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

ENCLOSURE 1

Examination Report No. 50-325/92-300

Facility Licensee: Carolina Power and Light Company

Facility Name: Brunswick Steam Electric Plant

Facility Docket Nos.: 50-325 and 50-324

Facility License Nos.: DPR-71 and DRP-62

Examinations were administered at the Brunswick Steam Electric Generating Plant near Southport, North Carolina.

Chief Examiner: Bobby L. Holbrook — Date: 5/11/92

Approved By: for Charles A. Casto, Chief, Operator Licensing Section 2, Division of Reactor Safety — Date: 5/11/92

SUMMARY

SCOPE: During the weeks of April 13 and April 27, 1992, written and operating examinations were administered to six Reactor Operators (ROs) and ten Senior Reactor Operators (SROs).

RESULTS: Six Reactor Operators and ten Senior Reactor Operators passed the examination. Five of the six crews evaluated passed the examination. Overall 16 of 16 operators that were being formally evaluated by the NRC (100 percent) passed the examinations. Based on the results of the examinations, the Brunswick Steam Electric Plant Requalification Program has been determined to be satisfactory. However, one RO and two SROs, that had previously passed an NRC examination, did not pass. The three failures were not part of the 16 operators that were formally evaluated by the NRC.

Strengths: Strengths in the Brunswick Requalification Program were noted in the performance of the facility evaluators (Paragraph 3.e), and in the simulator performance and fidelity (Paragraph 3.f).

Weaknesses: Program weaknesses were identified in the proposed static examination materials (paragraph 3.c), crew communications and command and control and operator execution of Abnormal Operating Procedures (paragraph 3.d).

REPORT DETAILS

1. Facility Employees Attending Exit

K. Ahern - Manager, Operations
H. Beane - Manager, Quality Control
C. Blackmon, Jr. - Assistant to Plant General Manager
L. Dunlap - Senior Specialist, Licensed Operator Training
W. Geise - Manager, Simulator
R. Godley - Manager, Regulatory Compliance
A. Lucas - Manager, Nuclear Engineering Department
D. Quick - Manager, Nuclear Assessment
R. Richey - Vice President, Brunswick Nuclear Project
J. Simon - Manager Operations - Unit 1
J. Spencer - General Plant Manager
R. Tart - Manager Operations - Unit 2
S. Zimmerman - Site Assistance Team

2. NRC Personnel Attending Exit

J. Bartley - NRC Region II
P. Byron - NRC, Resident Inspector
J. Canady - NRC, LOLB, NRR
*B. Holbrook - NRC, Region II
D. Prevatte - NRC, Senior Resident Inspector

*Chief Examiner

3. Discussion

a. Program Evaluation

Based on the examination results, the Brunswick Requalification Program meets the criterion established in NUREG-1021, ES-601.C.2.b (Revision 6), and has been determined to be satisfactory. The facility is permitted to administer the re-examinations for returning the failed individuals to licensed duties. However, each individual who failed the examination will require an NRC administered examination in order to obtain a license renewal.

b. Reference Material

The examination team reviewed and found the reference material to be adequate to support the examination. The licensee supplied a sampling plan describing the requalification cycle and the selection process used for the topics included in the examinations.

c. Proposed Examination

A review was conducted of the facility's proposed written, walkthrough and dynamic simulator examinations. Some questions proposed for the static examination tested at the appropriate

depth of knowledge. However, the examination team saw very little improvement in the quality of the proposed static written examinations and questions as compared to the materials proposed for the 1991 examinations. The simulator setup, for some examinations, did not accurately reflect the correct and desired plant conditions. The examination team, primarily the facility training staff, was required to make changes to the simulator setup to correct this deficiency. Many questions could be answered without using the simulator as a reference. Extensive effort was required of the examination team, as well as the facility staff, to correct this deficiency. The NRC substituted material for about 20 percent of each section of the examination. This was done in accordance with NUREG-1021. Either the question selection process or the exam bank questions are in need of improvement.

d. Operator Performance

One crew was failed by the NRC and the facility. Three crew members within this crew, one RO and two SROs who had previously passed an NRC examination, did not perform all of their identified critical tasks and were failed by the NRC and the facility. Overall 16 of 16 operators (100 percent), that were being formally evaluated by the NRC, passed the examination. The facility evaluators failed one additional crew, even though they successfully performed all of the identified critical tasks. The crew was failed because their overall performance did not meet the facility's more stringent evaluation criteria. The root cause of two crew failures, one crew failed by both the NRC and the facility and the crew that was failed by the facility only, was attributed to inadequate communications and command and control.

Some operators demonstrated weaknesses in the performance of the immediate and subsequent operator actions of the Abnormal Operating Procedures (AOPs). The mitigation strategy of the crew was not severely altered, but in some cases crew actions and equipment restoration were delayed.

e. Facility Evaluators

All facility evaluators were rated as satisfactory. Their evaluation techniques and knowledge of the plant, plant procedures, and simulator capabilities were excellent. The facility evaluators failed one crew that the NRC did not fail. The crew's overall performance did not meet the facility's more stringent evaluation criteria.

f. Simulator Fidelity

There were no deficiencies noted in the simulator modeling or performance. The simulator modeling for Secondary Containment and Radiation Release parameters was excellent. This provides a unique dynamic setting for training and evaluation of the operators in these areas of the emergency procedures.

4. Exit Meeting

At the conclusion of the site visit, the examiners met with those representatives of the plant staff indicated in paragraph 1 to discuss the results of the examinations. The licensee did not identify as proprietary any material provided to or reviewed by the examiners.

ENCLOSURE 2

REQUALIFICATION PROGRAM EVALUATION REPORT

This was the second examination administered by the NRC since the requalification program was determined to be unsatisfactory in May 1990, and the first requalification examination administered by the NRC since the program was determined to be satisfactory in June 1991. The examinations were administered in accordance with NUREG-1021, Operator Licensing Examiner Standards, Revision 6, dated June 1, 1990. The examiners utilized examiner methodology, alternative B, which allows one NRC examiner to simultaneously evaluate two licensed operators. Based on the examination results, the Brunswick Requalification Program met the criteria established in NUREG-1021, ES-601.C.2.b (Revision 6), and has been determined to be satisfactory. The facility is permitted to administer the re-examinations for returning the failed individuals to licensed duties. However, an NRC administered re-examination will be required for license renewal.

