IRMs are on Range 3 or above.

c. EITHER of its associated IRMs are on Range 2 or above.

d. EITHER of its associated IRMs are on Range 3 or above.

QUESTION: 002 (1.00)

1BYS-PNL02A2 is lost during a partial loss of DC power. WHICH ONE (1) of the following is a possible consequence?

a. The ARI solenoids will fail open causing a full scram.

b. The ARI solenoids CANNOT be opened, ARI is inoperable.

c. The RCIC injection valve, E51*MOV F013, will fail as-is.

d. The RCIC trip throttle valve, E51*C002V, cannot be reset.

QUESTION: 003 (1.00)

WHICH ONE (1) of the following will cause an automatic trip of a running CRD pump?

a. Lube oil pressure of 5 psig.

b. Pump motor current of 45 amps.

c. System flow of 75 gpm for more than 5 seconds.

d. Pump suction pressure of 20 inches Hg absolute.

QUESTION: 004 (1.00)

Rod 42-27 has an UNACKNOWLEDGED accumulator fault due to liquid in the nitrogen accumulator. You depress the "ACCUM FAULT" pushbutton on the 680 panel (RC&IS system). WHICH ONE (1) of the following indications would be expected on the full core display?

a. BLINKING, RED L.E.D.

b. BLINKING, GREEN L.E.D.

c. STEADY, RED L.E.D.

d. STEADY, GREEN L.E.D.

QUESTION: 005 (1.00)

The Plant is operating at 65% power and approximately 75% rated core flow. WHICH ONE (1) of the following states the MAXIMUM allowable loop-to-loop flow mismatch? (Stated as percentage of rated recirc flow.)

a. 5%

b. 10%

c. 15%

d. 20%

QUESTION: 006 (1.00)

Valve timing is being performed on RHR loop A. 1E12*MOV F004A, the pump suction valve from the suppression pool, is closed with all other valves/switches in their normal standby position when a valid LOCA signal occurs.

WHICH ONE (1) of the following operator actions would be needed to insure that the RHR "A" system injects as designed?

a. Re-open F004A, and start the A RHR pump.

b. Re-open F004A, and verify that the A RHR pump auto-starts when F004A is fully open.

c. Verify that FOO4A receives an automatic open signal, and start the A RHR pump.

d. Verify that FOO4A receives an automatic open signal, and the A RHR pump starts when the F004A valve is full open.

QUESTION: 007 (1.00)

SOP-0031,"Residual Heat Removal" cautions the operator NOT to simultaneously close the RHR HX BYPASS valve (1E12*F048A(B)) and the RHR A HX OUTLET valve (1E12*F003A(B)) while the RHR pump is in service.

WHICH ONE (1) of the following actions should be taken if both of these valves are inadvertently closed in RHR loop B while in suppression pool cooling?

a. Open the F048B first to reduce the differential pressure across the F003B then throttle open F003B.

b. Open the F003B immediately to reestablish flow through the RHR HX.

c. Shutdown the RHR pump prior to opening either the F003B or the F048B.

d. Verify that the minimum flow valve (F064B) is fully open and reopen either F003B or F0048B.

QUESTION: 008 (1.00)

Certain pairs of ECCS pumps share common test return lines to the suppression pool which should not operate on the test return simultaneously. WHICH ONE (1) of the following ECCS pumps shares a common test return to the suppression pool with the LPCS pump?

a. RHR A

b. RHR B

c. RHR C

d. HPCS

QUESTION: 009 (1.00)

A small-break LOCA has occurred. Reactor level initially fell to -47 inches, HPCS initiated and filled the reactor to a maximum of +55 inches, level is now steady at +40 inches. WHICH ONE (1) of the following describes the status of 1E22*MOV F004, the HPCS injection isolation valve?

a. F004 will open on a High Drywell Pressure signal HPCS initiation even if the HPCS HIGH WATER LEVEL 8 RESET pushbutton has not been depressed, but the HPCS HIGH WATER LEVEL 8 RESET pushbutton must be depressed before the valve will open on a manual signal.

b. F004 will open manually, even if the HPCS HIGH WATER LEVEL 8 RESET pushbutton has not been depressed, but the HPCS HIGH WATER LEVEL 8 RESET pushbutton must be depressed before the valve will open on an High Drywell signal initiation.

c. F004 will not open on a manual OR High Drywell signal until the HPCS HIGH WATER LEVEL 8 RESET pushbutton is depressed.

d. F004 will not open on a manual OR High Drywell signal until the HPCS HIGH WATER LEVEL 8 RESET pushbutton and the HPCS INITIATION RESET pushbutton are depressed.

QUESTION: 010 (1.00)

WHICH ONE (1) of the following describes the effect of a loss of instrument air to the SBLC system?

a. SBLC pump suction valves would fail open.

b. Control room SBLC Storage Tank level indication would be lost, local indication would still be available.

c. SBLC pump suction valves would fail closed.

d. Local and Control room SBLC Storage Tank level indication would be lost.

QUESTION: 011 (1.00)

Reactor pressure is 950 psig, the main turbine has just been synchronized to the grid, and the mode switch is in the STARTUP position. WHICH ONE (1) of the following scram signals is NOT bypassed?

a. Turbine Control Valve Fast Closure.

b. Main steam line i olation valve closure.

c. Reactor high water level.

d. Reactor low water level.

QUESTION: 012 (1.00)

WHICH ONE (1) of the following is the source of the signal for the control valve (CV) fast closure scram?

a. Position limit switches on CVs.

b. Generator amps to Turbine first stage pressure mismatch.

c. CV low trip oil pressure.

d. Electric pressure regulator servomotor position signal.

QUESTION: 013 (1.00)

WHICH ONE ( ) of the following describes RPS valve operation during a SCRAM?

a. The Scram Pilot Valve solenoids energize to vent the air off of the scram inlet and outlet valves.

b. The Scram Pilot Valve solenoids energize to vent the air off of the Scram Discharge Volume (SDV) vent and drain valves.

c. The Backup Scram valves de-energize to vent the air off of the scram inlet and outlet valves.

d. The Backup Scram valves energize to vent the air off of the scram inlet and outlet valves.

QUESTION: 014 (1.00)

RPS Bus "A" is lost. WHICH ONE (1) of the following components will lose power?

a. IRM "H" instrument

b. All IRM drive motors

c. IRM "E" instrument

d. All IRM chart recorders

QUESTION: 015 (1.00)

The table below indicates the number of valid LPRM inputs per level for APRM "E". WHICH ONE (1) of the following sets of LPRM inputs will result in an (automatic) APRM INOP trip? ASSUME all channels are unbypassed.

	Number of valid LPRM inputs			
	Level A	Level B	Level C	Level D
a.	4	4	3	0
b.	3	2	3	2
c.	1	4	5	1
d.	4	1	1	5

QUESTION: 016 (1.00)

The Plant is operating at 100% power. ALL of the WIDE RANGE (-160 to 60) level instruments fail LOW. Actual reactor level remains in the normal band. WHICH ONE (1) of the following responses would result?

a. HPCS would initiate.

b. Feedwater flow would increase.

c. Recirc pumps would transfer to slow speed.

d. Reactor would scram on low level.

QUESTION: 017 (1.00)

The following plant conditions exist:

- A total loss of AC power occurs with ENS*SWG1A and ENS*SWG1B buses NOT energized.
- SRVs are being used to control reactor pressur .t 900 psig.
- RCIC is manually initiated and is maintaining reactor water level at approximately +20".

A high suppression pool level occurs. WHICH ONE (1) of the following describes the effect of the loss of AC power will have on the transfer of RCIC suction?

a. No effect since suction valves are DC powered and suction transfer will occur normally.

b. Suppression pool suction valve will not open, causing RCIC to trip on low suction pressure when the DC powered CST suction closes.

c. CST suction valve will not close when the suppression pool suction opens since it is AC powered, causing the CST to drain into the suppression pool until manual action is taken.

d. No transfer will take place. RCIC suction will remain on the CST.

QUESTION: 018 (1.00)

If RCIC speed is allowed to lower to 2000 RPM, WHICH ONE (1) of the following consequences is likely to occur first?

a. Unstable operation of the automatic controller.

b. High oil temperature.

c. Turbine Exhaust Check Valve chattering.

d. Steam leaking past gland seals.

QUESTION: 019 (1.00)

WHICH ONE (1) of the following sets of conditions would result in the Automatic Depressurization System (ADS) safety relief valves opening? Assume all ECCS pumps designated as running generate from 150 to 160 psig discharge pressure.

	Reactor Level/Minutes at this level	Drywell Pressure	ECCS pumps Running
a.	-135/6	1.0	RHR A, LPCS
b.	-155/6.75	1.5	RHR B, LPCS
c.	-130/5	1.0	RHR B, RHR C
d.	-145/6.75	1.5	RHR A, LPCS

QUESTION: 020 (1.00)

If ALL 125 VDC power is lost to the ADS system, WHICH ONE (1) of the following is the consequence?

a. The ADS relief valves will lose their ADS function, but will operate in the safety mode.

b. The ADS relief valves will fail open, but can be closed by taking the keylocked ADS manual inhibit switches to INHIBIT.

c. The ADS relief valves will respond normally in automatic, but the manual pushbuttons on P601 CANNOT manually initiate ADS.

d. The ADS relief valves will fail open, but can be closed by taking their manual handswitches to OFF

QUESTION: 021 (1.00)

The Plant is starting up after an outage, turbine warmup is in progress. WHICH ONE (1) of the following signals will cause at least one MSIV to close?

a. Main Steam pressure 830 psig

b. High drywell pressure

c. Loss of one RPS bus

d. RPV level at Level 1

QUESTION: 022 (1.00)

1EJS*SWG2A and B are lost. WHICH of the following safety related components will be de-energized?

a. Containment Unit Cooler A and B

b. Annulus pressure control exhaust fan A and B

c. Containment continuous purge low volume fan

d. All drywell unit coolers

QUESTION: 023 (1.00)

The Plant is at full power conditions. WHICH ONE (1) of the following describes the meaning of an illuminated red light directly above the control switch for Safety Relief Valve FO51G? (FO51G is the SRV on steam line "C" that has both ADS and LLS functions)

a. The ADS timer is initiated

b. The SRV open solenoid is energized.

c. The SRV will open at it's reduced (LLS) setpoint.

d. The acoustic monitor has sensed high noise level downstream of the SRV.

QUESTION: 024 (1.00)

WHICH ONE (1) of the following Diesel trips is armed if the "A" Diesel is started by a LOCA signal?

a. High crankcase pressure

b. Overspeed

c. Low lube oil pressure

d. High jacket water temperature

QUESTION: 025 (1.00)

WHICH ONE (1) of the following sets of conditions will cause Standby Gas Treatment "A" to start? (Assume that the power supplies stated to be available are the ONLY ones available to the SBGT system)

a. Div I 125 VDC is available, 1EJS*SWG3A is available, Reactor level is -15 inches, Reactor building annulus vent GASEOUS radiation high.

b. RPS A is available, 1EJS*SWG3A is available, Reactor level is -45 inches, Reactor building annulus vent GASEOUS radiation high-high.

c. RPS A is available, 1EJS*SWG2A is available, Reactor level is -15 inches, Reactor building annulus vent PARTICULATE radiation high-high.

d. Div I 125 VDC is available, 1EJS*SWG2A is available, Reactor level is -45 inches, Reactor building annulus vent PARTICULATE radiation high.

QUESTION: 026 (1.00)

WHICH ONE (1) of the following parameters could be the cause of reactor feed pump FWS-P1A not starting when its start pushbutton is depressed?

a. Speed increaser lube oil pressure 17 psig.

b. Pump and Motor lube oil pressure 7.5 psig.

c. Reactor level +43".

d. Feedwater pump suction pressure 220 psig.

QUESTION: 027 (1.00)

The Plant is operating at 5% power, 920 psig, with the Mode Switch in STARTUP, when the Reactor Level instrument selected for feedwater control fails downscale.

Which ONE (1) of the following actions/signals will occur as a result of this failure? Assume no operator action.

a. Feedwater flow increases and the reactor scrams on high reactor power. MSIVs stay open.

b. Feedwater flow increases and the reactor feedwater pumps trip on high reactor level.

c. The recirculation flow control valves lock up.

d. The recirculation flow control valves run back to minimum flow.

QUESTION: 028 (1.00)

The Plant is operating at 100% power when a scram occurs. One CRDM hydraulic accumulator malfunctions, with the accumulator piston freezing in place. This rod is initially fully withdrawn. WHICH ONE (1) of the following statements describes the expected control rod action on a scram if the accumulator piston will not move?

a. The rod will not insert, it will remain at position 48.

b. The rod will insert about half way; to position 24.

c. The rod will fully insert at slower than normal speed.

d. The rod will fully insert at normal speed.

QUESTION: 029 (1.00)

WHICH ONE (1) of the following conditions will cause BOTH recirc pumps to automatically transfer to slow speed? Assume that all time delays have timed out.

a. Main steam pressure is 910 psig, recirc pump A suction temp is 532 deg F, recirc pump B suction temp is 530 deg F.

b. Feed temperature is 440 deg F, feed flow is 25 MLB/hour.

c. Main steam pressure is 1050 psig, recirc pump A suction temp is 542 deg F, recirc pump B suction temp is 530 deg F.

d. Feed temperature is 340 deg F, feed flow is 35 MLB/hour.

QUESTION: 030 (1.00)

WHICH ONE (1) of the following is the consequence of opening 1G33-FO46 RWCU DRAIN TO MN COND or 1G33-FO41 RWCU BYP TO MN COND and 1G33-FO35 RWCU DRAIN TO RADWASTE simultaneously?

a. Damage to the RWCU filter-demineralizers.

b. A sudden decrease in reactor level could occur.

c. A loss of condenser vacuum can occur.

d. Damage to the RWCU pump seals.

QUESTION: 031 (1.00)

WHICH ONE (1) of the following describes the optimal lineup for RWCU suction flow during normal full-power operation?

a. Flow should be half from each Recirc line, the bottom head suction should be closed when the reactor is pressurized.

b. Bottom head drain line flow should not exceed 1/2 of total RWCU flow, if the recirc loop suctions are available.

c. Flow should be entirely from the bottom head drain line if it is available.

d. Suction should be from the recirc lines if recirc pumps are in slow speed, and from the bottom head drain line if recirc pumps are in fast speed.

QUESTION: 032 (1.00)

The plant is being cooled down for refueling. WHICH ONE (1) of the following is the reason that RPV water level must be maintained above 75 inches when Cold Shutdown conditicns exist and Reactor Recirculation Pumps are secured?

a. To prevent thermal stratification in the RPV.

b. To provide adequate NPSH to the RHR pumps.

c. To maintain an adequate heat sink in case Shutdown Cooling Flow is lost.

d. To provide adequate NPSH to the RWCU pumps.

QUESTION: 033 (1.00)

WHICH ONE (1) of the following sets of RHR flows is procedurally acceptable?

	RHR PUMP FLOW	HX SHELL SIDE FLOW	SERVICE WTR FLOW
a.	6000	5500	5750
b.	6200	5000	5750
c.	6100	5700	5560
d.	6300	5250	5900

QUESTION: 034 (1.00)

WHICH ONE (1) of the following describes the operation of the MSIV pilot solenoids and MSIV actuators during a Main Steam isolation?

a. The pilot solenoids de-energize to vent air from under the valve actuating piston, the MSIV closes by spring pressure and over-piston air pressure.

b. The pilot solenoids de-energize to port air to the over-piston air chamber, the MSIV closes by over-piston air pressure only.

c. The pilot solenoids energize to vent air from under the valve actuating piston, the MSIV closes by spring pressure and over-piston air pressure.

d. The pilot solenoids energize to port air to the over-piston air chamber, the MSIV closes by over-piston air pressure only.

QUESTION: 035 (1.00)

WHICH ONE (1) of the following will cause the MSIV's to close?

a. Reactor Level -43 inches

b. Instrument air pressure 75 psig

c. Main Steam flow 125% in Main Steam Line "A"

d. Condenser Vacuum 7.5" Hg

QUESTION: 036 (1.00)

A startup of the Main Turbine is being performed. The Main Turbine is at 60 percent of rated speed, when a loss of 125 VDC Trip Circuit Power is experienced. WHICH ONE (1) of the following describes the effect of this loss on the Main Turbine?

a. The Main Turbine will trip.

b. The Main Turbine can be brought to rated speed, but at least one 125 Volt bus must be restored to synchronize to the grid.

c. The Main Turbine will not trip, but at least one 125 Volt bus must be restored before turbine speed can be changed.

d. All Main Turbine trips except manual, mechanical overspeed, and low bearing oil pressure will be disabled.

QUESTION: 037 (1.00)

WHICH ONE (1) of the following conditions would result in a main turbine trip?

a. Exhaust Hood temperature of 202F

b. Turbine speed of 1990 RPM

c. EHC Fluid Supply pressure of 1210PSIG

d. Condenser vacuum of 24.5" Hg vac

QUESTION: 038 (1.00)

WHICH ONE (1) of the following will prevent the SBLC SYSTEM from performing it's intended function when SBLC injection is initiated?

a. Squib valve A fails to fire.

b. SBLC Test Tank outlet valve is open.

c. HPCS system injection is already in progress.

d. Motor Control Center 1NHS-MCC2B is de-energized.

QUESTION: 039 (1.00)

Loss of RPS A will de-energize certain radiation monitors which will cause, in addition to other actuations, WHICH ONE (1) of the following?

a. Mechanical Vacuum pump trip (if running).

b. Offgas system isolation.

c. Loss of Offgas Pre-Treatment Rad. Monitor indication.

d. Loss of Offgas Post-Treatment Rad. Monitor indication.

QUESTION: 040 (1.00)

A reactor startup is underway, with the MODE SWITCH in STARTUP. SRMs are being withdrawn to maintain count rate per procedure, and power in the intermediate range. WHICH ONE (1) of the following conditions would generate a rod block?

a. SRM "A" fails low (pegged downscale), IRM "G" is on range 2, all other IRM's are on range 3.

b. SRM "C" fails high (pegged upscale), IRM "G" is on range 8, all other IRM's are on range 9.

c. SRM "B" fails low (pegged downscale), IRM "F" is on range 2, all other IRM's are on range 3.

d. SRM "D" fails high (pegged upscale), IRM "F" is on range 8, all other IRM's are on range 9.

QUESTION: 041 (1.00)

WHICH ONE (1) of the following describes the response of the Control Room Ventilation System on a LOCA signal?

a. Normal outside air intakes close, the air inside the control room is recirculated until the ventilation system is reset.

b. Normal outside air intake closes, remote outside air is supplied to the control room.

c. Normal outside air intakes close, compressed air bottles provide a 36-day supply of breathing air to the control room.

d. Outside air is filtered through the charcoal filtration trains before it is supplied to the control room.

QUESTION: 042 (1.00)

WHICH ONE (1) of the following is the consequence of operating the "B" Diesel generator with a loss of control air pressure?

a. All shutdown functions on the Diesel are inhibited.

b. The jacket cooling water temperature control valve will fail open.

c. All non-emergency shutdown functions on the Diesel are inhibited. Emergency shutdown functions remain operable.

d. The oil cooler cooling water temperature control valve will fail open.

QUESTION: 043 (1.00)

WHICH ONE (1) of the following hazards is the reason that the mechanical vacuum pumps are not operated at reactor power greater than 5%?

a. explosion hazard.

b. corrosive atmosphere.

c. air binding the vacuum pumps.

d. vacuum pump runout.

QUESTION: 044 (1.00)

A failure of the 1NPS-SWG1B bus has occurred while operating at 70% power. The bus has isolated. WHICH ONE (1) of the following would be the status of feed and condensate after this event?

a. Condensate pump B is running, Feed pumps B and C are running.

b. Condensate pumps A and C are running, Feed pump A is running.

c. Condensate pump B is running, Feed pumps A and C are running.

d. Condensate pumps A and B are running, Feed pump C is running.

QUESTION: 045 (1.00)

WHICH ONE (1) of the following "normal" power breaker trips will allow a fast transfer to the "preferred" power source?

a. manual

b. transformer sudden pressure

c. ground fault

d. long time delay overcurrent

QUESTION: 046 (1.00)

Regarding the diesel fire pump, WHICH ONE (1) of the following conditions exceeds the precautions and limitations of SOP-0037?

a. a high coolant temperature alarm occurs about 2 minutes after a 1-hour engine run.

b. Lube oil temperature reaches 220 deg. F at full engine load.

c. Engine coolant temperature reaches 235 deg. F at full engine load.

d. Engine oil pressure is 45 psig after 2 hours at full engine load.

QUESTION: 047 (1.00)

WHICH ONE (1) of the following loads starts LAST during bus load sequencing after a LOCA signal? Assume NO loss of offsite power.

a. LPCS

b. RHR B

c. RHR C

d. HPCS

QUESTION: 048 (1.00)

WHICH ONE (1) of the following describes how the MSIV-PLCS system physically connects to the inboard and outboard MSIV's?

a. Outboard system connects to the outboard MSIV packing leak-off lines, Inboard connects to the inlet side of the outboard MSIV body.

b. Inboard system connects to the inboard MSIV packing leak-off lines, Outboard connects to the inlet side of the outboard MSIV body.

c. Inboard system connects to the inboard MSIV body Outboard connects to the inlet side of the outboard MSIV packing leak-off lines.

d. Outboard system connects to the inboard MSIV packing leak-off lines, Inboard connects to the inlet side of the inboard MSIV body.

QUESTION: 049 (1.00)

The following valves go closed when the offgas post-treatment radiation monitor reaches the HIGH-HIGH-HIGH setpoint

1N64-F054	Pre filter inlet drain valve
1N64-F034A/B	Cooler condenser A/B drain valve
1N64-FO23	Holdup line drain valve

WHICH ONE (1) of the following valves also goes closed?

a. 1N64-F060, Offgas discharge to vent valve

b. 1N64-F016, Condenser drain

c. 1N64-F051 A/B Adsorber Inlet

d. 1N64-F045, Adsorber Bypass

QUESTION: 050 (1.00)

WHICH ONE (1) of the following is the reason that both fuel pool cooling pumps should not be operated simultaneously when both are aligned to the same spent fuel pool?

a. Pump cavitation will occur.

b. The cooling water spargers are designed for single pump operation only.

c. Pump motors will overheat.

d. The heat exchangers will experience excessive vibration.

QUESTION: 051 (1.00)

WHICH ONE (1) of the following ventilation systems is required to operate following a LOCA?

a. Containment and Drywell Purge System

b. Annulus Mixing System

c. Drywell Ventilation System

d. Annulus Pressure Control System

QUESTION: 052 (1.00)

WHICH ONE (1) of the following will generate a rod block with the Reactor Mode Switch in "Refuel"

a. The refuel platform is over the upper pool fuel rack and is moving a fuel bundle.

b. The refuel platform is over the core, and one control rod is withdrawn to position 24.

c. The refuel platform is over the core and the fuel grapple has a fuel bundle loaded on it.

d. The refuel platform is over the upper pool fuel rack and the trolley mounted hoist is loaded.

QUESTION: 053 (1.00)

WHICH ONE (1) of the following is a manual IMMEDIATE ACTION for a loss of offsite power per AOP-004?

a. close the MSIV's.

b. trip the main turbine.

c. trip the main generator.

d. initiate RCIC.