1. Reference Material and Proposed Examination

The examination team reviewed the reference material supplied by the licensee and found it to be adequate to support the examination. The licensee supplied a sampling plan that described the requalification cycle and the process that was used to select examination topics. All materials were well organized which facilitated the examination preparation process.

WRITTEN EXAMS - The examiners reviewed the facility's proposed written examination materials which were derived from the sample plan. The validation times for questions on both the static simulator and open-reference exams reflect accurately the time which a competent operator would need to answer the questions correctly. The examination team substituted new material for about 20 percent of each section of the examination as allowed by NUREG 1021. However, additional questions were revised or replaced because they did not meeting the examiner's standard for open-reference style questions. Twelve of 60 questions were replaced for Section B examinations, Administrative Controls / Procedural Limits. These examinations required less work prior to the examination administration than did the Section A, Plant and Control Systems, examinations. Both sections of the examinations contained some questions that were basic, involving fundamental levels of knowledge / memory which required recall, recognition, or remembering generally well known facts. Additionally, some distractors were not plausible and some questions contained distractors which could be judged correct or incorrect without reading the stem of the question. The Part A examinations contained some questions that were more suited for the Part B and vice-verse; some questions were considered as "direct look up" questions. This is contrary to guidelines established in the examiner's standard.

One change was made to the answer key after the exam administration. The examination key did not reflect the correct answer. This change resulted in a reversal of a Pass/Fail decision.

The Section A examinations, as proposed, did not contain specific RO and SRO knowledge level questions. To address the operations representative concerns, separate examinations for the ROs and SROs were developed. This required minimal effort in that only four questions were replaced and additional sets of examinations were copied. Training management stated they would correct the examination bank to indicate RO and SRO knowledge level questions.

Proposed examination, SSA15, contained four of fifteen questions that dealt with the Service Water system. Two of these questions were replaced to broaden the scope of the examination.

JPMS - The proposed JPMs were adequate. They were well written and formatted. However, two were replaced due to being short, consisting of one or two steps. The facility developed two new JPMs, one of which was faulted and modified additional JPMs to make a total of three faulted JPMs for each crew.

One critical step in JPM 2200046H, requiring the operator to notify the main control room that certain steps were completed, was deleted after examination administration. This change resulted in a reversal of a Pass/Fail decision.

The JPM bank does not contain SRO only JPMs. Training management stated that a new task analysis had just been completed, and they plan to review existing JPM task items for the appropriate level of knowledge. Newly developed JPMs would reflect the required task item knowledge level.

The JPM questions that were proposed did not indicate what was required in order to receive full credit. Prior to the examination, the facility corrected some questions to indicate partial credit. However, the JPM question bank should indicate what is expected for a completely satisfactory answer. This resulted in some grading inconsistencies.

The operators performance of the JPMs was good. Overall, 75 of 80 JPMs were satisfactorily completed.

The facility is advised to expand and diversify its JPM exam bank to preclude operators from learning the Training Department's JPMs vice learning the plant's procedures.

SCENARIOS - The proposed scenarios were reviewed in accordance with ES-604-1. The scenarios met the requirements of the Examiner Standards. However, two scenarios were approximately 40 minutes in length vice 50 minutes. The NRC selected two different scenarios from the examination bank to replace scenarios that did not contain malfunctions or equipment failures after the Emergency Operating Procedures (EOPs), were entered. The examination team recommended malfunctions to be included into the

remaining scenarios that would require prioritization of actions and allocation of resources. The training staff readily incorporated the suggested malfunctions and enhanced some scenarios with other malfunctions they deemed appropriate. The resulting scenarios were excellent evaluation tools. The operators were required to monitor plant parameters, diagnose plant conditions and utilize EOPs for the various sections of the emergency procedures. Operators' ability to execute the Secondary Containment Control and Radiation Release legs of the EOP flow charts were evaluated in great depth.

2. Operator Performance

WRITTEN EXAMINATIONS - All operators passed the written examinations. One operator was raised to a passing score of exactly 80.0 percent after post-exam modification to the answer key.

Scores ranged from 80.0 percent to 96.7 percent with average score of 89.2 percent.

The following questions were missed by 25 percent or more of the operators:

ID	Record	
- LLA0103	1927 - Missed by 3 of 5	-- RHR response
- LSA1508	392 - Missed by 5 of 8	-- NSW system Response
- LSA1309	327 - Missed by 5 of 8	-- Instrument failure response
- LSA1020	362 - Missed by 4 of 8	-- EHC response-failure of UPS
- LLN0138	1767 - Missed by 3 of 5	-- RPS status during PT
- LSA0327	461 - Missed by 4 of 5	-- SBGT response
- LLA0131	603 - Missed by 5 of 8	-- DG response
- LSA0328	462 - Missed by 4 of 8	-- Recirc MG set response

JPMs - There were no JPM failures. Initially one individual failed due to inadequate JPM performance. After reviewing the JPM critical steps, the NRC questioned the validity of one critical step. Step 15 of JPM 2200046H, Install Jumpers to Bypass the Automatic Reactor Scram, required the operator to inform the control room that LEP-02 Section 3, jumpers were installed. The critical step was changed from critical to non-critical which raised the operator's grade to passing. Overall, JPM critical steps were well defined and represented actions that were critical for safe operation of the plant.

During the examination preparation week, the NRC examination team met with the crews that were to be examined, to discuss the examination process. Several of the operators stated they had not had ample time to practice JPMs with a qualified instructor and felt uncomfortable with role playing. During the examination administration the NRC examiners did not identify role playing as a deficiency. Operator correctly performed 75 of 80 JMPs. Three of the five failed JPMs were Initial Dose Projection Manual Calculations. The failures were due to incorrect mathematical calculations. The other two JPMs that were failed were newly developed faulted JPMs.

Performance on the JPMs developed or modified by the NRC were worse than on ones from the facility bank.

Training management indicated that, in the past, operators had refused or shown little interest in additional one on one practice of JPMs.