QUESTION: 054 (1.00)

WHICH ONE (1) of the following valves will fail OPEN on decreasing air pressure after the loss of all three electric instrument air compressors?

a. normal HVAC air operated dampers .

b. condensate and heater drain pumps recirc valves.

c. Scram discharge volume vent and drain valves.

d. CRD flow control valves.

QUESTION: 055 (1.00)

WHICH ONE (1) of the following conditions exceeds an automatic turbine trip setpoint?

a. Main bearing oil pressure 10 psig

b. Turbine speed 1905 rpm

c. EHC fluid supply pressure 1150 psig

d. Exhaust hood temp. 215 deg F

QUESTION: 056 (1.00)

WHICH ONE (1) of the following is the reason for the high water level reactor scram?

a. to offset the positive reactivity associated with a large addition of cold feedwater.

b. to insure that the reactor is scrammed before the MSIV's isolate on high level.

c. to cause a rapid, significant level decrease due to void collapse.

d. to back up the high pressure reactor scram on certain transients.

QUESTION: 057 (1.00)

WHICH ONE (1) of the following is the purpose of the End-Of-Cycle Recirculation Pump Trip (EOC-RPT)

a. Prevents jet pump cavitation during the transient.

b. Compensates for reduced negative reactivity insertion rate during the initial few feet of control rod travel.

c. Prevents recirc pump cavitation during the transient.

d. Reduces the consequences of an ATWS at the end-of-cycle.

QUESTION: 058 (1.00)

The Plant is operating at 100% power. WHICH ONE (1) of the following is a required IMMEDIATE ACTION on a loss of ALL Turbine Plant Component Cooling Water (CCS) flow? No CCS pumps will restart.

a. Reduce Main Generator load to less than 400 MWe.

b. Manually shift both recirc pumps to slow speed within 2 minutes of the loss of CCS flow.

c. Trip the Instrument Air Compressors and start the Diesel Air Compressor (IAS-C4).

d. Insert a manual reactor SCRAM.

QUESTION: 059 (1.00)

An electrical transient has caused Recirc pump A to trip from fast to off, and Recirc pump B to shift to slow speed. Core power and flow has stabilized in region "B" of the power to flow map. WHICH ONE (1) of the following actions is an allowable method to exit this region per AOP-0024, Core Thermal Hydraulic Instability?

a. Restart the A pump in slow speed.

b. Shift Recirc pump B to fast speed.

c. Insert control rods in normal reverse order.

d. Fully insert the selected rod gang, using IN TIMER SKIP.

QUESTION: 060 (1.00)

A loss of condenser vacuum has occurred, vacuum is currently 15" Hg. WHICH ONE (1) of the following automatic actions should have occurred?

a. Turbine trip only

b. Turbine trip and bypass valve closure

c. Turbine trip and Recirc pump trip

d. Turbine trip, bypass valve closure and Recirc pump trip

QUESTION: 061 (1.00)

WHICH ONE (1) of the following injection systems can NOT be used to control RPV level from the Remote Shutdown panel?

a. RCIC

b. HPCS

c. RHR "A"

d. RHR "B"

QUESTION: 062 (1.00)

A loss of 125 VDC bus 1BYS-PNL02B2 has occurred. No other malfunctions exist. Regarding the RPV level control system, WHICH ONE (1) of the following responses would result?

a. "B" Reactor high level alarm only, loss of "B" feed flow, narrow range, and upset range.

b. "B" Reactor feed pump trips, loss of "B" steam flow, narrow range, and upset range.

c. "B" Reactor high level alarm only, loss of "B" steam flow, wide range, and fuel zone range.

d. "B" Reactor feed pump trips, loss of "B" feed flow, wide range, and fuel zone range.

QUESTION: 063 (1.00)

The Plant is operating at normal 100% power conditions when the "A" CRD pump trips. The "B" CRD pump will not start. WHICH ONE (1) of the following actions is required?

a. SCRAM the reactor if more than one HCU accumulator fault is received.

b. Downshift Reactor recirc pumps to slow speed if no CRD pumps can be restarted within 5 minutes.

c. SCRAM the reactor if more than one CRD high temperature alarm is received.

d. Downshift Reactor recirc pumps to slow speed if less than 2 CCP pumps are running.

QUESTION: 064 (1.00)

Caution # 2 of EOP-1 directs the operator to use E12*FO27A(B) rather than E12*FO42A(B) to secure LPCI injection. What is the reason for this caution?

a. The F042 valve has a history of sticking closed when containment temperatures are high.

b. The F042 valve motor operator is not expected to survive more than 1 or 2 weeks in a steam environment.

c. Operation of F042 may ignite hydrogen caused by steam-metal reactions in the containment.

d. Thermal overloads on F042 are likely to trip if the valve is operated during a LOCA.

QUESTION: 065 (1.00)

A high radiation condition exists in the Annulus ventilation system. You are monitoring the CRT bar-chart display in the control room. WHICH ONE (1) of the following colors on the bar chart indicates questionable data?

a. yellow

b. red

c. light blue

d. white

QUESTION: 066 (1.00)

A LOCA has occurred. Which ONE(1) of the following methods would NOT meet the criteria of providing "Adequate Core Cooling"?

a. Spray with HPCS when RPV level is -210 inches.

b. Spray with LPCS when RPV level is -190 inches.

c. Steam cooling without injection of makeup water, RPV level -200 inches.

d. RPV level at -145 inches, no injection, and ADS in progress.

QUESTION: 067 (1.00)

A MSIV isolation and subsequent reactor scram has occurred. WHICH ONE (1) of the following describes the basis for the action in EOP 1, "RPV Control", which directs that reactor pressure be lowered below 1064.7 psig.

a. Controls RPV pressure to within the capability of high pressure injection system to inject.

b. Controls RPV pressure below the lowest SRV lift pressure.

c. Reduces pressure to a value corresponding to main turbine bypass valves being 100% open.

d. Allows operation of RCIC below the High Pressure isolation setpoint.

QUESTION: 068 (1.00)

During plant operations, a scram signal is generated. Only partial rod motion occurred due to a hydraulic lock. Under these conditions scramming individual control rods can prove more effective than resetting and initiating a manual scram. WHICH ONE (1) of the following states the correct reason for this statement?

a. Scramming individual rods does not require the scram to be reset.

b. Scramming individual rods applies the total available CRD system differential pressure to the single rod.

c. Scramming individual rods allows targeting "high worth" control rods resulting in a more rapid shutdown.

d. Scramming individual rods is effective regardless of CRD hydraulic system pressure.

QUESTION: 069 (1.00)

WHICH ONE (1) of the following is the reason that ADS is inhibited whenever boron injection is required?

a. To prevent a loss of boron from the vessel resulting in a reactivity increase.

b. To prevent a rapid injection of cold, unborated water resulting in a rapid increase in power.

c. To prevent an excessive depressurization that would cause the SLC pumps to runout.

d. To prevent an increase in natural circulation resulting in decreased voiding and an increase in power.

QUESTION: 070 (1.00)

WHICH ONE (1) of the following conditions would be a safety limit violation?

a. While operating at full power the HPCS system initiates and injects for 5 minutes before it is secured.

b. While operating at full power, a MSIV isolation occurs followed by a reactor scram with peak RPV pressure reaching 1305 psig.

c. While operating at 21% power, the EHC pressure regulator fails. Reactor pressure drops to 765 psig before the MSIV's close and the reactor scrams.

d. While refueling the reactor, RPV level decreases to -174 inches before it is restored to +20 inches.

QUESTION: 071 (1.00)

A MSIV isolation has occurred. The reactor has failed to scram. The COF has directed that Standby Liquid Control (SLC) be initiated. The initial SLC tank level was 2040 gallons. WHICH ONE (1) of the following corresponds to the HIGHEST SLC tank level at which the minimum "Hot Shutdown Boron Weight" has been injected?

a. 453 gallons.

b. 458 gallons.

c. 920 gallons.

d. 931 gallons.

QUESTION: 072 (1.00)

EOP-2, "Primary Containment Control", requires the reactor be scrammed before suppression pool temperature reaches 110 Degrees F. WHICH ONE (1) of the following states the reason for this requirement?

a. Assures that the containment design pressure will not be exceeded due to compression of the non-condensable gasses due to the higher water temperature.

b. Assures that with the expected temperature rise of 70 Degrees F during the blowdown phase of an accident, that complete condensation of reactor coolant will occur.

c. Assures the post-LOCA suppression pool hydrodynamic forces are within the design limitation of containment.

d. Assures a reactor shutdown by control rod insertion occurs, to minimize heat rejected to the primary containment, if Emergency Depressurization is required.

QUESTION: 073 (1.00)

Plant conditions are as follows:

- Suppression pool temp. 87 deg. F
- Suppression pool level 20.5 ft.
- Drywell temperature 125 deg. F
- Reactor level 10.5 inches
- Main plant exhaust monitor (channel 4125) reads 3X it's Technical Specification limit

WHICH ONE (1) of the following EOPs should be entered?

a. EOP-1 and EOP-3

b. EOP-2 only

c. EOP-1 and EOP-2

d. EOP-3 only

QUESTION: 074 (1.00)

The Plant is operating at normal 100% power conditions. A leak develops on the lower spent fuel pool, causing a rapid loss of level in the pool. WHICH ONE (1) of the following is the source of the water added to the lower spent fuel pool per SOP-0091, "Fuel Pool Cooling and Cleanup System"?

a. Fire Water

b. Standby Service Water

c. RPCCW

d. TPCCW

QUESTION: 075 (1.00)

The Plant is operating at 100% reactor power when a loss of feedwater heating occurs. WHICH ONE (1) of the following is a required IMMEDIATE action for this loss of feedwater heating?

a. Reduce reactor power by 40 MWE with core flow, then reduce another 110 MWE with core flow and rod insertion.

b. Reduce power to below 95%.

c. If failed fuel exists in the reactor, reduce reactor power by 495 to 500 MWE.

d. Insert control rods in reverse order to get below the 80% rod line.

QUESTION: 076 (1.00)

The Plant is in Cold Shutdown with the RPV head installed. WHICH ONE (1) of the following is an indication of thermal stratification?

a. RPV pressure increases from 0 to 5 psig.

b. RPV metal temperatures in the steam dome are decreasing, and metal temperatures near the bottom head are increasing.

c. RPV pressure decreases from 5 to 0 psig.

d. RPV metal temperatures just below the water line are decreasing, and metal temperatures near the bottom head are increasing.

QUESTION: 077 (1.00)

The following conditions exist:

- Failure to scram
- Reactor power is 20%
- High differential temperature condition in the Auxiliary Building due to a fire.
- Main Steam Isolation valves have closed
- HPCS is required to maintain RPV level
- Rods are being inserted using CRD

WHICH ONE (1) of the following systems should be isolated if it is discharging into the Auxiliary building?

a. High Pressure Core Spray

b. Reactor Water Cleanup

c. Control Rod Drive

d. Fire Suppression

QUESTION: 078 (1.00)

EOP-3, Secondary Containment and Radioactivity Release Control, must be entered if the Secondary Containment differential pressure is above the maximum normal operating differential pressure.

WHICH ONE (1) of the following is the reason for this entry condition?

a. A significant steam leak into the secondary containment is indicated.

b. A significant water leak from primary system may be discharging radioactivity directly to the secondary containment.

c. A potential for the loss of secondary containment is indicated that could result in uncontrolled radioactive releases.

d. An increase in the unmonitored ground level radioactive releases due to leakage through secondary containment is indicated.

QUESTION: 079 (1.00)

A Loss of Offsite Power has occurred. Div I Diesel generator is currently loaded to 2500 KW. WHICH ONE (1) of the following is the MAXIMUM additional load that can be imposed on the generator?

a. 360 KW

b. 580 KW

c. 630 KW

d. 730 KW

QUESTION: 080 (1.00)

WHICH ONE (1) of the following would be identified as THERMAL HYDRAULIC INSTABILITY per AOP-0024?

a. APRM swings of 7%, occurring each 2-3 seconds.

b. LPRM peak-to-peak variations of 5 watts each 2-3 seconds.

c. APRM swings of 12%, occurring each 2-3 seconds.

d. LPRM peak-to-peak variations of 10 watts each 10 seconds.

QUESTION: 081 (1.00)

The Plant is operating at 10% power. WHICH ONE (1) of the following should be immediately verified following a Turbine/Generator trip?

a. Reactor Scram.

b. Bypass valves open.

c. Generator Output Breakers open.

d. Recirculation Pumps down shift to LFMGs.

QUESTION: 082 (1.00)

You have been instructed to control drywell temperature and pressure operating all drywell cooling. While doing this drywell cooling automatically isolates. WHICH ONE (1) of the following caused the isolation?

a. Drywell temperature 265 deg F

b. RPV water level -28"

c. Drywell pressure 1.82 psid

d. Loss of 120 VAC power

QUESTION: 083 (1.00)

The plant has experienced a shutdown due to MSIV closure. Current plant conditions are:

- All rods are fully inserted
- Reactor pressure is 700 psig
- Suppression pool temperature is 134 Degrees F.

WHICH ONE (1) of the following corresponds to the Suppression Pool level that is the transition point to the unsafe region of the Heat Capacity Level Limit curve?

a. 19 feet

b. 17 feet, 6 inches

c. 16 feet

d. 15 feet, 6 inches

QUESTION: 084 (1.00)

The plant was operating at 100% power when a full scram signal was generated due to improper maintenance. The reactor failed to scram. The COF transitioned from EOP-1 to EOP-1A as required. The ATC operator attempts ARI and is unsuccessful. WHICH ONE (1) of the following describes why it is NOT correct to immediately trip the recirc pumps to effect a rapid power reduction?

a. Will result in entering the region of thermal/hydraulic instability.

b. An excessive feedwater temperature reduction rate will cause power to increase rapidly.

c. The large shrink could result in isolation signals being generated complicating the event.

d. The Main Turbine could trip from RPV level swell.

QUESTION: 085 (1.00)

Suppression pool level is offscale high. WHICH ONE (1) of the following describes the effect on indicated containment and drywell pressure?

a. containment pressure less than actual, drywell pressure greater than actual.

b. containment pressure greater than actual, drywell pressure is still accurate.

c. containment pressure greater than actual, drywell pressure less than actual.

d. containment pressure less than actual, drywell pressure is still accurate.

QUESTION: 086 (1.00)

A loss of RPS bus "B" has occurred. WHICH ONE (1) of the following is the required IMMEDIATE ACTION?

a. Take the Power Transfer switch on P610 to ALT-A, Depress the INBOARD and OUTBOARD ISOLATION RESET buttons on P601.

b. Take the Power Transfer switch on P610 to ALT-B, RESET the half-scram.

c. Take the Power Transfer switch on P610 to ALT-B, Depress the INBOARD and OUTBOARD ISOLATION RESET buttons on P601.

d. Take the Power Transfer switch on P610 to ALT-A, RESET the half-scram.

QUESTION: 087 (1.00)

You have been directed to isolate a pump for maintenance. System temperature and pressure are 190 degrees F and 255 psig, respectively. The two valves immediately downstream of the pump are air operated and fail CLOSED. WHICH ONE (1) of the following states the requirements for downstream isolation of the pump?

a. One valve must be CLOSED and gagged.

b. Both valves must be CLOSED and gagged.

c. One valve must be CLOSED and it's air supply isolated.

d. Both valves must be CLOSED and their air supplies isolated.

QUESTION: 088 (1.00)

WHICH ONE (1) of the following is the correct sequence for unisolating a Condensate pump during removal of a Clearance?

a. OPEN the suction valve, CLOSE vents and drains, OPEN the discharge valve.

b. CLOSE vents and drains, OPEN the suction valve, OPEN the discharge valve.

c. OPEN the discharge valve, OPEN the suction valve, CLOSE vents and drains.

d. CLOSE vents and drains, OPEN the discharge valve, OPEN the suction valve.

QUESTION: 089 (1.00)

The Reactor is being refueled. WHICH ONE (1) of the following describes the MINIMUM requirements per Technical Specifications for on-coming licensed operators at shift change?

a. 1 SS, 1 RO; a licensed operator must remain in the Control Room at all times.

b. 1 SS, 1 additional SRO, 1 RO; a licensed operator must remain in the Control Room at all times.

c. 1 SS, 1 RO; a licensed SRO must remain in the Control Room at all times.

d. 1 SS, 1 additional SRO, 1 RO; a licensed SRO must remain in the Control Room at all times.

QUESTION: 090 (1.00)

Operators are preparing to enter an RHR cubicle to isolate equipment for unplanned maintenance. The dose rate in the general area of work is 220 mRem/hr. Work will take approximately 30 minutes. WHICH ONE (1) of the following identifies the requirements for entry?

a.	RWP required	Standing RWP
	Hand held dose rate meter	REQUIRED
	Device set to alarm at a preset dose	NOT required
	Allowable stay times calculated	NOT required
b.	RWP required	Standing RWP
	Hand held dose rate meter	NOT required
	Device set to alarm at a preset dose	REQUIRED
	Allowable stay times calculated	NOT required
c.	RWP required	Specific RWP
	Hand held dose rate meter	NOT required
	Device set to alarm at a preset dose	REQUIRED
	Allowable stay times calculated	NOT required
d.	RWP required	Specific RWP
	Hand held dose rate meter	NOT required
	Device set to alarm at a preset dose	REQUIRED
	Allowable stay times calculated	REQUIRED

QUESTION: 091 (1.00)

Prior to clearing the drywell for normal access and work, plant conditions necessitate entry by operations personnel. WHICH ONE (1) of the following FAILS to satisfy the requirements allowing drywell entry?

a. Hydrogen concentration is 2.1%.

b. Oxygen concentration is 19.9%.

c. Ambient temperature is 111 degrees F.

d. One operator is standing by to provide emergency assistance.

QUESTION: 092 (1.00)

WHICH ONE (1) of the following individuals grants FINAL concurrence to disable an annunciator circuit in the Main Control Room?

a. Shift Supervisor

b. Operations Supervisor

c. Assistant Plant Manager - Operations

d. Plant Manager

QUESTION: 093 (1.00)

During a station emergency, WHICH ONE (1) of the following is the primary method to communicate plant status to the Nuclear Regulatory Commission?

a. Emergency Notification System

b. ESP Computer link

c. Commercial Telephone

d. Civil Defense Radio

QUESTION: 094 (1.00)

10 CFR 50.54 states that reasonable action that departs from a license condition or technical specification may be taken in an emergency to protect the health and safety of the public. WHICH ONE (1) of the following states the MINIMUM approval required?

a. any licensed operator

b. any licensed senior reactor operator

c. Site Emergency Director

d. Recovery Manager

QUESTION: 095 (1.00)

WHICH ONE (1) of the following is an acceptable way to perform position verification on a throttled valve? (assume that the valve is installed in a system with local flow indication controlled by the valve, and the valve has a rising stem)

a. Observe the initial valve operator's action in positioning the throttled valve.

b. Perform an independent visual check of the valve position by observing the valve stem.

c. Independently verify the valve position by a second valve operation.

d. Observe flow indication through the throttled valve's system.

QUESTION: 096 (1.00)

A search and rescue team has been sent out to find personnel not accounted for during a site evacuation. WHICH ONE (1) of the following would require the team to report back to the OSC coordinator and request further instructions?

a. Airborne contamination is detected.

b. Smearable contamination areas must be entered.

c. Radiation levels greater than 10 R/hr are encountered.

d. Personnel exposure reaches River Bend administrative limits.

QUESTION: 097 (1.00)

The door to a Locked High Radiation area is damaged while moving maintenance equipment through and cannot be fully closed. WHICH ONE (1) of the following actions is required?

a. Notify the Plant Manager.

b. Generate a Condition Report.

c. Document in the Key Control Log.

d. Issue a clearance and hang a Danger tag.

QUESTION: 098 (1.00)

WHICH ONE (1) of the following is the MINIMUM level of authority to make additions or deletions of procedures located in the field?

a. Operations Procedure Coordinator

b. Control Operations Foreman

c. Shift Supervisor

d. Operations Supervisor

QUESTION: 099 (1.00)

During the performance of a Surveillance Test Procedure (STP), an indicating light is inoperable due to maintenance on its power supply. Verification of the indicator's status is not required to satisfy the STP acceptance criteria. WHICH ONE (1) of the following is necessary to continue the STP?

a. Complete an Exception Report and attach it to the STP.

b. Document the discrepancy in the Comments section of the STP.

c. Obtain approval from the Shift Supervisor.

d. Generate a Preliminary Change Notice.

QUESTION: 100 (1.00)

Instrument air pressure lowers to 60 psig. WHICH ONE (1) of the following is the required IMMEDIATE ACTION?

a. Insert a manual SCRAM

b. Insert a manual SCRAM and CLOSE the MSIVs

c. Insert a manual SCRAM only if individual rod movement is observed

d. Manually startup Standby Gas Treatment

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

RIVER BEND INITIAL WRITTEN EXAMINATION HANDOUT PACKAGE

In addition to the attached information, sen'or operator examinees were also provided the following during their written examination:

- Technical Specification sections 3 and 4 (without bases),
- Complete copy of EIP-2-001 (emergency event classification), and
- The following sections of the Emergency Operating Procedure Flow Charts:
  - Tables 1, 2, and 5,
  - Caution #1,
  - Figures 1-6, and
  - List of Enclosures.