SIMULATOR EXAMINATIONS - There was one crew failure and three operators within that crew failed, two SROs and one RO. The two SROs and one RO had previously passed an NRC requalification examination. The facility failed one additional crew that the NRC did not fail. Inadequate communications and command and control were identified as the root cause of the two crew failures. The SRO of one crew, while making preparations to emergency depressurize the reactor, directed the RO to align the condensate system for injection. As reactor level decreased toward the top of active fuel (TAF) the RO failed to inject with the condensate system and reactor level was allowed to go below TAF. The SRO apparently assumed the RO would inject with condensate, and the RO was waiting for further instructions before injecting. The Shift Supervisor (SS) observed reactor level decreasing, checked the condensate system line-up and informed the SRO he needed to inject with condensate. The SRO responded that the condensate will inject. The SS resumed making preparations to classify the event. The SS and the SRO did not effectively take charge to ensure reactor water level remained above TAF even though low pressure ECCS systems, Control Rod Drive (CRD), Standby Liquid Control (SLC), and the condensate system were available for injection. As a result three ISCTs were not performed.

Weaknesses were observed in the operators' performance of the immediate and subsequent operator actions of the AOPs. The following are examples:

The SS directed the RO to verify the immediate operator actions of the AOP prior to tripping the Reactor Recirculation pump even though conditions required the pump to be immediately tripped. After the RO verified the immediate actions in the AOP, the SS gave a crew brief and then directed the RO to trip the pump.

One crew failed to enter and execute AOP-5, for High Radiation in the Turbine Building, and isolate the Main Steam Isolation Valves (MSIVs) as required by procedure.

One crew failed to complete all the necessary steps of AOP 36.1 for a loss of a 4 KV bus. This delayed the restoration of power necessary for the crew to recover ECCS equipment and water level indication necessary to verify adequate core cooling.

3. Examination Administration

WRITTEN EXAMINATIONS - One question required answer key changes after the examination was administered. This change resulted in raising one operator's score from Fail to Pass.

JPMs - Each operator performed five JPMs and answered ten knowledge questions. There was one instance of reclassifying a critical step as non-critical. This reclassification changed one operator's grade from Fail to Pass.

One facility evaluator gave the operator incorrect information as a cue. This did not change the scope of the JPM, but required the operator to perform additional steps that were not originally part of the task. The operator's performance was evaluated as satisfactory.

SIMULATOR EXAMINATIONS - There were no discrepancies noted during the performance of the simulator examinations. The facility scheduling and close attention to examination security was very effective.

4. Evaluation of Facility Evaluators

An evaluation of the facility evaluators was conducted. The NRC determined all facility evaluators to be satisfactory. The facility used a one on one approach for the simulator examinations. This allowed for closer observation of operator actions and was conducted as to not add to congestion in the simulator. One evaluator gave an operator incorrect information as a cue. However, this did not change the scope of the JPM. The facility evaluators demonstrated excellent knowledge of the plant, plant procedures, and simulator capabilities.

ENCLOSURE 3

SIMULATOR FIDELITY REPORT

Facility Licensee: Carolina Power and Light Company

Facility Docket Nos.: 50-325 and 50-324

Operating Tests Administered On: April 13 - 17 and April 27 - 30, 1992

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

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

ITEM	DESCRIPTION

No discrepancies were noted.

** "NRC B2 SSA03 RO" ANSWER KEY **

(OPEN REFERENCE EXAM CREATED FROM STATICS OPEN REFERENCE EXAM BANK)

EXAM NAME: NRC B2 SSA03 RO

EXAM DATE: 04/14/92

CLASS: NRC/LOR

COURSE CODE: ROA24B

PREPARED BY: L DUNLAP

MASTER

NUMBER OF QUESTIONS: 15

TOTAL POINTS: 15.00

80% POINTS: 12.00

70% POINTS: 10.50

TIME LIMIT: 1.00 HOURS

ESTIMATED TIME TO COMPLETE THE EXAM: **51.00 MINUTES**

REFERENCES TO BE PROVIDED TO THE STUDENT:

SD-43, REV 12

** "NRC B2 SSA03 RO" ANSWER KEY **

** "NRC B2 SSA03 RO" ANSWER KEY **

QUESTION: 1 POINT VALUE: 1.00 RECORD: 459 ID: LSA0325
LESSON: 10-2A Objectives: 17b

The first RPV level rise as indicated on ERFIS was due to: (select the correct answer)

a. Recirc pump runback.

b. Recirc pump B speed increase.

c. Feed pump contr l failure.

d. Recirc pump trip.

ANSWER: 1

a.

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QUESTION: 2 POINT VALUE: 1.00 RECORD: 460 ID: LSA0326
LESSON: 10-2A Objectives: 30e

The second RPV level rise as indicated on ERFIS was due to: (select the correct answer)

a. Recirc pump runback.

b. Recirc pump B speed increase.

c. Feed pump control failure.

d. Recirc pump trip.

ANSWER: 2

d.

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QUESTION: 3 POINT VALUE: **1.00** RECORD: **461** ID: **LSA0327**
LESSON: **15-2F** Objectives: **9d**

Which of the following describes the current status of the Standby Gas Treatment system? (select the correct answer)

a. Both SBGT trains are operating properly.

b. Only SBGT train A is operating properly.

c. Only SBGT train B is operating properly.

d. Neither SBGT train is operating properly.

ANSWER: 3

b.

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QUESTION: 4 POINT VALUE: **1.00** RECORD: **462** ID: **LSA0328**
LESSON: **10-2A** Objectives: **16g,17**

Concerning the status of M-G set 2B, if no operator action is taken: (select the correct answer)

a. Continued operation of M-G set 2B will result in drive motor damage due to excessive current.

b. Continued operation of M-G set 2B will result in generator damage due to excessive speed.

c. Continued operation of M-G set 2B will result in fluid coupler damage due to excessive oil temperature.

d. Continued operation of M-G set 2B will have no adverse effects on the M-G set.

ANSWER: 4

d.