ATTACHMENT 1

EVENT MATRIX FOR EMERGENCY CLASSIFICATION LEVELS
(Sheet 1 of 6)

EVENT CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
A. REACTOR COOLANT BOUNDARY DEGRADATION	ECCS initiated and water injected into Reactor Vessel - **EAL 1 (Page 19)** OR Abnormal reactor coolant pressure - **EAL 4 (Page 22)** OR Exceeding primary coolant system leak rate technical specification (Tech. Spec. 3.4.3.2) - **EAL 5 (Page 22)**	Primary coolant leak rate greater than 50 GPM with reactor water temperature > 200°F - **EAL 2 (Page 30)**	Inability to maintain reactor water level (reactor water level cannot be determined) (known Loss of Coolant Accident greater than makeup pump capacity) - **EAL 1 (Page 38)**	Loss of 2 of 3 fission product barriers with a potential loss of third barrier - **EAL 2 (Page 50)**
B. ABNORMAL CORE CONDITION AND FUEL DAMAGE	Fuel damage indication - **EAL 3 (Page 21)**	Severe loss of fuel clad - **EAL 1 (Page 30)**	Degraded core with possible loss of coolable geometry - **EAL 2 (Page 38)**	Loss of 2 of 3 fission product barriers with a potential loss of third barrier - **EAL 2 (Page 50)**
C. STUCK OPEN SAFETY RELIEF OR STEAM LINE BREAK	Failure of an SRV to close in operational modes 1, 2, or 3 - **EAL 6 (Page 23)**	Steam line break inside containment with MSIV HIGH leakage - **EAL 3 (Page 30)**	Steam line break outside containment without isolation - **EAL 3 (Page 39)**	Loss of 2 of 3 fission product barriers with a potential loss of third barrier - **EAL 2 (Page 50)**

ATTACHMENT 1

EVENT MATRIX FOR EMERGENCY CLASSIFICATION LEVELS
(Sheet 2 of 6)

EVENT CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
D. CONTAINMENT INTEGRITY/ESF SYSTEM SHUTDOWN LCO	Loss of drywell or primary/secondary containment integrity requiring Technical Specification shutdown (Tech. Spec. 3.6.1, 3.6.2, 3.6.3, 3.6.4, and 3.6.5) - **EAL 8 (Page 24)** OR Loss of Emergency Core Cooling System (ECCS) requiring Technical Specification shutdown (Tech. Spec. 3.5.1) - **EAL 9 (Page 24)**			Loss of 2 of 3 fission product barriers with a potential loss of third barrier - **EAL 2 (Page 50)**
E. LOSS OF SHUTDOWN FUNCTIONS, DECAY HEAT REMOVAL		Loss of functions needed to maintain plant in cold shutdown (< 200°F) - **EAL 7 (Page 31)**	Loss of functions needed to bring the reactor from hot shutdown to cold shutdown - **EAL 6 (Page 41)**	Other plant conditions exist that make release of large amounts of radioactivity in a short time possible - **EAL 4 (Page 53)**
F. REACTOR PROTECTION SYSTEM FAILURES		Failure of the automatic reactor protection systems to initiate and complete a scram which brings the reactor subcritical - **EAL 8 (Page 32)**	Transient requiring operation of shutdown systems with failure to scram (continued power generation but no core damge immediately evident) - **EAL 7 (Page 41)**	

ATTACHMENT 1

EVENT MATRIX FOR EMERGENCY CLASSIFICATION LEVELS
(Sheet 3 of 6)

EVENT CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
G. ABNORMAL RADIOLOGICAL EFFLUENT OR RADIATION LEVELS	Radiological effluent technical specification limit exceeded (Tech. Spec. 3.11.1 or 3.11.2) - EAL 2 (Page 20) OR Significant loss of accident assessment capability or loss of effluent monitoring capability requiring shutdown (Tech. Spec. 3.3.7.1, 3.3.7.5) - EAL 11 (Page 25)	Unexpected high radiation levels or high airborne radioactivity, or contamination levels indicating severe degradation in the control of radioactive materials - EAL 4 (Page 31) OR Radiological effluents greater than 10 times Technical Specification Instantaneous Limits (Tech. Spec. 3.11.1 or 3.11.2) - EAL 12 (Page 34)	Effluent monitors detect levels corresponding to greater than 50 mR/hr whole body for 30 minutes, or greater than 500 mR/hr whole body for 2 minutes, or 5 times these levels to the thyroid, at the Site Boundary for adverse meteorology - EAL 11 (Page 45)	Effluent monitors detect levels corresponding to 1 Rem/hr whole body or 5 Rem/hr thyroid at the Site Boundary under actual meteorological conditions - EAL 1 (Page 50) OR Other plant conditions exist that make release of large amounts of radioactivity in a short time possible - EAL 4 (Page 53)
H. FIRE	Fire within the Protected Area lasting more than 10 minutes following implementation of fire suppression measures - EAL 10 (Page 25)	Fire potentially affecting safety systems (pre-fire strategy may be used in this determination) - EAL 10 (Page 33)	Fire compromising the function of a safety system - EAL 9 (Page 44)	Any major internal or external events (e.g., fires, earthquakes, substantially beyond design basis) which could cause massive common damage to plant systems - EAL 5 (Page 54)

ATTACHMENT 1

EVENT MATRIX FOR EMERGENCY CLASSIFICATION LEVELS
(Sheet 4 of 6)

EVENT CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
I. ELECTRIC OR POWER FAILURE	Total loss of offsite power or loss of onsite AC power capability - EAL 7 (Page 23)	Loss of offsite power and loss of all onsite AC power for less than 15 minutes - EAL 5 (Page 31) OR Loss of all onsite DC power for less than 15 minutes - EAL 6 (Page 31)	Loss of offsite power and loss of all onsite AC power for more than or equal to 15 minutes - EAL 4 (Page 40) OR Loss of all vital onsite 125V DC power for more than 15 minutes - EAL 5 (Page 40)	Other plant conditions exist that make release of large amounts of radioactivity in a short time possible - EAL 4 (Page 53)
J. CONTROL ROOM EVACUATION		Evacuation of main control room anticipated or required with control of shutdown at remote shutdown panels - EAL 17 (Page 37)	Evacuation of main control room and control of shutdown systems not established at remote shutdown panels in 15 minutes - EAL 16 (Page 49)	Loss of physical control of facility - EAL 3 (Page 53)
K. LOSS OF MONITORS, ALARMS, COMMUNICATIONS, ETC.	Significant loss of Main Control Room communications capability - EAL 12 (Page 26) OR Significant loss of accident assessment capability or loss of effluent monitoring capability requiring shutdown (Tech. Spec. 3.3.7.1, 3.3.7.5) - EAL 11 (Page 25)	Loss of most or all annunciators in Main Control Room for more than 15 minutes. (Transient has not occurred.) - EAL 11 (Page 34)	Loss of most or all annunciators in Main Control Room for more than 15 minutes. (Plant transient initiated or in-progress while annunciators are lost.) - EAL 10 (Page 44)	

ATTACHMENT 1

EVENT MATRIX FOR EMERGENCY CLASSIFICATION LEVELS
(Sheet 5 of 6)

EVENT CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
L. FUEL HANDLING ACCIDENT		Fuel handling accident with release of radioactivity to containment or fuel building - **EAL 9 (Page 33)**	Major damage to spent fuel in containment or fuel building (e.g., large object damages fuel or water loss below fuel level) - **EAL 8 (Page 42)**	
M. HAZARDS TO PLANT OPERATIONS	Other hazards being experienced or projected which have the potential for endangering the plant - **EAL 15 (Page 27)** OR Other plant conditions exist that warrant increased awareness on the part of the plant operating staff or state and/or local offsite authorities or involve other than normal controlled shutdown (e.g., cooldown rate exceeding Technical Specification limits, pipe cracking found during operation) - **EAL 16 (Page 28)**	Other hazards being experienced or projected which have a significant potential for affecting plant safety - **EAL 15 (Page 36)**	Other hazards being experienced or projected with plant not in cold shutdown - **EAL 14 (Page 48)**	Other plant conditions exist that make release of large amounts of radioactivity in a short time possible - **EAL 4 (Page 53)** OR Any major internal or external events (e.g., fires, earthquakes, substantially beyond design basis) which could cause massive common damage to plant systems - **EAL 5 (Page 54)**

ATTACHMENT 1

EVENT MATRIX FOR EMERGENCY CLASSIFICATION LEVELS
(Sheet 6 of 6)

EVENT CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
N. NATURAL EVENTS	Unusual natural events near site - EAL 14 (Page 27)	Severe natural phenomena experienced beyond Notification of Unusual Event levels - EAL 14 (Page 36)	Severe natural event near site being experienced or projected with plant not in cold shutdown - EAL 13 (Page 48)	Any major internal or external events (e.g., fires, earthquakes, substantially beyond design basis) which could cause massive common damage to plant systems - EAL 5 (Page 54)
O. SECURITY THREATS	Security threat - EAL 13 (Page 26)	Ongoing security compromise - EAL 13 (Page 35)	Security threat involving imminent loss of physical control of the plant - EAL 12 (Page 47)	Loss of physical control of facility - EAL 3 (Page 53)
P. OTHERS	Transportation of contaminated injured individual from site to hospital - EAL 17 (Page 29) OR Required plant shutdown under Technical Specification requirements - EAL 18 (Page 29)	Other plant conditions that warrant precautionary activation of Emergency Response Facilities - EAL 16 (Page 37)	Other plant conditions exist that warrant activation of Emergency Resonse Facilities and Monitoring Teams - EAL 15 (Page 49)	Other plant conditions exist that make release of large amounts of radioactivity in a short time possible - EAL 4 (Page 53)
Q. MULTIPLE FISSION PRODUCT BARRIER FAILURE				Loss of 2 of 3 fission product barriers with a potential loss of third barrier - EAL 2 (Page 50)

ENCLOSURE - 1	SYSTEM DEVICE TABLES		
BUS	POWER FROM:	PROVIDES POWER TO:	EFFECTS OF POWER LOSS
1BYS-PNL01 (CIRC WATER SWGR)	1BYS-CHGR1C 1BYS-BAT1C (B/U) (125 AMP Hour)	1NNS-SWG2A/2B	Loss of DC Control Power to 1SWP-P1A, P1B, P1C; and CWS-P1A, P1B, P1C, P1D; and 1NNS-SWG2A/2B Tie.
		1CIS-CAB2 SUPV. Panel	Loss of power to Circ water Harris Panel Supervisory Cabinet.
1BYS-SWG01A	1BYS-CHGR1A 1BYS-BAT01A1 (B/U) * 1BYS-BAT01A2 (B/U) * *2550 Amp Hour	1BYS-PNL02A1 (NSWG)	See 1BYS-PNL02A1 Below
		1BYS-PNL02A2 (CB)	See 1BYS-PNL02A2 Below
		1BYS-PNL03A (IB)	See 1BYS-PNL03A Below
		1BYS-1NV01A	DC Power Supply to Inverter
		1BYS-1NV02 (Plant Process Computer Ups)	DC Power Supply to Inverter
		1TML-EBOP	Loss of Turbine Emergency Bearing Oil Pump. Possible controlled Turbine shutdown at discretion of OPS Supervisor.
1BYS-PNL02A1	1BYS-SWG01A	1NPS-SWG1A	Loss of Remote Control and Elec. Trip Protection to 13.8 kv Supply Bkrs to : CNM-P1A, P1C; FWS-P1A; Rx Recirc P1A CB5A; 'A' side X1RMS for: 4160V Circ water and River M/U SWG(s); 480V LDC(s) 1A, 1C, 1E, 1G, 1J, 1L, 1N, 1Q, 1S, 1U, 2A, 2C, 2E, 2G, (Cooling Towers), 3A (Clarifier), 3C (WTR) and MCC12A (River M/U).
		1NPS-SWG1C (Via 1RS1 if and Aligned) 1NFS-SWG1D	Loss of Remote Control and Elec. Trip Protection on 1NPS-ACB03 and ACB04.
		1NNS-SWG1A	Loss of Remote Control and Elec. Trip Protection for 4160V Supply Bkrs to: CCS-P1A, CRD-P1A; HDL-P1A/P1C; HVN-CHLR1A; HVN-P1A; NNS-SWG1C (NSWG), NNS-SWG4A (RW Chillers) and 1ENS*SWG1B
		1NNS-SWG1C (Via 1RS2 if aligned)	Loss of Remote Control and Elec. Trip Protection to 4160V Supply Bkrs to: CCS-P1C; HVN-CHLR1C; HPCS 4160V SWG-1E22*S004.
		1NJS-SWG(s) 1A, 1C, 1E, 1G, 1S, 1U.	Loss of Remote Control and Elec. Trip Protection to 480V Distribution Bkrs on noted LDC(s).

BUS	POWER FROM:	PROVIDES POWER TO:	EFFECTS OF POWER LOSS
1BYS-PNL02A1 (Continued)	1BYS-SWG01A	1G36-PNLP002 F/D(s) RWCU	Loss of 125Vdc Control Power to RWCU F/D Panel.
		1EGS*PNL3A Annun. Power	Loss of 125Vdc Power to DIV I D/G Local Panel Annunciators.
		1EGF*P2A	Loss of Power to DIV I D/G Fuel Oil Booster pump.
		1BYS-SWG01A	Loss of DC Control Power to SWG Load Bkrs.
		11HS-SWG01D (Security Computer)	Loss of DC Control Power to SWG Load Bkrs.
1BYS-PNL02A2 (Control Room)	1BYS-SWG01A	1H13-P612-'C' Rx High Level Trip [C33 CRIS]	Loss of Signal From: 'C' Narrow Range Xmtr; "Rx High Water Level" on Channel C.
		1H13-P604 - Inv D17-K699A PRM	Loss of Power to 'A' Offgas Post-Treat Rad Monitor with resultant "INOP".
1BYS-PNL02A2	1BYS-SWG01A	1H13-P855 230KV Generator Output Bkrs.	Loss of Power to Aux Relay Circuit for Generator Bkrs. 20635 and 20640.
		1H13-P612/Rx Recirc CB(s) 3A & 4A Bkr Cont.	Loss of Remote Control, Elec Trip Protection and Indication for Recirc P1A CB 3A & 4A.
		1H13-P632 ARI Outboard Logic & Valve Power	Loss of ARI Outboard Scram capability with loss of power to ARI valves F162B, 162D & 164A and OUTB Relay Logic.
		1H13-P632 ARI Inboard Logic and Valve Power	Loss of ARI Inboard Scram capability with loss of power to ARI valves F162A, 162C, 160 & 164B and INBD Relay Logic.
1BYS-PNL03A	1BYS-SWG01A	1NNS-SWG4A/4B	Loss of Remote Control and Elec Trip Protection for HVN-CHLR2A, B, C, (RW) and NNS-SWG4A/B TIE.
		1NNS-SWG5A	Loss of Remote Control and Elec. Trip Protection for Rx Recirc P1A CB 2A.

BUS	POWER FROM:	PROVIDES POWER TO:	EFFECTS OF POWER LOSS
1BYS-PNL03A (Continued)	1BYS-SWG01A	1NJS-SWG(s) 1J, 1L, 1N, 1Q	Loss of Remote Control and Elec. Trip Protection to 480V Distribution Bkrs on noted LDC(S).
		1B33-PNLP001A LFMG 'A' Relay logic	Loss of Power to LFMG 'A' Protective Relaying Circuit 1RCSA16.
		1EXS-PNL1 Main Gen. Exciter Cabinet	Loss of Power to Ckt. 1EXSN10 for ALTERREX Excitation System.
		1FWS-P3A	Loss of Power to FWS-P1A Aux oil pump.
		1CES-PNL1B &1C (Gen. PRI. TRIP)	Loss of Power to Generator Prima y Trip Relay Ckt. Loss of Elec. Fault Protection.
		1CES-PNL1C (STA. Service Sudden Press Trip)	Loss of Power for Main and Norm. Sta. Serv. XFMR Sudden Pressure Trip Relay Ckt.
		1CES-PNL1F & 1H (Pref. XFMRS E&C Pri. Trip Protection)	Loss of Power to E&C Pref. XFMRS. Primary Trip Protection.
		2CES-PNL1I&1G (Pref. XFMRS E&O Pri Trip Protection)	Loss of Power for E&O Pref. XFMRS Primary Trip Protection.
		1CES-PNL1G & 1H (E&C Pref. XFRMS Protection Ckt.)	Loss of Power to Protection Ckt. 1SPRA11 for E&C Preferred XFMRS.
		1CES-PNL1H/Bkr. 15	Loss of Power to "Dual Channel Xfr Trip" Ckt. 1SPRN02 for R.S.S. No. 1 (Tone System).
		1CES-PNL1H/Bkr. 20	Loss of Power to "Dual Channel Xfer Trip Ckt 1SPGN09" for Unit generator (Tone System).
1BYS-SWG01B	1BYS-CHGR1B 1BYS-BA101B1 (B/U)* 1BYS-BA101B2 (B/U)* *(2550 Amp Hour)	1BYS-PNL02B1	See 1BYS-PNL02B1 Below
		1BYS-PNL02B2	See 1BYS-PNL02B2 Below
		1BYS-PNL03B	See 1BYS-PNL03B Below

BUS	POWER FROM:	PROVIDES POWER TO:	EFFECTS OF POWER LOSS
1BYS-SWG01B (Continued)	1BYS-CHGR1B 1BYS-BAT01B1 (B/U)* 1BYS-BAT01B2 (B/U)* *(2250 Amp Hours)	1BYS-INV01B*	DC Supply to I rter*
		1BYS-INV04	DC Supply to .nverter
		RCIC Gland Seal Comp.*	Loss of Power to Comp. Mtr.*
		1TML-ESOP *Common Breaker	Loss of Turbine Emerg Seal Oil Pump
1BYS-PNL02B1	1BYS-SWG01B	1NPS-SWG1B	Loss of Remote Control and Elec. Trip Protection to 13.8KV Supply Brkrs. to: CNM-P1B; FWS-P1B/P1C; Rx Recirc P1B CB5B; 'B' Side XFRMS for: 4160V-Circ Water and River M/U SWG(s); 480V LDC(s) 1B, 1D, 1F, 1H, 1K, 1M, 1P, 1R, 1T, 1V, 2B, 2D, 2F, 2H, (Cooling Towers); 3B (Clarifier), 3D (WTH) and MCC12B (River M/U).
		1NPS-SWG1C (Via TRS1 if and Aligned) 1NPS-SWG1D	Loss of Remote Control and Elec. Trip Protection for 1NPS-ACB43 and ACB44.
		1NNS-SWG1B	Loss of Remote Control and Elec. Trip Protecion for 4160V Supply Bkrs to: CCS-P1B; CRD-P1B; HDI-P1B/P1D; HVN-CHLR1B; HVN-P1B; NNS-SWG1C (NSWG), NNS-SWG4B (RW Chillers) and 1ENS*SWG1A.
		1NNS-SWG1C (Via TRS2 if Aligned)	See BYS-PNL02A1 Sec. for Loads.
		1NJS-SWG(s) 1B, 1D, 1F, 1H, 1T, 1V	Loss of Remote Control and Elec. Trip Protection to 480V Distribution Bkrs. on noted LDC(s).
		1E22*SKDS001	Loss of Power to HPCS' Lister Diesel Air Comprsr.
		1EGT*P2B	Loss of Power to DIV II D/G Fuel Oil Booster Pump.
		1EGS*PNL3B Annun Power	Loss of Power to DIV II D/G Local Panel Annunicators.
		1CES-PNL2A Gen Anti-Motoring Protection	Loss of Power for Main Generator Anti-Motoring Protection Ckt.

ENCLOSURE - 1	SYSTEM DEVICE TABLES		
BUS	POWER FROM:	PROVIDES POWER TO:	EFFECTS OF POWER LOSS
1BYS-PNL02B1 (Continued)	1BYS-SWG01B	1BYS-SWG01B	Loss of DC Control Power to SWG Load Bkrs.
1BYS-PNL02B2	1BYS-SWG01B	1H13-P613 "B" Rx High Level Trip [C33 Ckts]	Loss of Signal from: "B" FWS Flow, "B" Narrow Range Lvl Xmtr. and Upset Range Lvl Xmtr. ;"Rx High Water Level" signal on Channel B.
		1H13-P855/Turb. Gen. Condensor Neck Heater	Loss of Power to Runback Ckt. 11MBN05.
		1H13-P613/Rx Recirc CB(s) 3B&4B Bkr. Control	Loss of Remote Control, Elec. Trip Protection and indication for Recirc P1B CB 3B and 4B.
		1H13-P604/Inv. D17-K699B PRM	Loss of Power to "B" Offgas Post-Treat Rad Monitor with resultant "INOP".
		1H13-P850/BOP Annun. Electronics	Loss of BOP annunciator System P850 power supply.
		1H13-P630 Annun. Sys.	Loss of NSSS Annunciator Power for System P630.
		1H13-P846/23/500 KV Swyd Supv. Cab.	Loss of power to Fancy Point Supervisory Cabinet
1BYS-PNL03B	1BYS-SWG01B	1NNS-SWG5B	Loss of Remote Control and Elec. Trip Protection for Rx Recirc P1B CB 2B.
		1NJS-SWG(s) 1K, 1M, 1P, 1R	Loss of Remote Control and Elec. Trip Protection to 480V Distribution Bkrs on noted LDC(S).
		1B33-PNLP001B LFMG "B" Relay Logic	Loss of Power to LFMG "B" Protective Relaying Ckt. 1RCSB16.
		1GMC-PNL101/H2-Stator Cooling	Loss of "IESI" Mode Auto Start of Stator Cooling P1A/P1B and Emergency Seal Oil Pump.
		1FWS-P3B	Loss of Power to FWS-P1B Aux Oil Pump.

ENCLOSURE - 1	SYSTEM DEVICE TABLES		
BUS	POWER FROM:	PROVIDES POWER TO:	EFFECTS OF POWER LOSS
1BYS-PNL03B (Continued)	BYS-SWG01B	1FWE-P3C	Loss of Power to FWS-P1C Aux Oil Pump.
		1CES-PNLA/Generator B/U Trip Protection	Loss of B/U Protective Trip Circuit for Main Generator.
		1CES-PNL1D & 1E/Unit Trip Relays	Loss of power to Unit Trip Relay Ckt. 1SPUN02.
		1CES-PNL1G & 1H/PFD XFMR B/U Protection	Loss of Power for PFD XFMRS E and C B/U Protective Trip Relay Ckt.
		1CES-PNL1N	Loss of power to "DUAL CHANNEL XFER TRIP" CKT 1SPRN03 for R.S.S. No. 2 Tone System.
		1CES-RAK1/Seq. of Events Recorder	Loss of power for recorder.
		2CES-PNL1E & 1G/Brkr. 13	Loss of power for PFD XFMRS F and D B/U Trip Protection CKT. 1SPRB06.
		2CES-PNL1E & 1G/Brkr. 14	Loss of power for PFD XFMRS F and D Protection CKT. 1SPRB11.
1BYS-PNL10A	1BYS-CHGR04 1BYS-BAT04 (B/U)	1NNS-SWG6A/B	Loss of control power.
		1NJS-LDC4A/B	Loss of control power.
		1SWC-PNL100	Loss of control and indication for equipment on local SWC control panel.

ENCLOSURE - 1	SYSTEM DEVICE TABLES		
BUS	POWER FROM:	PROVIDES POWER TO:	EFFECTS OF POWER LOSS
1ENB*SWG01A	1ENB*CHGR1A 1ENG*BAT01A - B/U (2100 Amp Hours)	1ENB*PNL02A	See ENB*PNL02A Below
		1ENB*PNL03A	See ENB*PNL03A Below
		1ENB*PNL04A	See ENB*PNL04A Below
		1ENB*MCC1	See ENB*MCC1 Below
		1EGE*CAB01A	Loss of DC Power to 'A' D/G Exciter Cabinet.
		1ENB*INV01A	Loss of DC Supply to Inverter.

BUS	POWER FROM:	PROVIDES POWER TO:	EFFECTS OF POWER LOSS
1ENB*PNL02A	1ENB*SWG01A	1H13*P601 Meter Ckt	loss of RHR 'A" MOV(s) 73A, 74A, 3A & 48A Position indication meters.
		1H13*P601 Valve Ckt	loss of RCIC Supv. lights for Governor & Trip & Throttle Valves. RCIC Steam Drain Trap AOV(s) fail close.
		1H13*P621 Relay Logic	loss of 125 VDC to RCIC turbine "MANUAL" trip. loss of 125 VDC to DIV I RCIC initiation, isolation and trip relay logic.
		1H13*P691 Channel 'A' B/U Scram Ckt.	loss of ability to energize B/U Scram SOV110A. loss of EOC-RPT trip signals to Rx Recirc BRKR 3A&3B.
		1H13*P632 Inverter E51-K603	loss of RCIC Turbine Supervisory lights, power to drain valves, remote turbine trip, Electronic Governor Mechanism (EGM) Control.
		1H13*P851 CCP Aux. Control	loss of CCP DIV I "Low Low Pressure" MOV(s) isolation and loss of DIV I "MANUAL INITIATE" capability.
		1H13*P628 B21-1060	loss of DIV 1 (A SOV(s)) 125 VDC for operation, permissives, interlocks and indication of ADS valves.
		1H13*P629 Relay Logic	loss of RHR Relay logic 'A'. loss of RCIC DIV I isolation signal to turbine trip circuit. loss of RHR P1A trip signal off suction MOV position. loss of DIV I RPV Lvl 2/Lvl 8 signals to RCIC logic.
		1H13*P629 Relay Logic & Power Supply E21A-PS1	loss of EPCS Relay logic. loss of 24 VDC PS to EPCS trip units. loss of EPCS and RCIC Alarm/Ann. loss of RCIC F045 position signal. loss of RHR-P1B Suc. Trip. Refer to Enclosure 2.2.
		1H13*P623 Nuc Steam Supply Shutoff	Isolation of DIV I NSSSS RHR, RWCU and MSL drains. Initiation signal for BOP LOCA Isolation.