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QUESTION: 5 POINT VALUE: 1.00 RECORD: 463 ID: LSA0329
LESSON: 07-2K.02 Objectives: 11,14

Given current plant conditions, which of the following actions is correct concerning Reactor Building HVAC: (select the correct answer)

a. Should be restored to operation per OP-37.1.

b. Should be restored to operation per SEP-04.

c. Cannot be restored to operation until Reactor Building Vent radiation is less than 4 mr/hr.

d. Should not be restored to operation until EOP-03-SCCP can be entered.

ANSWER: 5

a.

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QUESTION: 6 POINT VALUE: 1.00 RECORD: 464 ID: LSA0330
LESSON: 15-2E Objectives: 4f,12f

Cocerning the current status of PCIS, group 6: (select the correct answer)

a. Is properly isolated. Containment Atmosphere Monitoring has been restored to operation.

b. Is responding correctly, the isolation is overridden by CAC-CS-5519 in Override.

c. Is not properly isolated. An isolation condition is present without complete isolation.

d. Is responding correctly. No group 6 isolation condition currently exists.

ANSWER: 6

c.

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QUESTION: 7 POINT VALUE: 1.00 RECORD: 290 ID: LSA0320
LESSON: 10-2A Objectives: 02

Given current plant conditions, in order to exit the instability region, which of the following must be performed?

a. Reset the reactor recirculation M/G set lock-outs and start the tripped pump.

b. Insert control rods to reduce power to below the 80% rod line.

c. Scram the reactor.

d. Increase "A" reactor recirculation pump speed using local manual control of the scoop tube.

ANSWER: 7

b.

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QUESTION: 8 POINT VALUE: 1.00 RECORD: 272 ID: LSA0302
LESSON: 15-2A Objectives: 16

Under the current plant conditions, what would be the expected response of the primary containment to a subsequent LOCA condition:

a. Torus pressure rises and SP temperature remains constant.

b. Torus and drywell will function properly.

c. Torus pressure will be lower than drywell pressure.

d. Torus pressure will remain equalized with drywell pressure.

ANSWER: 8

d.

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QUESTION: 9 POINT VALUE: 1.00 RECORD: 280 ID: LSA0310
LESSON: 17-2B Objectives: 06

Based on control room indications, which of the following is the most likely cause of the RPV level decrease transient?

a. Reactor Recirculation trip.

b. Loss of steam flow signal to the feed water level control circuitry.

c. Feed pump control failure.

d. Reactor Recirculation Pump runback.

ANSWER: 9

c.

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QUESTION: 10 POINT VALUE: 1.00 RECORD: 276 ID: LSA0306
LESSON: 10-2A Objectives: 30

For the current plant conditions, without further operator actions, what will happen to the Recirculation System?

a. One M-G set will trip automatically.

b. Both M-G set speeds will remain constant.

c. One M-G set will lower in speed.

d. One M-G set will rise in speed.

ANSWER: 10

b.

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QUESTION: 11 POINT VALUE: 1.00 RECORD: 277 ID: LSA0307
LESSON: 14-2C Objectives: 15

Suppose that the PCIS Group 5 steam line flow high instrumentation failed to operate. With this failure:

a. The Manual Isolation System B pushbutton should be depressed.

b. If the E51-F007 and F008 were manually closed, they would open on an RCIC initiation.

c. The system should still automatically isolate from steam leak detection.

d. The RCIC turbine would trip on a non-isolation signal.

ANSWER: 11

c.

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QUESTION: 12 POINT VALUE: 1.00 RECORD: 279 ID: LSA0309
LESSON: 22-2B Objectives: 01

**** NOTE: This question is not related to the scenario ****

How does the Service Water System change, if at all, if a LOCA signal is received?

a. Same under normal and LOCA conditions.

b. SW-V103, and -V106 throttle in the closed direction.

c. All SW pumps start.

d. All SW pumps selected to the Nuclear SW Header start.

ANSWER: 12

b.

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QUESTION: 13 POINT VALUE: 1.00 RECORD: 282 ID: LSA0312
LESSON: 14-2D Objectives: 18

**** NOTE: This question is not related to the scenario ****

With a LOCA signal present, a failure of breaker AI5 (DG 3 output breaker), and a loss of power to E3 occurs. Which of the following best describes the operability status of Unit 2 "A" RHR Loop?

a. "A" RHR Loop is fully operable.

b. "A" RHR Loop is capable of suppling only limited flow.

c. Due to loss of power to "A" RHR Loop LPCI injection valves the system is INOP.

d. "A" RHR Loop can only be operated in Suppression Pool Cooling Mode.

ANSWER: 13

b.

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QUESTION: 14 POINT VALUE: 1.00 RECORD: 286 ID: LSA0316
LESSON: 20-2D Objectives: 23

**** NOTE: This question is not related to the scenario ****

If the local D/G breaker key-locked ASSD isolation switch is in the LOCAL position, which one of the following statements is correct?

a. The D/G will start on an automatic signal and load on to its emergency bus.

b. The D/G can be manually loaded to a dead bus from the control room.

c. The D/G can be manually loaded to a dead bus from the local D/G panel.

d. The D/G can be manually loaded to a dead bus from either the control room or the local D/G panel.

ANSWER: 14

c.

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** "NRC B2 SSA03 RO" ANSWER KEY **

QUESTION: 15 POINT VALUE: 1.00 RECORD: 291 ID: LSA0321
LESSON: 14-2B Objectives: 15

**** NOTE: This question is not related to the scenario ****

If the speed feedback signal in the HPCI turbine control valve control circuit fails at zero. The control valve will:

a. Remain closed when HPCI is started.

b. Fail to the full open position when HPCI is started.

c. Fail to the full open position immediately.

d. Cycle open and then fail closed when HPCI is started.

ANSWER: 15

b.

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** END OF "NRC B2 SSA03 RO" ANSWER KEY **

** "NRC B1 SSA10 RO" ANSWER KEY **

(OPEN REFERENCE EXAM CREATED FROM STATICS OPEN REFERENCE EXAM BANK)

EXAM NAME: NRC B1 SSA10 RO

EXAM DATE: 04/14/92

CLASS: NRC/LOR

COURSE CODE: ROA24B

PREPARED BY: L DUNLAP

NUMBER OF QUESTIONS: 15

TOTAL POINTS: 15.00

80% POINTS: 12.00

70% POINTS: 10.50

TIME LIMIT: 1.00 HOURS

MASTER

ESTIMATED TIME TO COMPLETE THE EXAM: 47.00 MINUTES

REFERENCES TO BE PROVIDED TO THE STUDENT:

EOP-01-UG, T/S, 2-A-2 4-7

** "NRC B1 SSA10 RO" ANSWER KEY **

** "NRC B1 SSA10 RO" ANSWER KEY **

QUESTION: 1 POINT VALUE: **1.00** RECORD: **37** ID: **LSA1014**
LESSON: **14-2G** Objectives: **13A**

Concerning the SLC system, under the current plant condition:

a. SLC tank temperature will decrease.

b. SLC is operable.

c. SLC will not fulfill its intended function.

d. SLC tank level indication is not valid.

ANSWER: 1

a.

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QUESTION: 2 POINT VALUE: **1.00** RECORD: **42** ID: **LSA1019**
LESSON: **28-2A** Objectives: **09**

After plant conditions are stabilized by operator actions, the Reactor Protection System:

a. Bus "A" should be re-energized with Bus E5 or E6.

b. Bus "A" should remain de-energized.

c. Half scram should be reset.

d. us "A" should be re-energized with Bus E8.

ANSWER: 2

d.

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QUESTION: 3 POINT VALUE: 1.00 RECORD: 30 ID: LSA1007
LESSON: 15-2E Objectives: 04A

Given the current plant conditions, regarding primary containment isolations:

a. All penetrations will isolate as designed.

b. HPCI will isolate as designed.

c. MSIVs will isolate as designed.

d. RCIC will isolate as designed.

ANSWER: 3

c.

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QUESTION: 4 POINT VALUE: 1.00 RECORD: 364 ID: LSA1022
LESSON: 28-2A Objectives: 10

Given the current plant conditions, the status of RPS is:

a. RPS has functioned correctly.

b. No scram signal should be present.

c. An ATWS condition exists.

d. a half scram should exist on "A" RPS only.

ANSWER: 4

c.

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QUESTION: 5 POINT VALUE: 1.00 RECORD: 27 ID: LSA1004
LESSON: 20-2F Objectives: 14

Given the current plant conditions, if the alternate power source to the primary UPS inverter is lost it will be indicated by:

a. Decreasing battery bus voltage.

b. Loss of ability to mov rods.

c. Auto transfer to the standby inverter.

d. Only indications outside the control room.

ANSWER: 5

b.

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QUESTION: 6 POINT VALUE: 1.00 RECORD: 28 ID: LSA1005
LESSON: 19-2B Objectives: 23

Under these circumstances, which of the following will cause DG-3 to trip ?

a. Loss of nuclear service water header pressure.

b. Loss of lube oil pressure.

c. Inability to load the diesel.

d. Low jacket water pressure.

ANSWER: 6

b.

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QUESTION: 7 POINT VALUE: 1.00 RECORD: 40 ID: LSA1017
LESSON: 15-2E Objectives: 04

Without operator actions, if the plant continued to run for several hours under these conditions the MSIVs :

a. Will remain open.

b. Have failed to automatically close and must manually close.

c. Will automatically close on Group I isolation signal.

d. Will drift closed (outboards only).

ANSWER: 7

c.

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QUESTION: 8 POINT VALUE: **1.00** RECORD: **29** ID: **LSA1006**
LESSON: **14-2G** Objectives: **13C**

If the SLC switch is placed in the Pump B Run position but the B Squib valve does not fire:

a. 'B' SLC pump will inject because the "A" squib valve has already fired as indicated by 2-A-4-4-5 "Squib valve continuity loss" alarm.

b. 'B' SLC pump will start but can not inject until the switch is placed in the Pump A & B Run position.

c. 'B' SLC pump will start but will not inject until "A"-RPS is on alternate power.

d. 'B' SLC pump will start but will not inject until E-3 power has been restored.

ANSWER: 8

d.

[a] is incorrect; 2-A-4-4-5 is in due to loss of E-3
[b] is incorrect; both squibs fire in any position other than OFF
[c] is incorrect; RPS does not power the squib or any SLC logic
[d] is correct; the 'A' squib will fire as soon as power is available to E-3

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QUESTION: 9 POINT VALUE: 1.00 RECORD: 34 ID: LSA1011
LESSON: 20-2D Objectives: 23

If it becomes necessary to cross tie E1 to E3 and #1 DG is loaded to 3800 KW. Which of the following may be started?

a. 2A CRD pump

b. 2C RBCCW pump

c. 2D ventilation A/C condenser

d. 2A Fuel Pool cooling pump

ANSWER: 9

d.

.....

QUESTION: 10 POINT VALUE: 1.00 RECORD: 24 ID: LSA1001
LESSON: 14-2B Objectives: 15X

Regarding the HPCI system, in the current situation, HPCI will . . .

a. Inject water but is inoperable per Technical Specifications.

b. Inject water automatically but, PCIS group 4 is inoperable per Technical Specifications.

c. Not inject water to the RPV automatically, but is available in manual.

d. Not inject water to the RPV.

ANSWER: 10

b.

[a, c & d] are incorrect; HPCI is designed to operate from a standby lineup with a total loss of AC power.
[b] is correct; Div I of the steam leak detection is inoperable due to the power loss (A-2-4-7)

.....

QUESTION: 11 POINT VALUE: 1.00 RECORD: 362 ID: LSA1020
LESSON: 20-2F Objectives: 07

How would the EHC system have responded if the UPS system failed to automatically respond to the transient? EHC control power:

a. Would shift to 250 VDC.

b. Would shift to the alternate 120 VAC power supply.

c. Would not shift.

d. Would be supplied from unit one's power supply.

ANSWER: 11

c.

.....

QUESTION: 12 POINT VALUE: 1.00 RECORD: 26 ID: LSA1003
LESSON: 28-2A Objectives: 07

Given current plant conditions, what is the status of the ARI system:

a. A loss of power has occurred to the ARI logic, and it will not function properly.

b. ARI has activated due to the loss of E3.

c. ARI will operate properly if required.

d. ARI will automatically activate immediately

ANSWER: 12

c.

.....