ENCLOSURE - 1	SYSTEM DEVICE TABLES		
BUS	POWER FROM:	PROVIDES POWER TO:	EFFECTS OF POWER LOSS
1ENB*PNL02A (Continued)	1ENB*SWG01A	1H13*P851 SWP Aux Control	Loss of "MANUAL INITIATE" function for SSW DIV I pump & MOV(s). Loss of auto function capability of pump & MOV(s) on "Low Low SWP Pressure".
		1H13*P851 D/G Aux	Loss of various DIV I D/G status light functions.
		1H13*P851 Rx Plant Vent. Aux Ckt.	Loss of Auto Function of 1HVR*AOV166, 1HVN*MOV(s) 502A & 503A on low Containment to Annulus Differential Pressure Condition.
		1H13*P951A Digital Alarm Isolator Ckts	Trip signal to both CRD pumps.
		1H13*P851 Digital Alarm Isolator Ckts	Loss of multiple annunciators, computer points & relays.
		1H13*P951 Digital Isolator Ckts	Loss of alarms & computer points.
1ENB*PNL03A	1ENB*SWG01A	1EGS*PNL2A D/G Relay Panel	Loss of 125 VDC power to DIV I D/G "B/U FAULT PROTECTION" Ckt.
		1EGE*CAB01A DIV I D/G Excitation Cabinet	Loss of 125 VDC Excitation Control Circuit for DIV I D/G
		1C61*PNLP001 Remote S/D Panel	Loss of alternate PS that allows operation of RCIC, RHR-P1A, and SRV(s) from Remote S/D Panel in "EMERG." Mode.
		1ENS*SWG2A D/G Neutral Swg	Loss of Remote Control and Elec. Trip Protection for Stby D/G A Neutral Bkr 1ENS*ACB11.
		1EGS*PNL2A Relay Pnl Diffential Protection	Loss of "Differential Protection" trip circuit for DIV I D/G.

ENCLOSURE - 1	SYSTEM DEVICE TABLES		
BUS	POWER FROM:	PROVIDES POWER TO:	EFFECTS OF POWER LOSS
1ENB*PNL03A (Continued)	1ENB*SWG01A	1EGS*PNL3A D/G Rear Air Start SOV	Loss of "Rear" start capability of DIV I D/G.
		1EGS*PNL3A D/G Fwd Air Start & Stop SOV	Loss of "Fwd" Start capability and "STOP" capability of DIV I D/G.
		1C61*PNLP001 Remote S/D RCIC Gland Seal Comp.	Loss of DC Control to RCIC Gland Seal Compressor.
		1ENS*SWG3A	Loss of Remote Control and Elec. Trip Protection to Rx Recirc Pump CB 3A.
		1ENS*SWG3B	Loss of Remote Control and Elec. Trip Protection to Rx Recirc Pump CB 3B.
1ENB*PNL04A	1ENB*SWG01A	1ENS*SWG1A	Loss of Remote Control and Elec. Trip Protection to: DIV I D/G Output Bkr, RHR-P1A, EPCS Pump, Stby SWP-P2A and 4160V Supply Bkrs to EJS LDC(S) XFMRS 1A and 2A and DIV I Stby Cooling Tower XFMR.
		1EJS*LDC1A	Loss of Remote Control and Elec. Trip Protection to: HVK*CHLR1A & 1C, HVC*ACU(s) 1A & 2A, BYS-CHGR1A and ENB*CHGR1A, DIV I D/G Exhaust Fan, SFC-P1A HVF*FLT 'A' Heater and Supply Bkr(s) to 1EHS*MCC8A and MCC14A.
		1EJS*LDC2A	Loss of Remote Control and Elec. Trip Protection to DIV I - H2 Recombiner, GIS fan, Annul. Mix fan, 'A' Cntmnt UC, GIS FLT 'A' Heater, Rx Polar Crane, DIV I DW UC(s) MCC, and EHS*MCC(s)2A, 2C, 2E, 2G, 2J, 2L, 15A and 1HVR*UC11A.
		1ENB*SWG1A	Loss of Elec. Trip Protection to all load distribution breakers.

BUS	POWER FROM:	PROVIDES POWER TO:	EFFECTS OF POWER LOSS
1ENB*MCC1	1ENB*SWG01A	1E51*F010 1E51*F013 1E51*F019 1E51*F022 1E51*F031 1E51*F045 1E51*F046 1E51*F059 1E51*F068	Loss of DC Power to Electrically operate all RCIC DC MOV(s).
		1E51*C002V	Loss of DC Electrical Power to RCIC Turbine Trip and Throttle Valve.
1ENB*SWG01B	1ENB*CHGR1B 1ENB*BAT01B (B/U) (2100 Amp Hours)	1ENB*PNL02B	See 1ENB*PNL02B Below
		1ENB*PNL03B	See 1ENB*PNL03B Below
		1EGE*CAB01B	Loss of DC to 'B' D/G Exciter Cabinet.
		1ENB*INV01B	Loss of DC Supply to Inverter
1ENB*PNL02B	1ENB*SWG01B	1ENS*SWG1B	Loss of Remote Control and Elec. Trip Protection to DIV II: D/G Output Bkr., RHR-P1B, P1C; Stby SWP-P2B, P2D; 4160V Supply Bkrs to EJS LDC XFMRS 1B and 2B and DIV II Stby Cooling Tower XFMR 3B.
		1EJS*LDC1B	Loss of Remote Control and Elec. Trip Protection to: HVK*CHLR1B, 1D; HCV*AC01B, 2B; BYS-CHGR1B; ENB*CHGR1B, DIV II D/G Exhaust Fan; SFC-P1B; HVF*FLT B Heater; Supply Bkrs to 1EHS*MCC8B, 14B.
		1EJS*LDC2B	Loss of Remote Control and Elec. Trip Protection to: DIV II: H2 Recombiner; GTS Fan; Annul. Mix Fan; 'B' Cntmnt UC; GTS*FLT 'B' Heater; and Supply Bkrs. to: 1EHS*MCC(s) 2B, 2D, 2F, 2H, 2K and 1NHS-MCC(s) 101 (Turbine lube oil pumps) and 102 (DIV II DW UC(s)).
		1H13*P601 Meter Ckt.	Loss of RHR "B" MOV(S) 3B, 48B, 73B, 74B position indication meter.

BUS	POWER FROM:	PROVIDES POWER TO:	EFFECTSOF POWER LOSS
1ENB*PNL02B (Continued)	1ENB*SWG01B	1H13*P601 Valve Control	RCIC Steam Drain Trap AOV(s) fail close and lose indication.
		1H13*P852 CCP Aux Control	loss of CCP DIV II "low-low Pressure" MOV(s) isolation and loss of DIV II "MANUAL INITIATE" capability.
		1H13*P692 Channel 'B' B/U Scram Ckt.	loss of ability to energize B/U Scram SOV110B. loss of EOC-RPT trip signals to Rx Recirc BRKR 4A & 4B.
		1H13*P852 Rx Plant Vent. Aux. Ckt.	loss of Auto function of HVR*AOV(s) 128, 129 & 130, HVN*MOV102, and SWP*MOV(s) 502B & 503B on low Containment to Annulus Differential Pressure Condition.
		1H13*P618 Control Panel RHR	loss of RHR Relay logic 'B'. loss of RCIC DIV II isol. signal to turbine trip circuit. loss of RHR-P1B trip signal off suction MOV position.
		1H13*P618 Relay logic	loss of 125 VDC to DIV II RCIC initiation, isolation and trip relay logic.
		1H13*P631 B21-1060	loss of DIV II (8 SOV(s)) 125VDC for operation, permissives, interlocks and indication for ADS valves.
		1H13*P852 Stby SWP Aux Control	loss of "MANUAL INITIATE" function for DIV II SSW pumps & MOV(s). loss of auto function capability of pumps & MOV(s) on "Low Low SWP Pressure".
		1H13*P952A Digital Alarm Isolator Ckt.	Trip signal to both CRD pumps.
		1H13*P852 D/G Aux.	Loss of various DIV II D/G status lights functions.
		1H13*P852 Digital Computer Isolator Ckts.	loss of multiple annunciators, computer points & relays.

BUS	POWER FROM:	PROVIDES POWER TO:	EFFECTS OF POWER LOSS
1ENB*PNL02B (Continued)	1ENB-SWG01B	1HI3*P622 Nuc. Steam Supply Shutoff	Isolation of DIV II NSSSS RHR, RWCU & MSL drains. Initiation signal for BOP LOCA Isolation.
		1HI3*P618 AIT Output	Loss of RCIC F045 position signal to steam drain trap ADV(s). Loss of trip signal to RHR-P1B from Suc MOV interlock.
		1ENB*SWG01B	Loss of 125VDC to distrbution Bkr(s).
		Inverter E12A-PS1	Refer to Enclosure 2.1
1ENB*PNL03B	1ENB*SWG01B	1EGS*PNL2B Relay Pnl.	Loss of 125VDC power to DIV II D/G "B/U FAULT PROTECTION" Generator Ckt.
		1EGF*CAB01B DIV II D/G Excitation Cabinet	Loss of 125VDC Excitation control circuit for DIV II D/G.
		RSS*PNL192 Remote S/D Panel	Loss of control power and indication for SRV(s) 51C, 51D & 51G in "EMERGENCY" mode.
		1ENS*SWG2B D/G Neutral Swg	Loss of Remote Control and Elec. Trip Protection for Stby D/G B Neutral Bkr 1ENS*ACB31.
		1EGS*PNL2B Relay Pnl. Differential Protection	Loss of power to "Differential Protection" trip circuit for DIV II D/G.
		1EGS*PNL3B D/G Rear Air Start SOV	Loss of "Rear" start capability of DIV II D/G.
		1EGS*PNL3B D/G fwd Air Start & Stop SOV(s)	Loss of "FWD" start capability and "STOP" capability of DIV II D/G.
		1ENS*SWG4A	Loss of Remote Control and Elec. Trip Protection to Rx Recirc Pump CB 4A.
		1ENS*SWG4B	Loss of Remote Control and Elec. Trip Protection to Rx Recirc Pump CB 4B.

ENCLOSURE - 1	SYSTEM DEVICE TABLES		
BUS	POWER FROM:	PROVIDES POWER TO:	EFFECTS OF POWER LOSS
1HIS-SWG01D	1HIS-CHGR1D 1HIS-BAT01D (B/U)* (2550 Amp Hour)	1HIS-INV01 (Security Computer UPS)	Loss of DC Power to Inverter
1E22*S001PNL	1E22*CHGR 1E22*BATT(s) (B/U)	4160V Bkr Control/ 1E22*S008 SWGR	Loss of Remote Control & Elec. Trip Protection.
		4160V Metal Clad Bkr Control Relaying	Loss of DC Control Power for SWG Relay Circuits.
		DIV III D/G Fuel Prime & Lube Oil Pumps	Loss of Power to both pumps.
		DIV III D/G Turbo Oil Pump	Loss of Power to pump.
		DIV III D/G Field Flash	Loss of Power to FIELD FLASH Circuit.
		DIV III D/G Control Cab	Loss of DIV III D/G Engine Control Power.
		DIV III D/G Generator Control Cab	Loss of DIV III D/G Generator Control power.
		1H13*P625	Loss of Power to Computer Input Cab.
		1H13*P808	Loss of Power to DIV III Circuits.
		1H13*P601 HPCS Control	Loss of Power to P601 Circuits.
		Inverter E22A-PS1	Refer to Enclosure 2.3

9 9-1-92

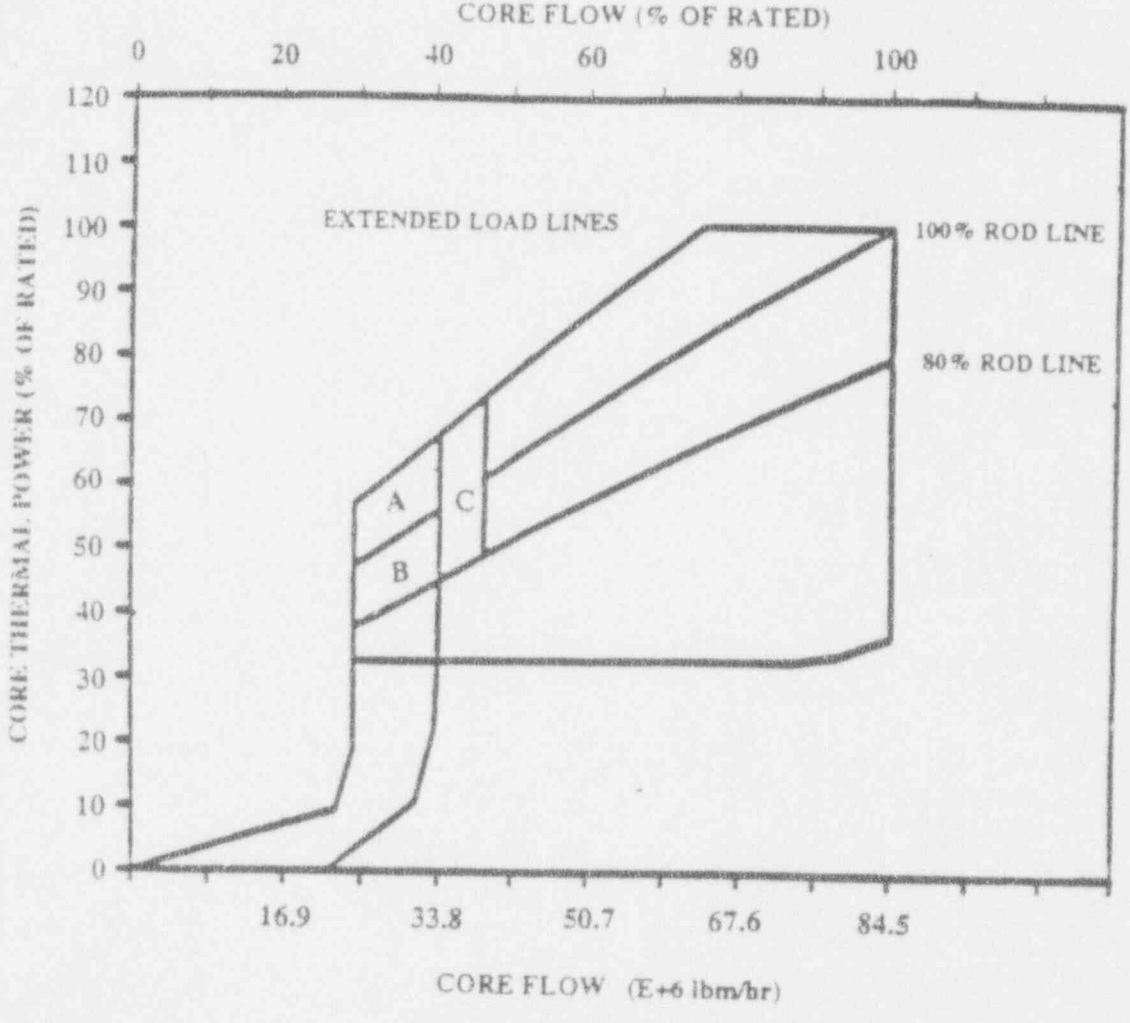
ENCLOSURE - 1

STANDBY LIQUID CONTROL INJECTION REQUIREMENTS

TANK LEVEL PRIOR TO INJECTION GAL	TANK LEVEL AFTER INJECTION OF 78 lb B-10 GAL	TANK LEVEL AFTER INJECTION OF 111 lb B-10 GAL
1550	704	346
1575	715	352
1600	727	358
1625	738	363
1650	750	369
1675	761	374
1700	772	380
1725	784	386
1750	795	391
1775	806	397
1800	818	402
1825	829	408
1850	840	413
1875	852	419
1900	863	425
1925	875	430
1950	886	436
1975	897	441
2000	909	447
2025	920	453
2050	931	458
2075	943	464
2100	954	469
2125	965	475
2150	977	481
2175	988	486
2200	1000	492
2225	1011	497
2250	1022	503
2275	1034	509
2300	1045	514
2325	1056	520
2350	1068	525
2375	1079	531
2400	1090	537
2425	1102	542
2450	1113	548

NOTE - When tank level prior to injection falls between values, the smaller value should be used.

FIGURE 1
DEFINED OPERATING REGIONS



REGION A — REACTOR POWER GREATER THAN THE 100% ROD LINE
CORE FLOW LESS THAN 40% OF RATED CORE FLOW

REGION B — REACTOR POWER BETWEEN THE 80% AND 100% ROL LINES
CORE FLOW LESS THAN 40% OF RATED CORE FLOW

REGION C — REACTOR POWER GREATER THAN THE 80% ROD LINE
CORE FLOW BETWEEN 40% AND 45% OF RATED CORE FLOW

ANSWER: 001 (1.00)

b.

REFERENCE:

1. RBNS: LOTM-9-4 page 14 OF 22
2. KA NUMBER: 215004K404 (2.8/2.9)

215004K404 ..(KA's)

ANSWER: 002 (1.00)

b.

REFERENCE:

1. RBNS: LOTM-5-5, p. 15 of 29
2. RBNS: LOTM-57-5, tables.
3. RBNS: AOP-0014, Rev 6, p. 7 of 53

K/A: 201001K205 [4.5*/4.5*]

201001K205 ..(KA's)

ANSWER: 003 (1.00)

d.

REFERENCE:

1. RBNS: SOP-0002, Rev 8, p 3 of 402, Precaution 2.7

K/A: 201001A206 [2.9/2.9]

201001A206 ..(KA's)

ANSWER: 004 (1.00)

a.

REFERENCE:

1. RBNS: LOTM 6-4, p. 19 of 53

K/A: 201005A302 [3.5/3.5]

201005A302 ..(KA's)

ANSWER: 005 (1.00)

a.

REFERENCE:

1. SOP-0003 Rev. 9A step 2.12 (10% is also a precaution.)

KA : 202002A208 (3.3/3.3)

202002A208 ..(KA's)

ANSWER: 006 (1.00)

b.

REFERENCE:

1. LOTM-19-5 page 17 of 35

K/A: 203000A302 [4.0/3.9]

203000A302 ..(KA's)

ANSWER: 007 (1.00)

c.

REFERENCE:

1. SOP-0031, Rev 8, para. 2.16 (Precautions & Limitatio.

K/A: 219000G010 [3.4/3.5]

219000G010 ..(KA's)

ANSWER: 008 (1.00)

a.

REFERENCE:

1. RBNS: SOP-0031 Rev 8, 2.17

K/A: 209001G010 [3.4/3.6]

209001G010 ..(KA's)

ANSWER: 009 (1.00)

c.

REFERENCE:

1. RBNS: SOP-0030, Rev 8, page 2 of 34, 2.5
2. RBNS: LOTM 3-4, Table 8, p. 26 of 31

KA: 295008K207 [2.9/3.0]

295008K207 ..(KA's)

ANSWER: 010 (1.00)

d.

REFERENCE:

1. RBNS: LOTM-16-4, p. 4 of 14

K/A: 211000A302 [3.9/3.9]

211000A302 ..(KA's)

ANSWER: 011 (1.00)

d.

REFERENCE:

1. RBNS: LOTM-15-5, p. 10-14

K/A: 212000K412 [3.9/4.1]

212000K412 ..(KA's)

ANSWER: 012 (1.00)

c.

REFERENCE:

1. RBNS: LOTM-15-5, p. 13 of 17

K/A: 241000A206 [3.1/3.2]

241000A206 ..(KA's)

ANSWER: 013 (1.00)

d.

REFERENCE:

1. RBNS: LOTM-15-5, Figure 5

K/A: 212000K106 [3.5/3.6]

212000K106 ..(KA's)

ANSWER: 014 (1.00)

c.

REFERENCE:

1. RBNS: LOTM-10-4, Table 1

K/A: 215003K601 [3.8/3.8]

215003K601 ..(KA's)

ANSWER: 015 (1.00)

b.

REFERENCE:

1. RBNS: LOTM 12-4, p. 6 of 20, and Table 4, p. 17 of 20,
2. RBNS: T.S. Table 3.3.1-1

K/A: 215005A203 [3.6/3.8]

215005A203 ..(KA's)

ANSWER: 016 (1.00)

a.

REFERENCE:

1. RBNS: LOTM-3-4, p. 5, 6, and 7 of 31

K/A: 216000K304 [3.8/4.0]

216000K304 ..(KA's)

ANSWER: 017 (1.00)

a.

REFERENCE:

1. RBNS: LOTM 20-4, Table 1,

K/A: 217000K601 [3.4/3.5]

217000K601 ..(KA's)

ANSWER: 018 (1.00)

c.

REFERENCE:

1. RBNS: SOP-0035, Rev 8 p. 2 of 43, 2.4

K/A: 217000G010 [3.4/3.5]

217000G010 ..(KA's)

ANSWER: 019 (1.00)

b.

REFERENCE:

1. RBNS: LOTM-21-4, Table 1, p. 8 of 12

K/A: 218000K501 [3.8/3.8]

218000K501 ..(KA's)

ANSWER: 020 (1.00)

a.

REFERENCE:

1. RBNS: LOTM-21, Fig. 2

K/A: 218000K201 [3.1*/3.3*]

218000K201 ..(KA's)

ANSWER: 021 (1.00)

d.

REFERENCE:

1. RBNS: AOP-0003, Rev 6, Encl. 1, p. 2 of 4
2. RBNS: AOP-0003, Rev 6, Encl. 2, p. 3 of 7
3. RBNS: AOP-0010, Rev 7, p. 2 of 10

K/A: 223002A302 [3.5/3.5]

223002A302 ..(KA's)

ANSWER: 022 (1.00)

a.

REFERENCE:

1. RBNS: LOTM-63-4, Table 2, p. 17 of 29
K/A: 223001K611 [3.0/3.2]

223001K611 ..(KA's)

ANSWER: 023 (1.00)

b.

REFERENCE:

1. RBNS: LOTM-24-4, p. 4,5,6 of 21, Table 2, and Fig. 20
K/A: 239002A407 [3.6/3.6]

239002A407 ..(KA's)

ANSWER: 024 (1.00)

b.

REFERENCE:

1. RBNS: LOTM-58-4, p. 21, 22 of 40
K/A: 264000K402 [4.0/4.2]

264000K402 ..(KA's)

ANSWER: 025 (1.00)

d.

REFERENCE:

1. RBNS: LOTM 64-4, p. 8 of 18, Table 4

K/A: 261000K401 [3.7/3.8]

261000K401 ..(KA's)

ANSWER: 026 (1.00)

d.