QUESTION: 13 POINT VALUE: 1.00 RECORD: 39 ID: LSA1016
LESSON: 25-2D Objectives: 11

Based on the current status of the plant, continued plant operation is:

a. Allowed for up to 1 hour.

b. Allowed for up to 8 hours.

c. No longer allowed.

d. Allowed with no time constraints.

ANSWER: 13

c.

.....

QUESTION: 14 POINT VALUE: 1.00 RECORD: 467 ID: LSA1025
LESSON: 10-2A Objectives: 15

Current Recirc Pump 2A seal pressures are due to: (select the correct answer)

a. Failure of the number 2 seal.

b. Loss of seal injection flow.

c. Loss of pneumatics to the seal staging valve.

d. Loss of power to the seal staging valve.

ANSWER: 14

c.

.....

** "NRC B1 SSA10 RO" ANSWER KEY **

QUESTION: 15 POINT VALUE: 1.00 RECORD: 38 ID: LSA1015
LESSON: 14-2D Objectives. 18Q

**** Not Related To This Scenario ****

During a LOCA condition, a failure of the "A" Recirculation discharge valve to close will:

a. Reduce LPCI flow to the core.

b. Prevent LPCI loop "A" from injecting into the core.

c. Will not affect LPCI operation.

d. Will prevent shutdown cooling from operating.

ANSWER: 15

a.

.....

** END OF "NRC B1 SSA10 RO" ANSWER KEY **

** "CREW B RO" ANSWER KEY **

(OPEN REFERENCE EXAM CREATED FROM BTU LICENSED TRAINING EXAM BANK)

EXAM NAME: CREW B RO

EXAM DATE: 04/14/92

CLASS: NRC/LOR EXAM

COURSE CODE: ROA24B

PREPARED BY: L DUNLAP

MASTER

NUMBER OF QUESTIONS: 30

TOTAL POINTS: 30.00

80% POINTS: 24.00

70% POINTS: 21.00

TIME LIMIT: 2.00 HOURS

ESTIMATED TIME TO COMPLETE THE EXAM: **128.00 MINUTES**

REFERENCES TO BE PROVIDED TO THE STUDENT:

**APP FOR UA-01, APP UA-02, S. 1-10, R. 8,
APP UA-23, S. 6-2, R. 19, APP UA-28, 5-1,
EOP-01-EPP,RC/L-,R1, EOP-01-LEP-03, R. 5,
EOP-01-LPC, RC/P-26, R.8, EOP-01-RVCP, EOP-01-RXFP,
EOP-01-RXFP, STEP 038, R.4, EOP-01-RXFP, STEP 038, REV. 4,
EOP-01-SEP-02, R.4, EOP-01-SEP-02/FIG 1, EOP-01-UG,
EOP-02-PCCP, EOP-02-PCCP, PC/P-11, R.2,
EOP-03-SCCP, SC/T-18&20, R.2, FP 50017, OI-37, RC/L-19,R6,
OP-07,8.13, R.13, PT-01.1.6, 7.2.2,R12, T.S. 3.6.5.1,
T.S., 3.5.3.1.A,R98, TECH SPEC., S 3.3.1, REV. 78**

** "CREW B RO" ANSWER KEY **

QUESTION: 1 POINT VALUE: 1.00 RECORD: 1767 ID: LLN0138
LESSON: 28-2A Objectives: 23

While performing PT 01.1.6, Reactor Protection System Manual Scram Test, Step 7.2.2, the RPS Trip System B Scram group lights did not energize. This condition indicates: (Select the correct answer.)

a. the acceptance criteria of the PT are met. No further action is necessary.

b. The acceptance criteria of the PT are met. Initiate a WR/JO to investigate the failure of the lights.

c. The acceptance criteria of the PT are not met. Depress the Manual Reactor Scram System B pushbutton within one hour and determine the cause of the RPS failure.

d. The acceptance criteria of the PT are not met. Depress the Manual Reactor Scram System B pushbutton and commence a normal reactor shutdown. Be in hot shutdown within 6 hours.

ANSWER: 1

b.

.....

QUESTION: 2 POINT VALUE: 1.00 RECORD: 1645 ID: LLN0033
LESSON: 22-2B Objectives: 11-A, 14-A

The plant is in the process of shutting down with the "A" loop of RHR in the shutdown cooling mode of operation using the Nuclear Service Water Header. The following annunciators are received, and indications observed:

CONV HDR SW PUMP C TRIP, UA-01, 1-10
NUCLEAR HDR SW PUMP A TRIP, UA-01, 2-10
NUCLEAR HDR SW PUMP B TRIP, UA-01, 4-10
NUCLEAR HDR SERV WTR PRESS-LOW, UA-01, 1-10

Conv Hdr SW Pumps A and B	RUNNING
Drywell Temperature	115°F and increasing
Reactor pressure	98 psig
Reactor Temperature	170°F
Conv SW Hdr pressure	63 psig
RHR HX 2A SW outlet temperature	160°F and slowly increasing

Based on these indications, with regard to shutdown cooling, which of the following actions should be performed? (Select the correct answer.)

a. Increase the RHR HX service water flow rate by throttling open RHR HX 2A SW Discharge Valve, E11-PDV-F068A. Reduce flow to the RBCCW Heat Exchangers.

b. Place the second loop of RHR in shutdown cooling, while throttling back on RBCCW flow with SW-V103 or SW-V106.

c. Isolate Nuclear Service Water to RHR and align the Conventional Service Water header to supply the RHR Heat Exchangers.

d. Shift one loop of RHR to suppression pool cooling, isolate MSIV's, RCIC, and HPCI steam supply valves, open one SRV controlling reactor level using an RHR or core spray pump.

ANSWER: 2

c.

.....

** "CREW B RO" ANSWER FEY **

QUESTION: 3 POINT VALUE: 1.00 RECORD: 1583 ID: LLE0028
LESSON: 07-2K.01 Objectives: 18, 20

During emergency conditions when the Primary Containment is degraded you are required, by procedure, to initiate drywell spray under certain conditions. In which one of the following circumstances would you NOT initiate drywell sprays? (Select the correct answer.)

a. Torus pressure is 14 psig, DW temperature 250°F.

b. DW average temperature is 300°F, DW pressure 8 psig.

c. DW hydrogen concentration is 7%, Torus O2 concentration 5%.

d. DW average temperature 400°F, pressure 5 psig.