REFERENCE:

1. RBNS: LOTM-33-5, p. 14 of 30, Table 3

K/A: 259001K405 [2.7/2.8]

259001K405 ..(KA's)

ANSWER: 027 (1.00)

b.

REFERENCE:

1. RBNS: LOTM-34-5 p. 11 of 13,
2. RBNS: LOTM-3-4, p. 26 of 31, Table 8

K/A: 259002K302 [3.7/3.7]

259002K302 ..(KA's)

ANSWER: 028 (1.00)

c.

REFERENCE:

1. RBNS: LOTM-4-4, p. 15 of 19
   K/A: 201003K404 [3.6/3.7]

   201003K404 ..(KA's)

ANSWER: 029 (1.00)

   a.

REFERENCE:

1. RBNS: LOTM-7-4, p. 9, 10 of 32
   K/A: 202001K402 [3.1/3.2]

   202001K402 ..(KA's)

ANSWER: 030 (1.00)

   c.

REFERENCE:

1. RBNS: SOP-0090, Rev 10, p. 3 of 83, 2.4
   K/A: 204000A205 [2.7/2.8]

   204000A205 ..(KA's)

ANSWER: 031 (1.00)

   b.

REFERENCE:

1. RBNS: SOP-0090, Rev 10, p. 5 of 83, 2.27

K/A: 204000G010 [3.2/3.2]

204000G010 ..(KA's)

ANSWER: 032 (1.00)

a.

REFERENCE:

1. RBNS: SOP-0031, p. 5 of 101, 2.19.2

K/A: 205000G010 [3.2/3.3]

205000G010 ..(KA's)

ANSWER: 033 (1.00)

a.

REFERENCE:

RBNS: SOP-0031, Rev 8, p. 3, 4 of 101, 2.5, 2.13

K/A: 205000A102 [3.3/3.2]

205000A102 ..(KA's)

ANSWER: 034 (1.00)

a.

REFERENCE:

1. RBNS: LOTM-51-4, p. 4 of 58

K/A: 239001K506 [2.8/2.9]

239001K506 ..(KA's)

ANSWER: 035 (1.00)

d.

REFERENCE:

1 RBNS: LOTM-24-4, p. 9 of 21

K/A: 239001A208 [3.6/3.6]

239001A208 ..(KA's)

ANSWER: 036 (1.00)

a.

REFERENCE:

1. RBNS: LOTM-27-5, p. 50 of 63
2. RBNS: AOP-0002 2.1.12 Rev 7

K/A: 245000K606 [3.0/3.2]

245000K606 ..(KA's)

ANSWER: 037 (1.00)

b.

REFERENCE:

1. RBNS: AOP-0002, Rev 7, p. 2 of 5
K/A: 245000A301 [3.6/3.6]

245000A301 ..(KA's)

ANSWER: 038 (1.00)

b.

REFERENCE:

1. RBNS: LOTM-16-4, p. 8 of 14
K/A: 211000A308 [4.2/4.2]

211000A308 ..(KA's)

ANSWER: 039 (1.00)

a.

REFERENCE:

RBNS: LOTM-66-4, p.4 of 19
K/A: 272000K601 [3.0/3.2]

272000K601 ..(KA's)

ANSWER: 040 (1.00)

c.

REFERENCE:

RBNS: LOTM-9-4, Table 1, Table 3, p. 18, 20 of 22

K/A: 215004K401 [3,7/3.7]

215004K401 ..(KA's)

ANSWER: 041 (1.00)

d.

REFERENCE:

1. RBNS: LOTM-61-4, p. 4, 5 of 38

K/A: 290003K401 [3.1/3.2]

290003K401 ..(KA's)

ANSWER: 042 (1.00)

a.

REFERENCE:

1. RBNS: SOP-0053, Rev 8, p. 8 of 83, 2.7

K/A: 264000G010 [3.2/3.6]

264000G010 ..(KA's)

ANSWER: 043 (1.00)

a.

REFERENCE:

1. RBNS: LOTM-29-4, p. 5 of 13

K/A: 271000K404 [3.3/3.6]

271000K404 ..(KA's)

ANSWER: 044 (1.00)

b.

REFERENCE:

1. RBNS: LOTM-31-4, Table 2, p. 19 of 26
2. RBNS: LOTM-33-5, Table 8, p. 27 of 30

K/A: 256000K201 [2.7*/2.8]

256000K201 ..(KA's)

ANSWER: 045 (1.00)

b.

REFERENCE:

1. RBNS: LOTM-56-5, p. 4, 5 of 44

K/A: 262001A302 [3.2/3.3]

262001A302 ..(KA's)

ANSWER: 046 (1.00)

c.

REFERENCE:

1. RBNS: SOP-0037, Rev 9, p. 2 of 113
   K/A: 286000G010 [3.2/3.5]

   286000G010 ..(KA's)

ANSWER: 047 (1.00)

B

REFERENCE:

1. RBNS: LOTM-56-5, Table 4, p. 21, 22, of 44
   K/A: 262001A304 [3.4/3.6]

   262001A304 ..(KA's)

ANSWER: 048 (1.00)

a.

REFERENCE:

1. RBNS: LOTM-52-4, p. 5 of 14
   K/A: 239003K101 [3.3/3.4]

   239003K101 ..(KA's)

ANSWER: 049 (1.00)

a.

REFERENCE:

1. RBNS: AOP-0039, Rev 6, p. 2 of 8
K/A: 271000A204 [3.7/4.1]

271000A204 ..(KA's)

ANSWER: 050 (1.00)

b.

REFERENCE:

1. RBNS: SOP-0091, Rev 7B, p 5 of 90, 2.17
K/A: 233000K102 [2.9/3.0]

233000K102 ..(KA's)

ANSWER: 051 (1.00)

b

REFERENCE:

1. RBNS: LOTM-63-4, p. 4, 5 of 29
K/A: 288000A203 [3.5/3.7]

288000A203 ..(KA's)

ANSWER: 052 (1.00)

c.

REFERENCE:

1. RBNS: LOTM-70-5, Table 1, p. 25 of 26
   K/A: 234000a302 [3.1/3.7]

234000A302 ..(KA's)

ANSWER: 053 (1.00)

d.

REFERENCE:

1. RBNS: AOP-0004, Rev-9, p. 2 of 29
   K/A: 295003G010 [3.9*/4.1*]

295003G010 ..(KA's)

ANSWER: 054 (1.00)

b.

REFERENCE:

1. RBNS: AOP-0008, Rev 6, p. 2 of 15
   Note: HVAC fails CLOSED
   K/A: 295019K207 [3.2/3.2]

295019K207 ..(KA's)

ANSWER: 055 (1.00)

a.

REFERENCE:

1. RBNS: AOP-0002, Rev 7, p. 2 of 5
   K/A: 295005A201 [2.6/2.7]

295005A201 ..(KA's)

ANSWER: 056 (1.00)

a.

REFERENCE:

1. RBNS: LOTM-15-5, p. 13 of 17
   K/A: 295006K202 [3.8/3.8]

295006K202 ..(KA's)

ANSWER: 057 (1.00)

b.

REFERENCE:

1. RBNS: LOTM-15-5, p. 14 of 17
   K/A: 295006K306 [3.2/3.3]

295006K306 ..(KA's)

ANSWER: 058 (1.00)

d.

REFERENCE:

1. RBNS: AOP-0017, Rev 6, p. 3 of 5
   K/A: 295018G010 [3.4*/3.3*]

295018G010 ..(KA's)

ANSWER: 059 (1.00)

c.

REFERENCE:

1. RBNS: AOP-0024, Rev 6, p. 4 of 6
   K/A: 295001A101 [3.5/3.6]

295001A101 ..(KA's)

ANSWER: 060 (1.00)

a.

REFERENCE:

1. RBNS: AOP-0005, Rev 7, p. 2 of 6
   K/A: 295002K202 [3.1/3.2]

295002K202 ..(KA's)

ANSWER: 061 (1.00)

b.

REFERENCE:

1. RBNS: AOP-0031 Rev 8, p. 4 of 87

K/A: 295016A106 [4.0/4.1]

295016A106 ..(KA's)

ANSWER: 062 (1.00)

a.

REFERENCE:

1. RBNS: AOP-0014, Rev 6, Encl. 1, p. 5 of 13
2. RBNS: LOTM-57-5, p. 15 of 27

K/A: 295004K203 [3.3/3.3]

295004K203 ..(KA's)

ANSWER: 063 (1.00)

a.

REFERENCE:

1. RBNS: ARP-601-22, Rev 4, p. 2 of 23

K/A: 295022G010 [3.7*/3.5*]

295022G010 ..(KA's)

ANSWER: 064 (1.00)

b.

REFERENCE:

1. RBNS: EPSTG*0002, Rev. 2, p. B-33

K/A: 295027K202 [3.2/3.3]

295027K202 ..(KA's)

ANSWER: 065 (1.00)

c.

REFERENCE:

1. RBNS: LOTM-65-4, P. 7 OF 69

K/A: 295034A101 [3.8/3.8]

295034A101 ..(KA's)

ANSWER: 066 (1.00)

a.

REFERENCE:

1. RBNS: EPSTG*0002, Pg. B-24

K/A: 295031K101 [4.6*/4.7*]

295031K101 ..(KA's)

ANSWER: 067 (1.00)

b.

REFERENCE:

1. EPSTG*0002, Pg. B-79

K/A: 295025K201 [4.1/4.1]

295025K201 ..(KA's)

ANSWER: 068 (1.00)

b.

REFERENCE:

1. EPSTG*0002, Pg. B-376

K/A: 295015A101 [3.8/3.9]

295015A101 ..(KA's)

ANSWER: 069 (1.00)

b.

REFERENCE:

1. RBNS: EPSTG*0002, p. B-380

K/A: 295014A203 [4.0/4.3]

295014A203 ..(KA's)

ANSWER: 070 (1.00)

d.

REFERENCE:

1. TS 2.1.4, Pg. 2-2

K/A: 295009G003 [3.9/4.2]

295009G003 ..(KA's)

ANSWER: 071 (1.00)

c.

REFERENCE:

1. SOP-0028, ENCLOSURE 1, Pg. 8

K/A: 295037A104 [4.5/4.5]

295037A104 ..(KA's)

ANSWER: 072 (1.00)

d.

REFERENCE:

1. RBNS: EPSTG*0002, p. B-216

K/A: 295013G007 [3.3/3.5]

295013G007 ..(KA's)

ANSWER: 073 (1.00)

b.

REFERENCE:

1. RBNS: EOP flow charts

K/A: 295029G011 [4.2*/4.5*]

295029G011 ..(KA's)

ANSWER: 074 (1.00)

b.

REFERENCE:

1. RBNS: SOP-0091, Rev 7B, p. 42 of 90

K/A: 295023A102 [2.9/3.1]

295023A102 ..(KA's)

ANSWER: 075 (1.00)

b.

REFERENCE:

1. RBNS: AOP-0007, Rev 8, p. 2B of 6

K/A: 295014G010 [4.0*/3.9*]

295014G010 ..(KA's)

ANSWER: 076 (1.00)

a.

REFERENCE:

1. RBNS: SOP-0031 Rev 8, 2.19, p. 4 of 101

K/A: 295021K102 [3.3/3.4]

295021K102 ..(KA's)

ANSWER: 077 (1.00)

b.

REFERENCE:

1. RBNS: EOP-3 Lesson Plan E.O. 4
2. RBNS: EOP-3 Flow chart, Step SC-12

K/A: 295032A105 [3.7/3.9]

295032A105 ..(KA's)

ANSWER: 078 (1.00)

c.

REFERENCE:

1. RBNS: EPSTG*0002-1, Appendix B, p. 252 OF 269

K/A: 295035K101 [3.9/4.2]

295035K101 ..(KA's)

ANSWER: 079 (1.00)

c.

REFERENCE:

1. RBNS: AOP-0004, Rev 9, Caution, p. 3 of 39

K/A: 295003A102 [4.2*/4.3*]

295003A102 ..(KA's)

ANSWER: 080 (1.00)

c.

REFERENCE:

1. RBNS: AOP-0024, Rev 6, p. 3 of 6
2. RBNS: Commitment no. 07704, AOP-0024 Ref 6.9
K/A: 295001G011 [3.9/4.2]

295001G011 ..(KA's)

ANSWER: 081 (1.00)

c.

REFERENCE:

1. RBNS: AOP-002, p. 4

KA: 295005A208 [3.2/3.3]

295005A208 ..(KA's)

ANSWER: 082 (1.00)

c.

REFERENCE:

1. RBNS: LOTM 63-4, p. 11
   KA: 295010K205 [3.7/3.8]

295010K205 ..(KA's)

ANSWER: 083 (1.00)

c.

REFERENCE:

1. EOP-1, Figs. 2 & 4,
   K/A: 295030G012 [3.7/4.4]

295030G012 ..(KA's)

ANSWER: 084 (1.00)

d.

REFERENCE:

1. EOP-1A, B-369
   K/A: 295037A102 [3.8/4.0]

295037A102 ..(KA's)

ANSWER: 085 (1.00)

b.

REFERENCE:

1. RBNS: EPSTG*0002, p. B-40,
2. RBNS: EOP-1, Caution 8
   Note: this is not dj with 29502K201 as this deals with LLS
   K/A: 295029G012 [3.6/4.4*]

295029G012 ..(KA's)

ANSWER: 086 (1.00)

c.

REFERENCE:

1. RBNS: AOP-0010, Rev 7, p. 3 of 10,

   K/A: 295020G010 [3.6*/3.5*]

295020G010 ..(KA's)

ANSWER: 087 (1.00)

c.

REFERENCE:

1. ADM-0027, Protective Tagging, Rev. 10, Sections 7.2.2.2 and 7.2.3.1

   K/A: 294001K102 [3.9/4.5]

294001K102 ..(KA's)

ANSWER: 088 (1.00)

b.

REFERENCE:

1. ADM-0027, Protective Tagging, Rev. 10, Section 7.2.2.9

K/A: 294001K102 [3.9/4.5]

294001K102 ..(KA's)

ANSWER: 089 (1.00)

b.

REFERENCE:

1. Technical Specification 6.2.2

K/A: 294001A103 [2.7/3.7]

294001A103 ..(KA's)

ANSWER: 090 (1.00)

c.

REFERENCE:

1. Technical Specification 6.12
2. RSP-0200, Radiation Work Permits, Rev. 6, Sections 5.2.2 and 6.1.3

K/A: 294001K103 [3.3/3.8]

294001K103 ..(KA's)

ANSWER: 091 (1.00)

d.

REFERENCE:

1. RSP-0212, Drywell Entry, Rev. 5, Sections 3.6, 5.1.7 and 5.1.2.7 Warning and Precautions

   K/A: 294001K114 [3.2/3.4]

294001K114 ..(KA's)

ANSWER: 092 (1.00)

c.

REFERENCE:

1. OSP-0015, Problem Annunciator Resolution Program, Rev. 2, Section 5.1

   K/A: 294001A109 [3.3/4.2]

294001A109 ..(KA's)

ANSWER: 093 (1.00)

a.

REFERENCE:

1. EIP-2-006, Notifications, Rev. 16, Section 6.1.5

   K/A: 294001A105 [3.4/3.8]

294001A105 ..(KA's)

ANSWER: 094 (1.00)

b.

REFERENCE:

1. 10 CFR 50.54 (x) and (y)

K/A: 294001A111 [3.3/4.3]

294001A111 ..(KA's)

ANSWER: 095 (1.00)

a.

REFERENCE:

1. ADM-0022, Conduct of Operations, Rev. 14, Section 6.3.12
2. ADM-0076, Rev 0, p 12 of 17
K/A: 294001K101 [3.7/3.7]

294001K101 ..(KA's)

ANSWER: 096 (1.00)

c.

REFERENCE:

1. EIP-2-008, Search and Rescue, Rev. 7, Section 6.5.6

K/A: 294001A116 [2.9/4.7]

294001A116 ..(KA's)

ANSWER: 097 (1.00)

b.

REFERENCE:

1. ADM-0020, Plant Key Control, Rev. 6, Section 5.4

K/A: 294001K105 [3.2/3.7]

294001K105 ..(KA's)

ANSWER: 098 (1.00)

d.

REFERENCE:

1. OSP-0005, Rev 6A, Page 3

K/A: 294001A103 [2.7/3.7]

294001A103 ..(KA's)

ANSWER: 099 (1.00)

b.

REFERENCE:

1. ADM-0015, Station Surveillance Test Program, Rev 14, Section 6.4.6

K/A: 294001A102 [4.2/4.2]

294001A102 ..(KA's)

ANSWER: 100 (1.00)

a.

REFERENCE:

1. RBNS: AOP-008, Rev 6, Immediate Actions, p. 2 of 15

   K/A: 295019G010 [3.7*/3.4*]

295019G010 ..(KA's)

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

A N S W E R K E Y

MULTIPLE CHOICE

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

A N S W E R K E Y

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

A N S W E R K E Y

092 c

093 a

094 b

095 a

096 c

097 b

098 d

099 b

100 a

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

U. S. NUCLEAR REGULATORY COMMISSION
SITE SPECIFIC EXAMINATION
SENIOR OPERATOR LICENSE
REGION 4

CANDIDATE'S NAME: _____

FACILITY: River Bend 1

REACTOR TYPE: BWR-GE6

DATE ADMINISTERED: 94/01/31

INSTRUCTIONS TO CANDIDATE:

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

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

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

_____
Candidate's Signature

A N S W E R S H E E T

Multiple Choice (Circle or X your choice)

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

MULTIPLE CHOICE

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

A N S W E R S H E E T

Multiple Choice (Circle or X your choice)

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

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

A N S W E R S H E E T

Multiple Choice (Circle or X your choice)

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

092 a b c d ____

093 a b c d ____

094 a b c d ____

095 a b c d ____

096 a b c d ____

097 a b c d ____

098 a b c d ____

099 a b c d ____

100 a b c d ____

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

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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)

The Plant is in Operational Condition 3 during preparation for reactor startup. The Shift Supervisor is informed that the LPCS pump has failed its surveillance test, but it is probable that the pump can be repaired within 48 hours. WHICH ONE (1) of the following is the action statement that is in compliance with Technical Specifications?

a. Startup can continue for up to 72 hours while attempts are made to repair the LPCS pump, providing LPCI A,B, and C are first demonstrated operable.

b. It is permissible to startup and run for up to 7 days while repairs are made on the LPCS pump.

c. The LPCS pump must be repaired before transition from Condition 3 to Condition 2.

d. The LPCS pump must be repaired before entering Condition 1, however, it is not required in Condition 2.

QUESTION: 002 (1.00)

With the SRMs fully inserted, WHICH ONE (1) of the following conditions will cause the SRM retract permit light to energize?

a. BOTH of its associated IRMs are on Range 2 or above.

b. BOTH of its associated IRMs are on Range 3 or above.

c. EITHER of its associated IRMs are on Range 2 or above.

d. EITHER of its associated IRMs are on Range 3 or above.

QUESTION: 003 (1.00)

1BYS-PNL02A2 is lost during a partial loss of DC power. WHICH ONE (1) of the following is a possible consequence?

a. The ARI [illegible]enoids will fail open causing a full scram.

b. The ARI [illegible]noids CANNOT be opened, ARI is inoperable.

c. The RCIC injection valve, E51*MOV F013, will fail as-is.

d. The RCIC trip thro[illegible]le valve, E51*C002V, cannot be reset.

QUESTION: 004 (1.00)

WHICH ONE (1) of the following will cause an automatic trip of a running CRD pump?

a. Lube oil pressur[illegible] 5 psig.

b. Pump motor current of 45 amps.

c. System flow of 75 gpm for more than 5 seconds.

d. Pump suction pressure of 20 inches Hg absolute.

QUESTION. 005 (1.00)

Rod 42-27 has an UNACKNOWLEDGED accumulator fault due to liquid in the nitrogen accumulator. You depress the "ACCUM FAULT" pushbutton on the 680 panel (RC&IS system). WHICH ONE (1) of the following indications would be expected on the full core display?

a. BLINKING, RED L.E.D.

b. BLINKING, GREEN L.E.D.

c. STEADY, RED L.E.D.

d. STEADY, GREEN L.E.D.

QUESTION: 006 (1.00)

WHICH ONE (1) of the following is the reason that loop to loop flow mismatch is limited to 5% when core flow is greater than or equal to 70% of rated core flow?

a. To prevent jet pump cavitation.

b. To prevent Recirc pump cavitation.

c. To prevent Recirc pump vibration.

d. To prevent jet pump vibration.

QUESTION: 007 (1.00)

SOP-0031,"Residual Heat Removal" cautions the operator NOT to simultaneously close the RHR HX BYPASS valve (1E12*F048A(B)) and the RHR A HX OUTLET valve (1E12*F003A(B)) while the RHR pump is in service.

WHICH ONE (1) of the following actions should be taken if both of these valves are inadvertently closed in RHR loop B while in suppression pool cooling?

a. Open the F048B first to reduce the differential pressure across the F003B then throttle open F003B.

b. Open the F003B immediately to reestablish flow through the RHR HX.

c. Shutdown the RHR pump prior to opening either the F003B or the F048B.

d. Verify that the minimum flow valve (F064B) is fully open and reopen either F003B or F0048B.

QUESTION: 008 (1.00)

A small-break LOCA has occurred. Reactor level initially fell to -47 inches, HPCS initiated and filled the reactor to a maximum of +55 inches, level is now steady at +40 inches. WHICH ONE (1) of the following describes the status of 1E22*MOV F004, the HPCS injection isolation valve?

a. F004 will open on a High Drywell Pressure signal HPCS initiation even if the HPCS HIGH WATER LEVEL 8 RESET pushbutton has not been depressed, but the HPCS HIGH WATER LEVEL 8 RESET pushbutton must be depressed before the valve will open on a manual signal.

b. F004 will open manually, even if the HPCS HIGH WATER LEVEL 8 RESET pushbutton has not been depressed, but the HPCS HIGH WATER LEVEL 8 RESET pushbutton must be depressed before the valve will open on an High Drywell signal initiation.

c. F004 will not open on a manual OR High Drywell signal until the HPCS HIGH WATER LEVEL 8 RESET pushbutton is depressed.

d. F004 will not open on a manual OR High Drywell signal until the HPCS HIGH WATER LEVEL 8 RESET pushbutton and the HPCS INITIATION RESET pushbutton are depressed.

QUESTION: 009 (1.00)

WHICH ONE (1) of the following describes the effect of a loss of instrument air to the SBLC system?

a. SBLC pump suction valves would fail open.

b. Control room SBLC Storage Tank level indication would be lost, local indication would still be available.

c. SBLC pump suction valves would fail closed.

d. Local and Control room SBLC Storage Tank level indication would be lost.

QUESTION: 010 (1.00)

Reactor pressure is 950 psig, the main turbine has just been synchronized to the grid, and the mode switch is in the STARTUP position. WHICH ONE (1) of the following scram signals is NOT bypassed?

a. Turbine Control Valve Fast Closure.

b. Main steam line isolation valve closure.

c. Reactor high water level.

d. Reactor low water level.

QUESTION: 011 (1.00)

WHICH ONE (1) of the following is the source of the signal for the control valve (CV) fast closure scram?

a. Position limit switches on CVs.

b. Generator amps to Turbine first stage pressure mismatch.

c. CV low trip oil pressure.

d. Electric pressure regulator servomotor position signal.