ANSWER: 3

d.
this violates the DW spray init graph.

.....

** "CREW B RO" ANSWER KEY **

QUESTION: 4 POINT VALUE: **1.00** RECORD: **1658** ID: **LLN0037**
LESSON: **27-2B** Objectives: **11,14**

A reactor startup is in progress. Control rod 38-27 was being withdrawn when the following display appeared on the Rod Worth Minimizer screen:

```
SELF TEST:  OK      SEQUENCE:   A1  BPWS        MODE:   OPERATE
BLOCKS: INSERT      STEP:       001             POWER:  BELOW LPSP
        WITHDRAW

SR  38 -- 27:FF     SUB 48                      IB  WB
                                                A1--001
HELP                            DISPLAY OFF                 ETC
```

Based on the given information, which of the following actions should be taken? (Select the correct answer.)

a. Attempt to recouple control rod 38-27.

b. Enter a substitute value for control rod 38-27 after verifying its position.

c. Fully insert control rod 38-27.

d. Declare control rod 38-27 INOPERABLE and electrically disarm it then notify the Nuclear Engineer.

ANSWER: 4

b.

.....

QUESTION: 5 POINT VALUE: 1.00 RECORD: 1094 ID: LLE0229
LESSON: 07-2K.02 Objectives: 08

Plant Conditions:

ATWS (Reactor Power 15%)
Boron is being pumped with RCIC
High energy steam line leak from RCIC system
Steam Tunnel Temperature 260°F (steady)
20 ft. Reactor Building Temperature 210°F (steady)

Assume the operating crew is executing EOP-03-SCCP. Under these circumstances, the crew should: (Select the correct answer.)

a. terminate and prevent injection from C/F, RHR, CSS, and HPCI, then emergency depressurize the reactor.

b. immediately isolate RCIC.

c. wait until the reactor is shut down, then emergency depressurize the RPV by opening seven safety relief valves.

d. commence a reactor cooldown at a rate of less than 100°F/hr. when allowed by the Level/Power Control Procedure.

ANSWER: 5

d.
LP/C requires 5885# borax (CSB) prior to starting cooldown

.....

QUESTION: 6 POINT VALUE: 1.00 RECORD: 667 ID: LLE0222
LESSON: 14-2E Objectives: 09, 15

Following a transient, Unit 2 is shut down with the following conditions:

RPV level +65 inches DW Pressure 1.0 psig
RPV Pressure 300 psig DW Temperature 140°F

Due to multiple electrical and equipment failures, the 'A' Core Spray system is the only injection source available. CS is in a normal standby lineup EXCEPT that both the inboard (E21-F005A) and outboard (E21-F004A) injection valves are shut. The 'A' CS pump is started and the F005A valve is opened. If the F004A valve stays closed when taken to open for injection, then: (Select the correct answer.)

a. The F004A valve is malfunctioning, and should be opened locally.

b. The F004A valve closed seal-in logic must be reset before opening the valve.

c. The initiation signal must be reset before opening the F004A valve.

d. The F005A valve should be shut. The F004A valve can then be opened; throttle the F005A valve for injection.

ANSWER: 6

d.

.....

QUESTION: 7 POINT VALUE: **1.00** RECORD: **940** ID: **LLE0230**
LESSON: **07-2K.11** Objectives: **04,08, 09,10**

A loss of all level instrumentation has forced the unit to enter the Reactor Flooding Procedure (EOP-01-RXFP). The operators have been injecting with maximum flow from all available injection and alternate injection systems for the last five (5) minutes.

Plant conditions are as follows:

All rods are in	
Time since shutdown:	25 minutes
Reactor pressure:	70 psig and steady
Drywell pressure:	23 psig and steady
Suppression Pool Pressure:	22 psig and steady
4 SRV's are open	

From the choices below, select the one that best describes the required operator actions:

a. Maintain reactor pressure as close as possible to the Minimum Alternate Flooding Pressure for the Minimum Core Flooding Interval.

b. Operate SRV's as necessary to maintain RPV pressure ≥ 50 psig.

c. Terminate injection and try to restore level indication within 3.5 minutes.

d. Enter "Primary Containment Flooding Procedure" EOP-01-PCFP.

ANSWER: 7

d.

.....

QUESTION: 8 POINT VALUE: 1.00 RECORD: 1948 ID: LLN0149
LESSON: 15-2B Objectives: 11

For which of the following plant conditions is Secondary Containment NOT required to be operable on Unit 2.

a. The Unit is in the POWER OPERATION MODE with a Fire Watch stationed to run a hose from South C.S. through the 20' air lock to the salt water release tank.

b. The Unit is in the HOT SHUTDOWN MODE, warming 'B' loop RHR to commence shutdown cooling.

c. The Unit is in the REFUEL MODE, with fuel sipping in progress.

d. The Unit is in the COLD SHUTDOWN MODE, maintaining temperature < 180°F, NEW fuel inspection in progress.

ANSWER: 8

d.

.....

QUESTION: 9 POINT VALUE: **1.00** RECORD: **1750** ID: **LLE0115**
LESSON: **07-2K.02** Objectives: **13A**

Plant Conditions:

ATWS (Reactor Power - 15%)
Injecting boron with HPCI
RPV water level being maintained at TAF
High energy steam line break in secondary containment

20' north reactor bldg.	217°F	Rising slowly
50' NE reactor bldg.	210°F	Rising slowly
SRHR Equipment room	219°F	Rising slowly
RCIC room	211°F	Rising slowly

Under the above listed conditions, which one of the following actions should be taken? (Select the correct answer.)

a. Immediately emergency depressurize the reactor by opening seven safety relief valves.

b. Wait until the reactor is shut down, then emergency depressurize the RPV by opening seven safety relief valves.

c. Terminate and prevent all injection, then emergency depressurize the reactor.

d. Terminate and prevent injection from condensate and feedwater, RHR, and core spray, then emergency depressurize the reactor.

ANSWER: 9

d.

.....