QUESTION: 012 (1.00)

In accordance with Technical Specifications, WHICH ONE (1) of the following SCRAMS are required to be operable when in operational condition 4 (Cold Shutdown)?

a. High flux IRM

b. Reactor high water level

c. High drywell pressure

d. High Main steam line radiation

QUESTION: 013 (1.00)

WHICH ONE (1) of the following Intermediate Range Monitor (IRM) rod blocks is bypassed when the range selector is positioned to RANGE 1?

a. Detector not fully inserted

b. Upscale

c. Downscale

d. Inoperative

QUESTION: 014 (1.00)

The table below indicates the number of valid LPRM inputs per level for APRM "E". WHICH ONE (1) of the following sets of LPRM inputs will result in an (automatic) APRM INOP trip? ASSUME all channels are unbypassed.

	Number of valid LPRM inputs			
	Level A	Level B	Level C	Level D
a.	4	4	3	0
b.	3	2	3	2
c.	1	4	5	1
d.	4	1	1	5

QUESTION: 015 (1.00)

The Plant is operating at 100% power. ALL of the WIDE RANGE (-160 to 60) level instruments fail LOW. Actual reactor level remains in the normal band. WHICH ONE (1) of the following responses would result?

a. HPCS would initiate.

b. Feedwater flow would increase.

c. Recirc pumps would transfer to slow speed.

d. Reactor would scram on low level.

QUESTION: 016 (1.00)

The following plant conditions exist:

- A total loss of AC power occurs with ENS*SWG1A and ENS*SWG1B buses NOT energized.
- SRVs are being used to control reactor pressure at 900 psig.
- RCIC is manually initiated and is maintaining reactor water level at approximately +20".

A high suppression pool level occurs. WHICH ONE (1) of the following describes the effect of the loss of AC power will have on the transfer of RCIC suction?

a. No effect since suction valves are DC powered and suction transfer will occur normally.

b. Suppression pool suction valve will not open, causing RCIC to trip on low suction pressure when the DC powered CST suction closes.

c. CST suction valve will not close when the suppression pool suction opens since it is AC powered, causing the CST to drain into the suppression pool until manual action is taken.

d. No transfer will take place. RCIC suction will remain on the CST.

QUESTION: 017 (1.00)

If RCIC speed is allowed to lower to 2000 RPM, WHICH ONE (1) of the following consequences is likely to occur first?

a. Unstable operation of the automatic controller.

b. High oil temperature.

c. Turbine Exhaust Check Valve chattering.

d. Steam leaking past gland seals.

QUESTION: 018 (1.00)

WHICH ONE (1) of the following sets of conditions would result in the Automatic Depressurization System (ADS) safety relief valves opening? Assume all ECCS pumps designated as running generate from 150 to 160 psig discharge pressure.

	Reactor Level/Minutes at this level	Drywell Pressure	ECCS pumps Running
a.	-135/6	1.0	RHR A, LPCS
b.	-155/6.75	1.5	RHR B, LPCS
c.	-130/5	1.0	RHR B, RHR C
d.	-145/6.75	1.5	RHR A, LPCS

QUESTION: 019 (1.00)

The Plant is starting up after an outage, turbine warmup is in progress. WHICH ONE (1) of the following signals will cause at least one MSIV to close?

a. Main Steam pressure 830 psig

b. High drywell pressure

c. Loss of one RPS bus

d. RPV level at Level 1

QUESTION: 020 (1.00)

1EJS*SWG2A and B are lost. WHICH of the following safety related components will be de-energized?

a. Containment Unit Cooler A and B

b. Annulus pressure control exhaust fan A and B

c. Containment continuous purge low volume fan

d. All drywell unit coolers

QUESTION: 021 (1.00)

The Plant is at full power conditions. WHICH ONE (1) of the following describes the meaning of an illuminated red light directly above the control switch for Safety Relief Valve FO51G? (FO51G is the SRV on steam line "C" that has both ADS and LLS functions)

a. The ADS timer is initiated

b. The SRV open solenoid is energized.

c. The SRV will open at it's reduced (LLS) setpoint.

d. The acoustic monitor has sensed high noise level downstream of the SRV.

QUESTION: 022 (1.00)

Loss of certain Diesel subsystems will prevent tripping the Diesel. WHICH ONE (1) of the following subsystems is one of these?

a. Forward starting subsystem DC control power.

b. Rear starting subsystem DC control power.

c. Forward starting subsystem air pressure.

d. Rear starting subsystem air pressure.

QUESTION: 023 (1.00)

WHICH ONE (1) of the following sets of conditions will cause Standby Gas Treatment "A" to start? (Assume that the power supplies stated to be available are the ONLY ones available to the SBGT system)

a. Div I 125 VDC is available, 1EJS*SWG3A is available, Reactor level is -15 inches, Reactor building annulus vent GASEOUS radiation high.

b. RPS A is available, 1EJS*SWG3A is available, Reactor level is -45 inches, Reactor building annulus vent GASEOUS radiation high-high.

c. RPS A is available, 1EJS*SWG2A is available, Reactor level is -15 inches, Reactor building annulus vent PARTICULATE radiation high-high.

d. Div I 125 VDC is available, 1EJS*SWG2A is available, Reactor level is -45 inches, Reactor building annulus vent PARTICULATE radiation high.

QUESTION: 024 (1.00)

The Plant is operating at 5% power, 920 psig, with the Mode Switch in STARTUP, when the Reactor Level instrument selected for feedwater control fails downscale.

Which ONE (1) of the following actions/signals will occur as a result of this failure? Assume no operator action.

a. Feedwater flow increases and the reactor scrams on high reactor power. MSIVs stay open.

b. Feedwater flow increases and the reactor feedwater pumps trip on high reactor level.

c. The recirculation flow control valves lock up.

d. The recirculation flow control valves run back to minimum flow.

QUESTION: 025 (1.00)

With RAW DATA selected and displayed on RC&IS, WHICH ONE (1) of the following is an indication of an uncoupled rod ?

a. Rod position indication on the 680 panel reads 48 and the ROD OVERTRAVEL alarm annunciates.

b. Rod position indication on the 680 panel is lost and the ROD OVERTRAVEL alarm annunciates.

c. Rod position indication is "- -" (dash, dash) on the 680 panel and the rod FULL OUT light illuminates.

d. Rod FULL OUT lights are lost on the 680 panel and rod position indication remains at position 48.

QUESTION: 026 (1.00)

WHICH ONE (1) of the following conditions will cause BOTH recirc pumps to automatically transfer to slow speed? Assume that all time delays have timed out.

a. Main steam pressure is 910 psig, recirc pump A suction temp is 532 deg F, recirc pump B suction temp is 530 deg F.

b. Feed temperature is 440 deg F, feed flow is 25 MLB/hour.

c. Main steam pressure is 1050 psig, recirc pump A suction temp is 542 deg F, recirc pump B suction temp is 530 deg F.

d. Feed temperature is 340 deg F, feed flow is 35 MLB/hour.

QUESTION: 027 (1.00)

WHICH ONE (1) of the following is the consequence of opening 1G33-F046 RWCU DRAIN TO MN COND or 1G33-F041 RWCU BYP TO MN COND and 1G33-F035 RWCU DRAIN TO RADWASTE simultaneously?

a. Damage to the RWCU filter-demineralizers.

b. A sudden decrease in reactor level could occur.

c. A loss of condenser vacuum can occur.

d. Damage to the RWCU pump seals.

QUESTION: 028 (1.00)

WHICH ONE (1) of the following describes the optimal lineup for RWCU suction flow during normal full-power operation?

a. Flow should be half from each Recirc line, the bottom head suction should be closed when the reactor is pressurized.

b. Bottom head drain line flow should not exceed 1/2 of total RWCU flow, if the recirc loop suctions are available.

c. Flow should be entirely from the bottom head drain line if it is available.

d. Suction should be from the recirc lines if recirc pumps are in slow speed, and from the bottom head drain line if recirc pumps are in fast speed.

QUESTION: 029 (1.00)

The plant is being cooled down for refueling. WHICH ONE (1) of the following is the reason that RPV water level must be maintained above 75 inches when Cold Shutdown conditions exist and Reactor Recirculation Pumps are secured?

a. To prevent thermal stratification in the RPV.

b. To provide adequate NPSH to the RHR pumps.

c. To maintain an adequate heat sink in case Shutdown Cooling Flow is lost.

d. To provide adequate NPSH to the RWCU pumps.

QUESTION: 030 (1.00)

WHICH ONE (1) of the following sets of RHR flows is procedurally acceptable?

	RHR PUMP FLOW	HX SHELL SIDE FLOW	SERVICE WTR FLOW
a.	6000	5500	5750
b.	6200	5000	5750
c.	6100	5700	5560
d.	6300	5250	5900

QUESTION: 031 (1.00)

WHICH ONE (1) of the following will cause the MSIV's to close?

a. Reactor Level -43 inches

b. Instrument air pressure 75 psig

c. Main Steam flow 125% in Main Steam Line "A"

d. Condenser Vacuum 7.5" Hg

QUESTION: 032 (1.00)

A startup of the Main Turbine is being performed. The Main Turbine is at 60 percent of rated speed, when a loss of 125 VDC Trip Circuit Power is experienced. WHICH ONE (1) of the following describes the effect of this loss on the Main Turbine?

a. The Main Turbine will trip.

b. The Main Turbine can be brought to rated speed, but at least one 125 Volt bus must be restored to synchronize to the grid.

c. The Main Turbine will not trip, but at least one 125 Volt bus must be restored before turbine speed can be changed.

d. All Main Turbine trips except manual, mechanical overspeed, and low bearing oil pressure will be disabled.

QUESTION: 033 (1.00)

WHICH ONE (1) of the following will prevent the SBLC SYSTEM from performing it's intended function when SBLC injection is initiated?

a. Squib valve A fails to fire.

b. SBLC Test Tank outlet valve is open.

c. HPCS system injection is already in progress.

d. Motor Control Center 1NHS-MCC2B is de-energized.

QUESTION: 034 (1.00)

If Main Steam Line Rad Monitor "A" is tripped, WHICH ONE (1) of the following channels will cause a full logic trip of the High Rad. system?

a. Either channel B or C

b. Either channel D or C

c. Channel C ONLY

d. Either channel B or D

QUESTION: 035 (1.00)

A reactor startup is underway, with the MODE SWITCH in STARTUP. SRMs are being withdrawn to maintain count rate per procedure, and power in the intermediate range. WHICH ONE (1) of the following conditions would generate a rod block?

a. SRM "A" fails low (pegged downscale), IRM "G" is on range 2, all other IRM's are on range 3.

b. SRM "C" fails high (pegged upscale), IRM "G" is on range 8, all other IRM's are on range 9.

c. SRM "B" fails low (pegged downscale), IRM "F" is on range 2, all other IRM's are on range 3.

d. SRM "D" fails high (pegged upscale), IRM "F" is on range 8, all other IRM's are on range 9.

QUESTION: 036 (1.00)

The Plant is in refueling with RHR loop A in shutdown cooling, RHR B and C are inoperable. A large break LOCA occurs. WHICH ONE (1) of the following actions is required to initiate LOOP A of RHR in LPCI injection mode?

a. Close the pump suction valve (F006A), open the suction valve (F004A) from the suppression pool, and restart the RHR pump.

b. Close the pump suction valve (F006A), open the suction valve (F004A) from the suppression pool, and manually open the injection valve (F042A).

c. Arm and depress both LPCI initiation pushbuttons.

d. Close the pump suction valve (F006A) and open the suction valve (F004A) from the suppression pool, and verify that the pump auto-starts.

QUESTION: 037 (1.00)

WHICH ONE (1) of the following is the consequence of operating the "B" Diesel generator with a loss of control air pressure?

a. All shutdown functions on the Diesel are inhibited.

b. The jacket cooling water temperature control valve will fail open.

c. All non-emergency shutdown functions on the Diesel are inhibited. Emergency shutdown functions remain operable.

d. The oil cooler cooling water temperature control valve will fail open.

QUESTION: 038 (1.00)

WHICH ONE (1) of the following hazards is the reason that the mechanical vacuum pumps are not operated at reactor power greater than 5%?

a. explosion hazard.

b. corrosive atmosphere.

c. air binding the vacuum pumps.

d. vacuum pump runout.

QUESTION: 039 (1.00)

A failure of the 1NPS-SWG1B bus has occurred while operating at 70% power. The bus has isolated. WHICH ONE (1) of the following would be the status of feed and condensate after this event?

a. Condensate pump B is running, Feed pumps B and C are running.

b. Condensate pumps A and C are running, Feed pump A is running.

c. Condensate pump B is running, Feed pumps A and C are running.

d. Condensate pumps A and B are running, Feed pump C is running.

QUESTION: 040 (1.00)

The following valves go closed when the offgas post-treatment radiation monitor reaches the HIGH-HIGH-HIGH setpoint

1N64-F054	Pre filter inlet drain valve
1N64-F034A/B	Cooler condenser A/B drain valve
1N64-FO23	Holdup line drain valve

WHICH ONE (1) of the following valves also goes closed?

a. 1N64-F060, Offgas discharge to vent valve

b. 1N64-F016, Condenser drain

c. 1N64-F051 A/B Adsorber Inlet

d. 1N64-F045, Adsorber Bypass

QUESTION: 041 (1.00)

WHICH ONE (1) of the following is the reason that both fuel pool cooling pumps should not be operated simultaneously when both are aligned to the same spent fuel pool?

a. Pump cavitation will occur.

b. The cooling water spargers are designed for single pump operation only.

c. Pump motors will overheat.

d. The heat exchangers will experience excessive vibration.

QUESTION: 042 (1.00)

WHICH ONE (1) of the following is a manual IMMEDIATE ACTION for a loss of offsite power per AOP-004?

a. close the MSIV's.

b. trip the main turbine.

c. trip the main generator.

d. initiate RCIC.

QUESTION: 043 (1.00)

WHICH ONE (1) of the following valves will fail OPEN on decreasing air pressure after the loss of all three electric instrument air compressors?

a. normal HVAC air operated dampers .

b. condensate and heater drain pumps recirc valves.

c. Scram discharge volume vent and drain valves.

d. CRD flow control valves.

QUESTION: 044 (1.00)

WHICH ONE (1) of the following is the reason for the high water level reactor scram?

a. to offset the positive reactivity associated with a large addition of cold feedwater.

b. to insure that the reactor is scrammed before the MSIV's isolate on high level.

c. to cause a rapid, significant level decrease due to void collapse.

d. to back up the high pressure reactor scram on certain transients.

QUESTION: 045 (1.00)

WHICH ONE (1) of the following is the purpose of the End-Of-Cycle Recirculation Pump Trip (EOC-RPT)

a. Prevents jet pump cavitation during the transient.

b. Compensates for reduced negative reactivity insertion rate during the initial few feet of control rod travel.

c. Prevents recirc pump cavitation during the transient.

d. Reduces the consequences of an ATWS at the end-of-cycle.

QUESTION: 046 (1.00)

WHICH ONE (1) of the following is the BASIS of the Boron Injection Initiation Temperature in the EOPs? It is the maximum suppression pool temperature:

a. where the HOT SHUTDOWN BORON WEIGHT of boron can be injected before suppression pool temperature exceeds the HEAT CAPACITY TEMPERATURE LIMIT curve.

b. Allowed by Technical specifications during testing which adds heat to the suppression pool.

c. where the COLD SHUTDOWN BORON WEIGHT of boron can be injected before suppression pool temperature exceeds the HEAT CAPACITY TEMPERATURE LIMIT curve.

d. at which RPV depressurization will not result in exceeding the Containment Design Temperature.

QUESTION: 047 (1.00)

The Plant is operating at 100% power. WHICH ONE (1) of the following is a required IMMEDIATE ACTION on a loss of ALL Turbine Plant Component Cooling Water (CCS) flow? No CCS pumps will restart.

a. Reduce Main Generator load to less than 400 MWe.

b. Manually shift both recirc pumps to slow speed within 2 minutes of the loss of CCS flow.

c. Trip the Instrument Air Compressors and start the Diesel Air Compressor (IAS-C4).

d. Insert a manual reactor SCRAM.

QUESTION: 048 (1.00)

WHICH ONE (1) of the following is the MINIMUM recirculation flow at which the plant can operate and be assured of avoiding power oscillations or instabilities?

a. 25% Rated Core Flow

b. 35% Rated Core Flow

c. 40% Rated Core Flow

d. 45% Rated Core Flow

QUESTION: 049 (1.00)

A loss of condenser vacuum has occurred, vacuum is currently 15" Hg. WHICH ONE (1) of the following automatic actions should have occurred?

a. Turbine trip only

b. Turbine trip and bypass valve closure

c. Turbine trip and Recirc pump trip

d. Turbine trip, bypass valve closure and Recirc pump trip

QUESTION: 050 (1.00)

WHICH ONE (1) of the following injection systems can NOT be used to control RPV level from the Remote Shutdown panel?

a. RCIC

b. HPCS

c. RHR "A"

d. RHR "B"

QUESTION: 051 (1.00)

A loss of 125 VDC bus 1BYS-PNL02B2 has occurred. No other malfunctions exist. Regarding the RPV level control system, WHICH ONE (1) of the following responses would result?

a. "B" Reactor high level alarm only, loss of "B" feed flow, narrow range, and upset range.

b. "B" Reactor feed pump trips, loss of "B" steam flow, narrow range, and upset range.

c. "B" Reactor high level alarm only, loss of "B" steam flow, wide range, and fuel zone range.

d. "B" Reactor feed pump trips, loss of "B" feed flow, wide range, and fuel zone range.

QUESTION: 052 (1.00)

The Plant is operating at normal 100% power conditions when the "A" CRD pump trips. The "B" CRD pump will not start. WHICH ONE (1) of the following actions is required?

a. SCRAM the reactor if more than one HCU accumulator fault is received.

b. Downshift Reactor recirc pumps to slow speed if no CRD pumps can be restarted within 5 minutes.

c. SCRAM the reactor if more than one CRD high temperature alarm is received.

d. Downshift Reactor recirc pumps to slow speed if less than 2 CCP pumps are running.

QUESTION: 053 (1.00)

WHICH ONE (1) of the following is the BASIS for the Technical Specification limit for average containment air temperature?

a. To prevent exceeding containment design pressure during a design basis LOCA.

b. To prevent exceeding containment design temperature during a design basis LOCA.

c. To maintain long-term operability of the inboard MSIV's.

d. To maintain long-term operability of MOV's inside containment.

QUESTION: 054 (1.00)

Following a complete loss of shutdown cooling, temperature readings indicate a 1 degree F increase in bulk water temperature every 10 minutes.

Assume the reactor vessel head is on, no other parameters change, and current temperature is 124 deg. F.

WHICH ONE (1) of the following is the minimum amount of time before primary containment MUST be established?

a. 160 minutes

b. 560 minutes

c. 580 minutes

d. 760 minutes

QUESTION: 055 (1.00)

A high radiation condition exists in the Annulus ventilation system. You are monitoring the CRT bar-chart display in the control room. WHICH ONE (1) of the following colors on the bar chart indicates questionable data?

a. yellow

b. red

c. light blue

d. white

QUESTION: 056 (1.00)

A LOCA has occurred. Which ONE(1) of the following methods would NOT meet the criteria of providing "Adequate Core Cooling"?

a. Spray with HPCS when RPV level is -210 inches.

b. Spray with LPCS when RPV level is -190 inches.

c. Steam cooling without injection of makeup water, RPV level -200 inches.

d. RPV level at -145 inches, no injection, and ADS in progress.

QUESTION: 057 (1.00)

A MSIV isolation and subsequent reactor scram has occurred. WHICH ONE (1) of the following describes the basis for the action in EOP 1, "RPV Control", which directs that reactor pressure be lowered below 1064.7 psig.

a. Controls RPV pressure to within the capability of high pressure injection system to inject.

b. Controls RPV pressure below the lowest SRV lift pressure.

c. Reduces pressure to a value corresponding to main turbine bypass valves being 100% open.

d. Allows operation of RCIC below the High Pressure isolation setpoint.

QUESTION: 058 (1.00)

During plant operations, a scram signal is generated. Only partial rod motion occurred due to a hydraulic lock. Under these conditions scramming individual control rods can prove more effective than resetting and initiating a manual scram. WHICH ONE (1) of the following states the correct reason for this statement?

a. Scramming individual rods does not require the scram to be reset.

b. Scramming individual rods applies the total available CRD system differential pressure to the single rod.

c. Scramming individual rods allows targeting "high worth" control rods resulting in a more rapid shutdown.

d. Scramming individual rods is effective regardless of CRD hydraulic system pressure.

QUESTION: 059 (1.00)

WHICH ONE (1) of the following is the reason that ADS is inhibited whenever boron injection is required?

a. To prevent a loss of boron from the vessel resulting in a reactivity increase.

b. To prevent a rapid injection of cold, unborated water resulting in a rapid increase in power.

c. To prevent an excessive depressurization that would cause the SLC pumps to runout.

d. To prevent an increase in natural circulation resulting in decreased voiding and an increase in power.

QUESTION: 060 (1.00)

A fire has occurred in the Control Room. The Shift Supervisor orders the Control Room evacuated. The following manual actions are taken:

. The manual scram pushbuttons are armed and depressed.
. The reactor mode switch is placed in shutdown.
. Control rods are verified as fully inserted.
. HPCS and RCIC are initiated.
. The MSIV's are closed.

WHICH ONE (1) of the following Immediate Operator Actions was NOT performed prior to evacuating the MCR?

a. Tripping the Main Turbine.

b. Initiating RHR A or B in the LPCI mode.

c. Opening 1E12*F009 RHR SHUTDOWN COOLING INBD ISOL VALVE.

d. Initiating LPCS.

QUESTION: 061 (1.00)

WHICH ONE (1) of the following conditions would be a safety limit violation?

a. While operating at full power the HPCS system initiates and injects for 5 minutes before it is secured.

b. While operating at full power, a MSIV isolation occurs followed by a reactor scram with peak RPV pressure reaching 1305 psig.

c. While operating at 21% power, the EHC pressure regulator fails. Reactor pressure drops to 765 psig before the MSIV's close and the reactor scrams.

d. While refueling the reactor, RPV level decreases to -174 inches before it is restored to +20 inches.

QUESTION: 062 (1.00)

A MSIV isolation has occurred. The reactor has failed to scram. The COF has directed that Standby Liquid Control (SLC) be initiated. The initial SLC tank level was 2040 gallons. WHICH ONE (1) of the following corresponds to the HIGHEST SLC tank level at which the minimum "Hot Shutdown Boron Weight" has been injected?

a. 453 gallons.

b. 458 gallons.

c. 920 gallons.

d. 931 gallons.

QUESTION: 063 (1.00)

WHICH ONE (1) of the following corresponds to the baseline Protective Action Recommendations that should be implemented immediately during a GENERAL EMERGENCY while awaiting further technical data?

a. Shelter 2 mile radius, shelter 5 miles downwind.

b. Evacuate 2 mile radius, shelter 5 miles downwind.

c. Evacuate 2 mile radius, evacuate 10 miles downwind.

d. Evacuate 2 mile radius, shelter 10 miles downwind.

QUESTION: 064 (1.00)

EOP-2, "Primary Containment Control", requires the reactor be scrammed before suppression pool temperature reaches 110 Degrees F. WHICH ONE (1) of the following states the reason for this requirement?

a. Assures that the containment design pressure will not be exceeded due to compression of the non-condensable gasses due to the higher water temperature.

b. Assures that with the expected temperature rise of 70 Degrees F during the blowdown phase of an accident, that complete condensation of reactor coolant will occur.

c. Assures the post-LOCA suppression pool hydrodynamic forces are within the design limitation of containment.

d. Assures a reactor shutdown by control rod insertion occurs, to minimize heat rejected to the primary containment, if Emergency Depressurization is required.

QUESTION: 065 (1.00)

Plant conditions are as follows:

- Suppression pool temp. 87 deg. F
- Suppression pool level 20.5 ft.
- Drywell temperature 125 deg. F
- Reactor level 10.5 inches
- Main plant exhaust monitor (channel 4125) reads 3X it's Technical Specification limit

WHICH ONE (1) of the following EOPs should be entered?

a. EOP-1 and EOP-3

b. EOP-2 only

c. EOP-1 and EOP-2

d. EOP-3 only

QUESTION: 066 (1.00)

The Plant is operating at 100% reactor power when a loss of feedwater heating occurs. WHICH ONE (1) of the following is a required IMMEDIATE action for this loss of feedwater heating?

a. Reduce reactor power by 40 MWE with core flow, then reduce another 110 MWE with core flow and rod insertion.

b. Reduce power to below 95%.

c. If failed fuel exists in the reactor, reduce reactor power by 495 to 500 MWE.

d. Insert control rods in reverse order to get below the 80% rod line.

QUESTION: 067 (1.00)

The following conditions exist:

- Failure to scram
- Reactor power is 20%
- High differential temperature condition in the Auxiliary Building due to a fire.
- Main Steam Isolation valves have closed
- HPCS is required to maintain RPV level
- Rods are being inserted using CRD

WHICH ONE (1) of the following systems should be isolated if it is discharging into the Auxiliary building?

a. High Pressure Core Spray

b. Reactor Water Cleanup

c. Control Rod Drive

d. Fire Suppression

QUESTION: 068 (1.00)

EOP-3, Secondary Containment and Radioactivity Release Control, must be entered if the Secondary Containment differential pressure is above the maximum normal operating differential pressure.

WHICH ONE (1) of the following is the reason for this entry condition?

a. A significant steam leak into the secondary containment is indicated.

b. A significant water leak from primary system may be discharging radioactivity directly to the secondary containment.

c. A potential for the loss of secondary containment is indicated that could result in uncontrolled radioactive releases.

d. An increase in the unmonitored ground level radioactive releases due to leakage through secondary containment is indicated.

QUESTION: 069 (1.00)

A Loss of Offsite Power has occurred. Div I Diesel generator is currently loaded to 2500 KW. WHICH ONE (1) of the following is the MAXIMUM additional load that can be imposed on the generator?

a. 360 KW

b. 580 KW

c. 630 KW

d. 730 KW

QUESTION: 070 (1.00)

WHICH ONE (1) of the following would be identified as THERMAL HYDRAULIC INSTABILITY per AOP-0024?

a. APRM swings of 7%, occurring each 2-3 seconds.

b. LPRM peak-to-peak variations of 5 watts each 2-3 seconds.

c. APRM swings of 12%, occurring each 2-3 seconds.

d. LPRM peak-to-peak variations of 10 watts each 10 seconds.

QUESTION: 071 (1.00)

During refueling the leakage rate of the Refueling Cavity has exceeded the capacity of the Drywell and Containment Equipment and Floor Drain sumps. A fuel bundle is NOT in a safe storage location. WHICH ONE (1) of the following systems may be used for makeup to the Refueling Cavity?

a. Turbine Plant Closed Cooling Water

b. Condensate

c. Reactor Water Cleanup

d. RCIC

QUESTION: 072 (1.00)

The Plant is operating at 10% power. WHICH ONE (1) of the following should be immediately verified following a Turbine/Generator trip?

a. Reactor Scram.

b. Bypass valves open.

c. Generator Output Breakers open.

d. Recirculation Pumps down shift to LFMGs.

QUESTION: 073 (1.00)

You have been instructed to control drywell temperature and pressure operating all drywell cooling. While doing this drywell cooling automatically isolates. WHICH ONE (1) of the following caused the isolation?

a. Drywell temperature 265 deg F

b. RPV water level -28"

c. Drywell pressure 1.82 psid

d. Loss of 120 VAC power

QUESTION: 074 (1.00)

The following conditions exist:

- The Reactor has scrammed and one control rod is stuck out.
- IRMs are on scale and steadily decreasing.
- Reactor vessel pressure is 1100 psig.
- Drywell leakage is measured at 35 gpm.
- Main Plant Exhaust Mid-range monitor is reading 5.93 E-2 uCi/cc.

WHICH ONE (1) of the following is the minimum acceptable Emergency Action Level for this event?

a. Unusual Event

b. Alert

c. Site Area Emergency

d. General Emergency

QUESTION: 075 (1.00)

A major steam leak has raised drywell and containment temperatures. Current plant conditions are:

- Drywell Temp. 275 Degrees F and rising
- RPV Pressure: 200 psig
- Containment Temp: 240 Degrees F and rising
- Narrow Range Level: 11 inches
- Wide Range Level: -112 inches
- Fuel Zone Level: -295 inches
- Upset Range Level: 15 inches

Based on the current plant conditions, WHICH ONE (1) of the following RPV level instruments can be considered valid?

a. Narrow Range

b. Wide Range

c. Fuel Zone

d. Upset Range

QUESTION: 076 (1.00)

An offsite radioactive release is in progress. The COF has entered EOP-3, "Radioactive Release Control". The EOP requires that Turbine Building ventilation be restored if it is shutdown. WHICH ONE (1) of the following describes the reason for restoring Turbine Building ventilation?

a. Restores proper differential pressure resulting in leak rate reduction.

b. Maintains proper environmental conditions for operation of equipment required to adequately cool the core.

c. Minimizes contamination due to noble gases.

d. Preserves Turbine Building accessibility and allows for monitoring release.

QUESTION: 077 (1.00)

The containment is being pressurized due to a steam leak. The COF has entered EOP-2, "Primary Containment Control". As the containment pressure is approaching 5 psig, the COF directs an Emergency Depressurization. WHICH ONE (1) of the following correctly describes the basis for depressurizing at the point?

a. Containment failure is imminent.

b. The containment could fail if a LOCA were to occur.

c. Auxiliary Building HVAC duct work could fail resulting in an unmonitored release.

d. Further pressurization of containment could uncover the SRV discharge quenchers.

QUESTION: 078 (1.00)

The plant has experienced a shutdown due to MSIV closure. Current plant conditions are:

- All rods are fully inserted
- Reactor pressure is 700 psig
- Suppression pool temperature is 134 Degrees F.

WHICH ONE (1) of the following corresponds to the Suppression Pool level that is the transition point to the unsafe region of the Heat Capacity Level Limit curve?

a. 19 feet

b. 17 feet, 6 inches

c. 16 feet

d. 15 feet, 6 inches

QUESTION: 079 (1.00)

The plant was operating at 100% power when a full scram signal was generated due to improper maintenance. The reactor failed to scram. The COF transitioned from EOP-1 to EOP-1A as required. The ATC operator attempts ARI and is unsuccessful. WHICH ONE (1) of the following describes why it is NOT correct to immediately trip the recirc pumps to effect a rapid power reduction?

a. Will result in entering the region of thermal/hydraulic instability.

b. An excessive feedwater temperature reduction rate will cause power to increase rapidly.

c. The large shrink could result in isolation signals being generated complicating the event.

d. The Main Turbine could trip from RPV level swell.

QUESTION: 080 (1.00)

Suppression pool level is offscale high. WHICH ONE (1) of the following describes the effect on indicated containment and drywell pressure?

a. containment pressure less than actual, drywell pressure greater than actual.

b. containment pressure greater than actual, drywell pressure is still accurate.

c. containment pressure greater than actual, drywell pressure less than actual.

d. containment pressure less than actual, drywell pressure is still accurate.

QUESTION: 081 (1.00)

WHICH ONE (1) of the following is the BASIS for maintaining the fuel storage pool 22 feet 8 inches above the top of the reactor pressure vessel flange during refueling?

a. To provide adequate net positive suction head to the Fuel Pool Cooling Cleanup Pumps.

b. To maintain a reservoir of water for suppression pool makeup.

c. To provide spent fuel decay heat removal for 7 days without makeup.

d. To remove the iodine gap activity released from a fuel rupture.

QUESTION: 082 (1.00)

WHICH ONE (1) of the following states the overall system response of the SRVs for the RPV pressures given?

a. At 1103 psig one valve will open, it recloses at 926 psig.

b. At 1113 psig one valve will open, it recloses at 936 psig.

c. At 1103 psig two valves will open , one recloses at 936 psig, the other at 926 psig.

d. At 1113 psig Eight valves will open, three reclose at 946 psig, three at 936 psig, and the last two at 926 psig.

QUESTION: 083 (1.00)

A monthly surveillance test procedure (STP) was performed at noon on the following dates:

October 3, 1993
November 2, 1993
December 7, 1993
January 7,1994

WHICH ONE (1) of the following states requirements for the next performance of this test?

a. Perform prior to February 7; or no later than February 11 with approval from the Assistant Plant Manager or Plant Manager.

b. Perform prior to February 7; or no later than February 15 with approval from the Assistant Plant Manager or Plant Manager.

c. Perform prior to February 11; or no later than February 15 with approval from the Assistant Plant Manager or Plant Manager.

d. Perform prior to February 15; no time extension approval is required.

QUESTION: 084 (1.00)

You have been directed to isolate a pump for maintenance. System temperature and pressure are 190 degrees F and 255 psig, respectively. The two valves immediately downstream of the pump are air operated and fail CLOSED. WHICH ONE (1) of the following states the requirements for downstream isolation of the pump?

a. One valve must be CLOSED and gagged.

b. Both valves must be CLOSED and gagged.

c. One valve must be CLOSED and it's air supply isolated.

d. Both valves must be CLOSED and their air supplies isolated

QUESTION: 085 (1.00)

WHICH ONE (1) of the following events must be IMMEDIATELY reported to the Nuclear Regulatory Commission?

a. A shipment of special nuclear material was received with radiation at the external (contact)surface reading 250 mRem/hr.

b. RCIC actuates due to failure of the logic and is manually tripped prior to injection into the vessel.

c. The inadvertent withdrawal of control rods during refueling reduces Shutdown Margin to 3.8 delta k/k.

d. An individual's whole body radiation exposure exceeds 2 Rem for the current quarter.

QUESTION: 086 (1.00)

The Reactor is being refueled. WHICH ONE (1) of the following describes the MINIMUM requirements per Technical Specifications for on-coming licensed operators at shift change?

a. 1 SS, 1 RO; a licensed operator must remain in the Control Room at all times.

b. 1 SS, 1 additional SRO, 1 RO; a licensed operator must remain in the Control Room at all times.

c. 1 SS, 1 RO; a licensed SRO must remain in the Control Room at all times.

d. 1 SS, 1 additional SRO, 1 RO; a licensed SRO must remain in the Control Room at all times.

QUESTION: 087 (1.00)

Operators are preparing to enter an RHR cubicle to isolate equipment for unplanned maintenance. The dose rate in the general area of work is 220 mRem/hr. Work will take approximately 30 minutes. WHICH ONE (1) of the following identifies the requirements for entry?

a.	RWP required	Standing RWP
	Hand held dose rate meter	REQUIRED
	Device set to alarm at a preset dose	NOT required
	Allowable stay times calculated	NOT required
b.	RWP required	Standing RWP
	Hand held dose rate meter	NOT required
	Device set to alarm at a preset dose	REQUIRED
	Allowable stay times calculated	NOT required
c.	RWP required	Specific RWP
	Hand held dose rate meter	NOT required
	Device set to alarm at a preset dose	REQUIRED
	Allowable stay times calculated	NOT required
d.	RWP required	Specific RWP
	Hand held dose rate meter	NOT required
	Device set to alarm at a preset dose	REQUIRED
	Allowable stay times calculated	REQUIRED

QUESTION: 088 (1.00)

Prior to clearing the drywell for normal access and work, plant conditions necessitate entry by operations personnel. WHICH ONE (1) of the following FAILS to satisfy the requirements allowing drywell entry?

a. Hydrogen concentration is 2.1%.

b. Oxygen concentration is 19.9%.

c. Ambient temperature is 111 degrees F.

d. One operator is standing by to provide emergency assistance.

QUESTION: 089 (1.00)

WHICH ONE (1) of the following individuals grants FINAL concurrence to disable an annunciator circuit in the Main Control Room?

a. Shift Supervisor

b. Operations Supervisor

c. Assistant Plant Manager - Operations

d. Plant Manager

QUESTION: 090 (1.00)

During a plant outage, welding will be done on piping in the Reactor Building. WHICH ONE (1) of the following states the MAXIMUM period of time for which the Hot Work Permit may be approved?

a. 8 hours

b. 24 hours

c. 7 days

d. the duration of the job

QUESTION: 091 (1.00)

Technical Specification 3.0.3 may be intentionally entered to perform surveillance testing of equipment to prevent entering an LCO action statement. WHO provides FINAL APPROVAL for intentional entry into Technical Specification 3.0.3?

a. Shift Supervisor

b. Operations Supervisor

c. Plant Manager

d. Nuclear Regulatory Commission (Resident Inspector)

QUESTION: 092 (1.00)

An Alert has been declared. WHICH ONE (1) of the following requires that you declare that a release is in progress to offsite agencies? (Conditions given include release rates from the Fuel Building Ventilation Exhaust (radiation monitor channel 4005), the Radwaste Building Ventilation Exhaust (radiation monitor channel 4006), and the Main Plant Exhaust Stack (radiation monitor channel 4125))?

	4005	4006	4125
a.	125%	150%	90%
b.	150%	90%	90%
c.	80%	90%	250%
d.	200%	50%	90%

QUESTION: 093 (1.00)

A Site Area Emergency has been declared and the full GSU emergency response organization has been activated. All emergency response positions are manned and emergency facilities are activated. WHICH ONE (1) of the following duties of the Site Emergency Director is now transferred?

a. Issuing offsite Protective Action Recommendations.

b. Authorizing exposure in excess of 10 CFR 20 limits.

c. Authorizing administration of Potassium Iodine tablets.

d. Ordering evacuation of radiologically hazardous plant areas.

QUESTION: 094 (1.00)

10 CFR 50.54 states that reasonable action that departs from a license condition or technical specification may be taken in an emergency to protect the health and safety of the public. WHICH ONE (1) of the following states the MINIMUM approval required?

a. any licensed operator

b. any licensed senior reactor operator

c. Site Emergency Director

d. Recovery Manager

QUESTION: 095 (1.00)

A Site Area Emergency has been declared. Evacuation of the Technical Support Center is required. WHICH ONE (1) of the following states where the TSC personnel will assemble?

a. any safe location on site

b. Control Room

c. Emergency Operations Facility

d. alternate Emergency Operations Facility

QUESTION: 096 (1.00)

A search and rescue team has been sent out to find personnel not accounted for during a site evacuation. WHICH ONE (1) of the following would require the team to report back to the OSC coordinator and request further instructions?

a. Airborne contamination is detected.

b. Smearable contamination areas must be entered.

c. Radiation levels greater than 10 R/hr are encountered.

d. Personnel exposure reaches River Bend administrative limits.

QUESTION: 097 (1.00)

The door to a Locked High Radiation area is damaged while moving maintenance equipment through and cannot be fully closed. WHICH ONE (1) of the following actions is required?

a. Notify the Plant Manager.

b. Generate a Condition Report.

c. Document in the Key Control Log.

d. Issue a clearance and hang a Danger tag.

QUESTION: 098 (1.00)

WHICH ONE (1) of the following is the MINIMUM level of authority to make additions or deletions of procedures located in the field?

a. Operations Procedure Coordinator

b. Control Operations Foreman

c. Shift Supervisor

d. Operations Supervisor

QUESTION: 099 (1.00)

During the performance of a Surveillance Test Procedure (STP), an indicating light is inoperable due to maintenance on its power supply. Verification of the indicator's status is not required to satisfy the STP acceptance criteria. WHICH ONE (1) of the following is necessary to continue the STP?

a. Complete an Exception Report and attach it to the STP.

b. Document the discrepancy in the Comments section of the STP.

c. Obtain approval from the Shift Supervisor.

d. Generate a Preliminary Change Notice.

QUESTION: 100 (1.00)

An ATWS has occurred, COLD shutdown boron weight has been injected. Plant conditions are as follows:

- Drywell pressure is -0.3 psid
- RPV level is 102inches
- RPV pressure is 280 psig
- Suppression pool level is 19.8 feet
- Suppression pool temperature is 130 F

WHICH ONE (1) of the following parameters requires action per Technical Specifications.

a. Suppression pool Temperature

b. Suppression pool Level

c. RPV level

d. Drywell pressure

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

ANSWER: 001 (1.00)

c.

REFERENCE:

1. RBNS: Tech. Spec. 3.0.4 and 3.5.1

K/A: 209001G005 [3.3/4.2]

209001G005 ..(KA's)

ANSWER: 002 (1.00)

b.

REFERENCE:

1. RBNS: LOTM-9-4 page 14 OF 22
2. KA NUMBER: 215004K404 (2.8/2.9)

215004K404 ..(KA's)

ANSWER: 003 (1.00)

b.

REFERENCE:

1. RBNS: LOTM-5-5, p. 15 of 29
2. RBNS: LOTM-57-5, tables.
3. RBNS: AOP-0014, Rev 6, p. 7 of 53

K/A: 201001K205 [4.5*/4.5*]

201001K205 ..(KA's)

ANSWER: 004 (1.00)

d.

REFERENCE:

1. RBNS: SOP-0002, Rev 8, p 3 of 402, Precaution 2.7

K/A: 201001A206 [2.9/2.9]

201001A206 ..(KA's)

ANSWER: 005 (1.00)

a.

REFERENCE:

1. RBNS: LOTM 6-4, p. 19 of 53

K/A: 201005A302 [3.5/3.5]

201005A302 ..(KA's)

ANSWER: 006 (1.00)

d.

REFERENCE:

1. SOP-0003 Rev. 9A step 2.12

K/A: 202002G010 [3.3/3.3]

202002G010 ..(KA's)

ANSWER: 007 (1.00)

c.

REFERENCE:

1. SOP-0031, Rev 8, para. 2.16 (Precautions & Limitations)

K/A: 219000G010 [3.4/3.5]

219000G010 ..(KA's)

ANSWER: 008 (1.00)

c.

REFERENCE:

1. RBNS: SOP-0030, Rev 8, page 2 of 34, 2.5
2. RBNS: LOTM 3-4, Table 8, p. 26 of 31

KA: 295008K207 [2.9/3.0]

295008K207 ..(KA's)

ANSWER: 009 (1.00)

d.

REFERENCE:

1. RBNS: LOTM-16-4, p. 4 of 14

K/A: 211000A302 [3.9/3.9]

211000A302 ..(KA's)

ANSWER: 010 (1.00)

d.

REFERENCE:

1. RBNS: LOTM-15-5, p. 10-14

K/A: 212000K412 [3.9/4.1]

212000K412 ..(KA's)

ANSWER: 011 (1.00)

c.

REFERENCE:

1. RBNS: LOTM-15-5, p. 13 of 17

K/A: 241000A206 [3.1/3.2]

241000A206 ..(KA's)

ANSWER: 012 (1.00)

a.

REFERENCE:

1. RBNS: T.S. Table 3.3.1-1

K/A: 212000G005 [3.8/4.5]

212000G005 ..(KA's)

ANSWER: 013 (1.00)

c.

REFERENCE:

1. RBNS: LOTM-10-4, Table 4

K/A: 215003K401 [3.7/3.7]

215003K401 ..(KA's)

ANSWER: 014 (1.00)

b.

REFERENCE:

1. RBNS: LOTM 12-4, p. 6 of 20, and Table 4, p. 17 of 20,
2. RBNS: T.S. Table 3.3.1-1

K/A: 215005A203 [3.6/3.8]

215005A203 ..(KA's)

ANSWER: 015 (1.00)

a.

REFERENCE:

1. RBNS: LOTM-3-4, p. 5, 6, and 7 of 31

K/A: 216000K304 [3.8/4.0]

216000K304 ..(KA's)

ANSWER: 016 (1.00)

a.

REFERENCE:

1. RBNS: LOTM 20-4, Table 1,

K/A: 217000K601 [3.4/3.5]

217000K601 ..(KA's)

ANSWER: 017 (1.00)

c.

REFERENCE:

1. RBNS: SOP-0035, Rev 8 p. 2 of 43, 2.4

K/A: 217000G010 [3.4/3.5]

217000G010 ..(KA's)

ANSWER: 018 (1.00)

b.

REFERENCE:

1. RBNS: LOTM-21-4, Table 1, p. 8 of 12

K/A: 218000K501 [3.8/3.8]

218000K501 ..(KA's)

ANSWER: 019 (1.00)

d.

REFERENCE:

1. RBNS: AOP-0003, Rev 6, Encl. 1, p. 2 of 4
2. RBNS: AOP-0003, Rev 6, Encl. 2, p. 3 of 7
3. RBNS: AOP-0010, Rev 7, p. 2 of 10

K/A: 223002A302 [3.5/3.5]

223002A302 ..(KA's)

ANSWER: 020 (1.00)

a.

REFERENCE:

1. RBNS: LOTM-63-4, Table 2, p. 17 of 29

K/A: 223001K611 [3.0/3.2]

223001K611 ..(KA's)

ANSWER: 021 (1.00)

b.

REFERENCE:

1. RBNS: LOTM-24-4, p. 4,5,6 of 21, Table 2, and Fig. 20

K/A: 239002A407 [3.6/3.6]

239002A407 ..(KA's)

ANSWER: 022 (1.00)

a.

REFERENCE:

1. RBNS: SOP-0053-8, p. 4 of 83, 2.21
2. RBNS: LOTM-58-4, p. 25 of 40

K/A: 264000K402 [4.0/4.2]

264000K402 ..(KA's)

ANSWER: 023 (1.00)

d.

REFERENCE:

1. RBNS: LOTM 64-4, p. 8 of 18, Table 4

K/A: 261000K401 [3.7/3.8]

261000K401 ..(KA's)

ANSWER: 024 (1.00)

b.

REFERENCE:

1. RBNS: LOTM-34-5 p. 11 of 13,
2. RBNS: LOTM-3-4, p. 26 of 31, Table 8

K/A: 259002K302 [3.7/3.7]

259002K302 ..(KA's)

ANSWER: 025 (1.00)

b.

REFERENCE:

1. RBNS: LOTM-4-4, p. 15 of 19

K/A: 201003K402 [3.8/3.9]

201003K402 ..(KA's)

ANSWER: 026 (1.00)

a.

REFERENCE:

1. RBNS: LOTM-7-4, p. 9, 10 of 32

K/A: 202001K402 [3.1/3.2]

202001K402 ..(KA's)

ANSWER: 027 (1.00)

c.

REFERENCE:

1. RBNS: SOP-0090, Rev 10, p. 3 of 83, 2.4

K/A: 204000A205 [2.7/2.8]

204000A205 ..(KA's)

ANSWER: 028 (1.00)

b.

REFERENCE:

1. RBNS: SOP-0090, Rev 10, p. 5 of 83, 2.27

K/A: 204000G010 [3.2/3.2]

204000G010 ..(KA's)

ANSWER: 029 (1.00)

a.

REFERENCE:

1. RBNS: SOP-0031, p. 5 of 101, 2.19.2

K/A: 205000G010 [3.2/3.3]

205000G010 ..(KA's)

ANSWER: 030 (1.00)

a.

REFERENCE:

RBNS: SOP-0031, Rev 8, p. 3, 4 of 101, 2.5, 2.13

K/A: 205000A102 [3.3/3.2]

205000A102 ..(KA's)

ANSWER: 031 (1.00)

d.

REFERENCE:

1 RBNS: LOTM-24-4, p. 9 of 21

K/A: 239001A208 [3.6/3.6]

239001A208 ..(KA's)

ANSWER: 032 (1.00)

a.

REFERENCE:

1. RBNS: LOTM-27-5, p. 50 of 63
2. RBNS: AOP-0002 2.1.12 Rev 7
K/A: 245000K606 [3.0/3.2]

245000K606 ..(KA's)

ANSWER: 033 (1.00)

b.

REFERENCE:

1. RBNS: LOTM-16-4, p. 8 of 14

K/A: 211000A308 [4.2/4.2]

211000A308 ..(KA's)

ANSWER: 034 (1.00)

d.

REFERENCE:

1. RBNS: LOTM-66-4, p. 4 of 19

K/A: 272000K304 [3.7/3.8]

272000K304 ..(KA's)

ANSWER: 035 (1.00)

c.

REFERENCE:

RBNS: LOTM-9-4, Table 1, Table 3, p. 18, 20 of 22

K/A: 215004K401 [3,7/3.7]

215004K401 ..(KA's)

ANSWER: 036 (1.00)

d.

REFERENCE:

1. RBNS: LOTM -19-5, Fig 6

K/A: 203000A216 [4.4/4.5]

203000A216 ..(KA's)

ANSWER: 037 (1.00)

a.

REFERENCE:

1. RBNS: SOP-0053, Rev 8, p. 8 of 83, 2.7

K/A: 264000G010 [3.2/3.6]

264000G010 ..(KA's)

ANSWER: 038 (1.00)

a.

REFERENCE:

1. RBNS: LOTM-29-4, p. 5 of 13

K/A: 271000K404 [3.3/3.6]

271000K404 ..(KA's)

ANSWER: 039 (1.00)

b.

REFERENCE:

1. RBNS: LOTM-31-4, Table 2, p. 19 of 26
2. RBNS: LOTM-33-5, Table 8, p. 27 of 30

K/A: 256000K201 [2.7*/2.8]

256000K201 ..(KA's)

ANSWER: 040 (1.00)

a.

REFERENCE:

1. RBNS: AOP-0039, Rev 6, p. 2 of 8
K/A: 271000A204 [3.7/4.1]

271000A204 ..(KA's)

ANSWER: 041 (1.00)

b.

REFERENCE:

1. RBNS: SOP-0091, Rev 7B, p 5 of 90, 2.17
K/A: 233000K102 [2.9/3.0]

233000K102 ..(KA's)

ANSWER: 042 (1.00)

d.

REFERENCE:

1. RBNS: AOP-0004, Rev-9, p. 2 of 29
K/A: 295003G010 [3.9*/4.1*]

295003G010 ..(KA's)

ANSWER: 043 (1.00)

b.

REFERENCE:

1. RBNS: AOP-0008, Rev 6, p. 2 of 15
   Note: HVAC fails CLOSED
   K/A: 295019K207 [3.2/3.2]

295019K207 ..(KA's)

ANSWER: 044 (1.00)

a.

REFERENCE:

1. RBNS: LOTM-15-5, p. 13 of 17

   K/A: 295006K202 [3.8/3.8]

295006K202 ..(KA's)

ANSWER: 045 (1.00)

b.

REFERENCE:

1. RBNS: LOTM-15-5, p. 14 of 17

   K/A: 295006K306 [3.2/3.3]

295006K306 ..(KA's)

ANSWER: 046 (1.00)

a.

REFERENCE:

1. RBNS: EPSTG-0002, Rev 2, p. A-2, & B-379
   K/A: 295026K304 [3.7/4.1*]

   295026K304 ..(KA's)

ANSWER: 047 (1.00)

d.

REFERENCE:

1. RBNS: AOP-0012, Rev 6, p. 3 of 5
   K/A: 295018G010 [3.4*/3.3*]

   295018G010 ..(KA's)

ANSWER: 048 (1.00)

d.

REFERENCE:

1. RBNS: T.S. Bases, 3/4.4.1, Amendment 31
   K/A: 295001G004 [2.8*/3.7]

   295001G004 ..(KA's)

ANSWER: 049 (1.00)

a.

REFERENCE:

1. RBNS: AOP-0005, Rev 7, p. 2 of 6

K/A: 295002K202 [3.1/3.2]

295002K202 ..(KA's)

ANSWER: 050 (1.00)

b.

REFERENCE:

1. RBNS: AOP-0031 Rev 8, p. 4 of 87

K/A: 295016A106 [4.0/4.1]

295016A106 ..(KA's)

ANSWER: 051 (1.00)

a.

REFERENCE:

1. RBNS: AOP-0014, Rev 6, Encl. 1, p. 5 of 13
2. RBNS: LOTM-57-5, p. 15 of 27

K/A: 295004K203 [3.3/3.3]

295004K203 ..(KA's)

ANSWER: 052 (1.00)

a.

REFERENCE:

1. RBNS: ARP-601-22, Rev 4, p. 2 of 23

K/A: 295022G010 [3.7*/3.5*]

295022G010 ..(KA's)

ANSWER: 053 (1.00)

b.

REFERENCE:

1. RBNS: T.S. B3/4.6.1.8

K/A: 295011G004 [3.1/4.1*]

295011G004 ..(KA's)

ANSWER: 054 (1.00)

d.

REFERENCE:

1. RBNS: T.S. 3.6.1.2
2. RBNS: Table 1.2, Operational Conditions

K/A: 295021A201 [3.5/3.6]

295021A201 ..(KA's)

ANSWER: 055 (1.00)

c.

REFERENCE:

1. RBNS: LOTM-65-4, P. 7 OF 69

K/A: 295034A101 [3.8/3.8]

295034A101 ..(KA's)

ANSWER: 056 (1.00)

a.

REFERENCE:

1. RBNS: EPSTG*0002, Pg. B-24

K/A: 295031K101 [4.6*/4.7*]

295031K101 ..(KA's)

ANSWER: 057 (1.00)

b.

REFERENCE:

1. EPSTG*0002, Pg. B-79

K/A: 295025K201 [4.1/4.1]

295025K201 ..(KA's)

ANSWER: 058 (1.00)

b.

REFERENCE:

1. EPSTG*0002, Pg. B-376

K/A: 295015A101 [3.8/3.9]

295015A101 ..(KA's)

ANSWER: 059 (1.00)

b.

REFERENCE:

1. RBNS: EPSTG*0002, p. B-380

K/A: 295014A203 [4.0/4.3]

295014A203 ..(KA's)

ANSWER: 060 (1.00)

d.

REFERENCE:

1. AOP-0031, Sec. 4.0, Pg. 5

K/A: 295016G010 [3.4/3.6]

295016G010 ..(KA's)

ANSWER: 061 (1.00)

d.

REFERENCE:

1. TS 2.1.4, Pg. 2-2

K/A: 295009G003 [3.9/4.2]

295009G003 ..(KA's)

ANSWER: 062 (1.00)

c.

REFERENCE:

1. SOP-0028, ENCLOSURE 1, Pg. 8

K/A: 295037A104 [4.5/4.5]

295037A104 ..(KA's)

ANSWER: 063 (1.00)

a.

REFERENCE:

1. EIP-2-005, Sec. 6.1.6, Pg. 8
2. THIS QUESTION IS NOT VALID FOR FUTURE USE!
K/A: 295038K102 [4.2/4.4]

295038K102 ..(KA's)

ANSWER: 064 (1.00)

d.

REFERENCE:

1. RBNS: EPSTG*0002, p. B-216

K/A: 295013G007 [3.3/3.5]

295013G007 ..(KA's)

ANSWER: 065 (1.00)

b.

REFERENCE:

1. RBNS: EOP flow charts

K/A: 295029G011 [4.2*/4.5*]

295029G011 ..(KA's)

ANSWER: 066 (1.00)

b.

REFERENCE:

1. RBNS: AOP-0007, Rev 8, p. 2B of 6

K/A: 295014G010 [4.0*/3.9*]

295014G010 ..(KA's)

ANSWER: 067 (1.00)

b.

REFERENCE:

1. RBNS: EOP-3 Lesson Plan E.O. 4
2. RBNS: EOP-3 Flow chart, Step SC-12
   K/A: 295032A105 [3.7/3.9]

295032A105 ..(KA's)

ANSWER: 068 (1.00)

c.

REFERENCE:

1. RBNS: EPSTG*0002-1, Appendix B, p. 252 OF 269

K/A: 295035K101 [3.9/4.2]

295035K101 ..(KA's)

ANSWER: 069 (1.00)

c.

REFERENCE:

1. RBNS: AOP-0004, Rev 9, Caution, p. 3 of 39

K/A: 295003A102 [4.2*/4.3*]

295003A102 ..(KA's)

ANSWER: 070 (1.00)

c.

REFERENCE:

1. RBNS: AOP-0024, Rev 6, p. 3 of 6
2. RBNS: Commitment no. 07704, AOP-0024 Ref 6.9
   K/A: 295001G011 [3.9/4.2]

295001G011 ..(KA's)

ANSWER: 071 (1.00)

b.

REFERENCE:

1. RBNS: AOP-0027, p. 5.

   KA: 295023A204 [3.4/4.1]

295023A204 ..(KA's)

ANSWER: 072 (1.00)

c.

REFERENCE:

1. RBNS: AOP-002, p. 4

   KA: 295005A208 [3.2/3.3]

295005A208 ..(.A's)

ANSWER: 073 (1.00)

c.

REFERENCE:

1. RBNS: LOTM 63-4, p. 11
   KA: 295010K205 [3.7/3.8]

295010K205 ..(KA's)

ANSWER: 074 (1.00)

b.

REFERENCE:

1. The Plant: EIP-2-001, p. 34
   KA: 295017K303 [3.3/4.5]

295017K303 ..(KA's)

ANSWER: 075 (1.00)

b.

REFERENCE:

1. EOP-1, Caution #1
   K/A: 295027K102 [3.0/3.2]

295027K102 ..(KA's)

ANSWER: 076 (1.00)

d.

REFERENCE:

1. EOP-3, Step RR-1, B-296

K/A: 295033G012 [3.8*/4.4*]

295033G012 ..(KA's)

ANSWER: 077 (1.00)

b.

REFERENCE:

1. EOP-2, Step CP-4, B-203

K/A: 295024K304 [3.7/4.1]

295024K304 ..(KA's)

ANSWER: 078 (1.00)

c.

REFERENCE:

1. EOP-1, Figs. 2 & 4,

K/A: 295030G012 [3.7/4.4]

295030G012 ..(KA's)

ANSWER: 079 (1.00)

d.

REFERENCE:

1. EOP-1A, B-369

K/A: 295037A102 [3.8/4.0]

295037A102 ..(KA's)

ANSWER: 080 (1.00)

b.

REFERENCE:

1. RBNS: EPSTG*0002, p. B-40,
2. RBNS: EOP-1, Caution 8
Note: this is not dj with 29502K201 as this deals with LLS
K/A: 295029G012 [3.6/4.4*]

295029G012 ..(KA's)

ANSWER: 081 (1.00)

d.

REFERENCE:

1. RBNS: Technical Specification Bases 3/4.9.8, p. B3/4 9-2

K/A: 295023G004 [2.7*/3.8]

295023G004 ..(KA's)

ANSWER: 082 (1.00)

c.

REFERENCE:

1. RBNS: LOTM-24-4, p. 5, and Table 2, p. 17 of 21

K/A: 295007A104 [3.9/4.1*]

295007A104 ..(KA's)

ANSWER: 083 (1.00)

B 9/8/94

REFERENCE:

1. Technical Specification 4.02
2. ADM-0015, Station Surveillance Test Program, Rev. 14, Sections 3.4 and 3.5

K/A: 294001A110 [3.6/4.2]

294001A110 ..(KA's)

ANSWER: 084 (1.00)

c.

REFERENCE:

1. ADM-0027, Protective Tagging, Rev. 10, Sections 7.2.2.2 and 7.2.3.1

K/A: 294001K102 [3.9/4.5]

294001K102 ..(KA's)

ANSWER: 085 (1.00)

a.

REFERENCE:

1. RBNP-004, Regulatory Reporting Requirements, Rev. 8, Attachment 3
2. VN 11, p. 3 of 10

K/A: 294001A111 [3.3/4.3]

294001A111 ..(KA's)

ANSWER: 086 (1.00)

b.

REFERENCE:

1. Technical Specification 6.2.2

K/A: 294001A103 [2.7/3.7]

294001A103 ..(KA's)

ANSWER: 087 (1.00)

c.

REFERENCE:

1. Technical Specification 6.12
2. RSP-0200, Radiation Work Permits, Rev. 6, Sections 5.2.2 and 6.1.3

K/A: 294001K103 [3.3/3.8]

294001K103 ..(KA's)

ANSWER: 088 (1.00)

d.

REFERENCE:

1. RSP-0212, Drywell Entry, Rev. 5, Sections 3.6, 5.1.7 and 5.1.2.7 Warning and Precautions

K/A: 294001K114 [3.2/3.4]

294001K114 ..(KA's)

ANSWER: 089 (1.00)

c.

REFERENCE:

1. OSP-0015, Problem Annunciator Resolution Program, Rev. 2, Section 5.1

K/A: 294001A109 [3.3/4.2]

294001A109 ..(KA's)

ANSWER: 090 (1.00)

d.

REFERENCE:

1. FPP-0060, Hot Work Permit, Rev. 6A, Section 5.1.1.2

K/A: 294001K116 [3.5/3.8]

294001K116 ..(KA's)

ANSWER: 091 (1.00)

b.

REFERENCE:

1. ADM-0022, Conduct of Operations, Rev. 14, Section 7.4.2

   K/A: 294001A111 [3.3/4.3]

294001A111 ..(KA's)

ANSWER: 092 (1.00)

a. dropped per fac comments - no correct answer 9402/8/94

REFERENCE:

1. EIP-2-006, Notifications, Rev. 16, Section 3.1
2. EIP-2-001, Classification of Emergencies, Rev. 6, page 20 (They will be required to know that 3 times the alarm value OR two alarms constitutes a release.)

   K/A: 294001A116 [2.9/4.7]

294001A116 ..(KA's)

ANSWER: 093 (1.00)

a.

REFERENCE:

1. EIP-2-007, Protective Action Recommendation Guidelines, Rev. 12, Section 4.1

   K/A: 294001A116 [2.9/4.7]

294001A116 ..(KA's)

ANSWER: 094 (1.00)

b.

REFERENCE:

1. 10 CFR 50.54 (x) and (y)

   K/A: 294001A111 [3.3/4.3]

294001A111 ..(KA's)

ANSWER: 095 (1.00)

c.

REFERENCE:

1. EIP-2-010, Hazardous Gas Emergencies, Rev 8, Section 6.2.2.1.g

   K/A: 294001A116 [2.9/4.7]

294001A116 ..(KA's)

ANSWER: 096 (1.00)

c.

REFERENCE:

1. EIP-2-008, Search and Rescue, Rev. 7, Section 6.5.6

   K/A: 294001A116 [2.9/4.7]

294001A116 ..(KA's)

ANSWER: 097 (1.00)

b.

REFERENCE:

1. ADM-0020, Plant Key Control, Rev. 6, Section 5.4

K/A: 294001K105 [3.2/3.7]

294001K105 ..(KA's)

ANSWER: 098 (1.00)

d.

REFERENCE:

1. OSP-0005, Rev 6A, Page 3

K/A: 294001A103 [2.7/3.7]

294001A103 ..(KA's)

ANSWER: 099 (1.00)

b.

REFERENCE:

1. ADM-0015, Station Surveillance Test Program, Rev 14, Section 6.4.6

K/A: 294001A102 [4.2/4.2]

294001A102 ..(KA's)

ANSWER: 100 (1.00)

a.

REFERENCE:

1. RBNS: T.S. 3.6.3.1,

K/A: 295026G003 [3.2/4.3]

295026G003 ..(KA's)

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

A N S W E R K E Y

MULTIPLE CHOICE

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

A N S W E R K E Y

046	a	069	c
047	d	070	c
048	d	071	b
049	a	072	c
050	b	073	c
051	a	074	b
052	a	075	b
053	b	076	d
054	d	077	b
055	c	078	c
056	a	079	d
057	b	080	b
058	b	081	d
059	b	082	c
060	d	083	CB 3/8/94
061	d	084	c
062	c	085	a
063	a	086	b
064	d	087	c
065	b	088	d
066	b	089	c
067	b	090	d
068	c	091	b

A N S W E R K E Y

~~092 a~~ dropped PB 2/6/14

093 a

094 b

095 c

096 c

097 b

098 d

099 b

100 a

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

ATTACHMENT 4

FACILITY POST-EXAMINATION COMMENTS

RO QUESTION # 17, SRO QUESTION # 16

COMMENT:

The stem of the question does not give enough information to eliminate answer "a" or "d".

If the Suppression pool high level occurs BEFORE air pressure on suppression pool instrumentation is depleted answer "a" is correct.

If the suppression pool high level occurs AFTER air pressure on suppression pool level instrumentation is depleted answer "d" is correct (instrumentation will not see high level in the suppression pool, it is a "bubbler" type level instrument).

Therefore, both "a" and "d" are correct.

RECOMMENDATION:

Specify, in the stem of the question suppression pool instrumentation supply air pressure is available.

SRO QUESTION # 83

COMMENT:

The REQUIREMENT is 31 days (Feb. 7, see ADM-0015, section 3.7).

To exceed the 3.25 tolerance PM or APM approval is required, 3.25 tolerance is to Feb. 11 (see ADM-0015, section 3.5).

Tech. Spec. tolerance is 1.25 (to Feb. 15, see ADM-0015 section 3.4).

Therefore, answer "b" is the correct answer.

RECOMMENDATION:

Change Key to "b"

SRO QUESTION # 92

COMMENT:

The answers are all percent, it is not specified in the stem, or answer, percent of what (eg. 90% of The Range / Alert Value / Normal Value / Alarm Value).

Therefore, the stem of the question does not provide enough information to answer the question.

RECOMMENDATION:

Specify in stem of question "percents given are percent of Alarm Value".

QUESTION: 017 (1.00)

The following plant conditions exist:

- A total loss of AC power occurs with ENS*SWG1A and ENS*SWG1B buses NOT energized.
- SRVs are being used to control reactor pressure at 900 psig.
- RCIC is manually initiated and is maintaining reactor water level at approximately +20".

A high suppression pool level occurs. WHICH ONE (1) of the following describes the effect of the loss of AC power will have on the transfer of RCIC suction?

a. No effect since suction valves are DC powered and suction transfer will occur normally.

b. Suppression pool suction valve will not open, causing RCIC to trip on low suction pressure when the DC powered CST suction closes.

c. CST suction valve will not close when the suppression pool suction opens since it is AC powered, causing the CST to drain into the suppression pool until manual action is taken.

d. No transfer will take place. RCIC suction will remain on the CST.

ANSWER: 017 (1.00)

a.

REFERENCE:

1. RBNS: LOTM 20-4, Table 1,

K/A: 217000K601 [3.4/3.5]

217000K601 ..(KA's)

QUESTION: 016 (1.00)

The following plant conditions exist:

- A total loss of AC power occurs with ENS*SWG1A and ENS*SWG1B buses NOT energized.
- SRVs are being used to control reactor pressure at 900 psig.
- RCIC is manually initiated and is maintaining reactor water level at approximately +20".

A high suppression pool level occurs. WHICH ONE (1) of the following describes the effect of the loss of AC power will have on the transfer of RCIC suction?

a. No effect since suction valves are DC powered and suction transfer will occur normally.

b. Suppression pool suction valve will not open, causing RCIC to trip on low suction pressure when the DC powered CST suction closes.

c. CST suction valve will not close when the suppression pool suction opens since it is AC powered, causing the CST to drain into the suppression pool until manual action is taken.

d. No transfer will take place. RCIC suction will remain on the CST.

ANSWER: 016 (1.00)

a.

REFERENCE:

1. RBNS: LOTM 20-4, Table 1,

K/A: 217000K601 [3.4/3.5]

217000K601 ..(KA's)

QUESTION: 083 (1.00)

A monthly surveillance test procedure (STP) was performed at noon on the following dates:

October 3, 1993
November 2, 1993
December 7, 1993
January 7,1994

WHICH ONE (1) of the following states requirements for the next performance of this test?

a. Perform prior to February 7; or no later than February 11 with approval from the Assistant Plant Manager or Plant Manager.

b. Perform prior to February 7; or no later than February 15 with approval from the Assistant Plant Manager or Plant Manager.

c. Perform prior to February 11; or no later than February 15 with approval from the Assistant Plant Manager or Plant Manager.

d. Perform prior to February 15; no time extension approval is required.

ANSWER: 083 (1.00)

c.

REFERENCE:

1. Technical Specification 4.02
2. ADM-0015, Station Surveillance Test Program, Rev. 14, Sections 3.4 and 3.5

K/A: 294001A110 [3.6/4.2]

294001A110 ..(KA's)

QUESTION: 092 (1.00)

An Alert has been declared. WHICH ONE (1) of the following requires that you declare that a release is in progress to offsite agencies? (Conditions given include release rates from the Fuel Building Ventilation Exhaust (radiation monitor channel 4005), the Radwaste Building Ventilation Exhaust (radiation monitor channel 4006), and the Main Plant Exhaust Stack (radiation monitor channel 4125))?

	4005	4006	4125
a.	125%	150%	90%
b.	150%	90%	90%
c.	80%	90%	250%
d.	200%	50%	90%

ANSWER: 092 (1.00)

a.

REFERENCE:

1. EIP-2-006, Notifications, Rev. 16, Section 3.1
2. EIP-2-001, Classification of Emergencies, Rev. 6, page 20 (They will be required to know that 3 times the alarm value OR two alarms constitutes a release.)

K/A: 294001A116 [2.9/4.7]

294001A116 ..(KA's)

E-Mail report to D. Sullivan (DJS)

bcc to DMB (IE01)

bcc w/enclosure (except Master Examination and Answer Key):

E-Mail report to D. Sullivan (DJS)

bcc to DMB (IE01) - DRS

L. J. Callan, RA
RIV File
L. Miller, TTC
MIS System
Resident Inspector's Office
Section Chief (DRP/C)
Section Chief (DRP/TSS)
DRS (J. L. Pellet)

bcc w/complete enclosure:
bcc to DMB (IE42)
Chief Examiner Reading File (C. Bartley)

RIV:C:OB*	ADD:DRS	D:DRP	D:DRS	
JLPellet	JAMitchell	ABBeach	TPGwynn	
3/7/94	3/10/94	3/10/94	3/11/94	

*Previously concurred