QUESTION: 10 POINT VALUE: **1.00** RECORD: **1720** ID: **LLN0142**
LESSON: **14-2E** Objectives: **15.N**

Unit 2 is operating in a normal, full power lineup at 100% reactor power. The Reactor Building Auxiliary Operator (RBAO) reports that the A Loop Core Spray (CS) core plate differential pressure instrument is reading between +40 and +50 inches. The CS System valve lineup has been verified to be correct. Select the correct statement below concerning the CS System.

a. The instrument value is within the normal operating range. No further action is required.

b. The instrument value is below the normal operating range. Keep-fill has been isolated. Check the keep-fill lineup.

c. The instrument value is above the normal operating range. The plant heatup has caused valve binding, causing the pressure to increase in the CS line. Momentarily open, then close one of the test bypass valves to relieve the pressure.

d. The instrument value is above the normal operating range. This is an indication of a rupture in the CS injection line. Begin a normal reactor shutdown and cooldown within 7 days.

ANSWER: 10

d.

.....

QUESTION: 11 POINT VALUE: 1.00 RECORD: 1758 ID: LLE0118
LESSON: 07-2K.11 Objectives: 09, 10

Plant Conditions:

ATWS
RPV Water Level cannot be determined
SLC operating
Four SRV's open

After RPV pressure dropped to less than 180 psig, the operating crew has maintained the RPV pressure slightly above 185 psig for 90 minutes, the reactor is shutdown due to boron injection (the entire content of the SLC tank has been injected). The operating crew should: (Select the best answer.)

a. close 3 SRV's and allow reactor level to increase until level instruments are back on scale.

b. terminate injection and wait the maximum core uncovery time limit for level instruments to come on scale.

c. continue to maintain RPV pressure at the minimum alternate flooding pressure until reactor water level can be determined.

d. go to the primary containment flooding procedure and execute it concurrently with the level/power control procedure.

ANSWER: 11

c.

.....

QUESTION: 12 POINT VALUE: 1.00 RECORD: 1909 ID: LLN0120
LESSON: 14-2B Objectives: 30

During EOP execution, plant conditions are as follows:

Reactor power	15%
Reactor water level	133"
Suppression pool temperature	111°F
HPCI in standby	

Direction has been given to terminate and prevent injection from HPCI. This can best be accopmlished by:

a. Depressing HPCI Manual Isolation pushbutton.

b. Depressing HPCI Turbine Trip pushbutton.

c. Closing HPCI steam line isolation valves, E41-F002/F003.

d. Placing HPCI aux oil pump in 'PULL-TO-LOCK'.

ANSWER: 12

d.

.....

QUESTION: 13 POINT VALUE: 1.00 RECORD: 1927 ID: LLA0103
LESSON: 14-2D Objectives: 20,18B

Unit 2 is operating at 100% power with RHR Loop "A" in standby LPCI alignment when annunciator RHR RELAY LOGIC A PWR FAILURE (A-01 2,8) is received. An Auxiliary Operator reports that supply breaker circuit 3 on 125 VDC Distribution panel 4A is tripped and will not reset. A LOCA then occurs resulting in the following plant conditions:

- Reactor level -20 inches (N036, N037)
- Reactor pressure 500 psig
- Drywell pressure 13 psig

Which of the following describes the response of RHR Loop "A" to plant conditions and the loss of logic power: (Select the best answer.)

a. RHR pumps 2A and 2C are not running and cannot be manually started.

b. RHR pumps 2A and 2C are not running but can be manually started.

c. RHR pumps 2A and 2C are running with LPCI inboard injection valve (F015) closed.

d. RHR pumps 2A and 2C are running with LPCI inboard in ection valve (F015) open.

ANSWER: 13

c.

.....

QUESTION: 14 POINT VALUE: 1.00 RECORD: 663 ID: LLE0224
LESSON: 14-2E Objectives: 19, 15

A LOCA on Unit 2 has resulted in the auto start of all low pressure ECCS and the following indications:

RPV Pressure: 50 psig
RPV Level: 11 inches (N026A/B)
-5 inches (N036)

DW Pressure: 10 psig
DW Temperature: 315°F
Suppression Pool Press: 9 psig
Suppression Pool Temp: 180°F
Suppression Pool Level: -48 inches

If flow from CS pump A and B is 5000 gpm each, then: (Select the correct answer.)

a. Secure both pumps since they are operating in the unsafe region of the Vortex Limit Curve, and adaquate core cooling is assured.

b. Throttle flow from both CS loops to less than 4400 gpm and restore vessel level to +170 to +200 inches.

c. Maintain maximum flow from both CS loops until level is above TAF then throttle flow to less than 4400 gpm.

d. Maintain maximum flow from both CS loops to flood the vessel since there is no valid level indication.

ANSWER: 14

d.

.....

QUESTION: 15 POINT VALUE: 1.00 RECORD: 1615 ID: LLE0049
LESSON: 14-2G Objectives: 04.A,10,13.A

An ATWS has occurred on Unit 2 with SLC pump 2A out of service. Reactor water level has been lowered to TAF and reactor power is 5%. SLC pump 2B is injecting and HPCI is being used for vessel level control. There is a subsequent Loss of Off-Site Powr (LOOP) and the only diesel generator that starts and loads onto its respective emergency bus is DG 3. In order to continue injecting the boron solution into the vessel, which of the following actions is (are) preferred? (Select the correct answer.)

a. Restart CRD pump 2A and utilize it to inject SLC.

b. Use RWCU pump 2A via the SLC tank or with borax.

c. Utilize the SLC tank in conjunction with HPCI via the HPCI/RCIC CST Suction Vent Valve.

d. Allow SLC pump 2B to continue boron injection.

ANSWER: 15

a.

.....

** "CREW B RO" ANSWER KEY **

QUESTION: 16 POINT VALUE: **1.00** RECORD: **1754** ID: **LLE0117**
LESSON: **07-2K.08** Objectives: **04, 05**

Plant Conditions :

Drywell Pressure	10 psig (rising)
Drywell Temperature	285 °F (rising)
RPV water level	+175 inches (steady)
Torus Pressure	9 psig (rising)
Suppression Chamber Spray	initiated
MSIV's	closed due to MSL Hi Rad

With the above listed conditions, the operating crew should: (Select the best answer.)

a. anticipate emergency depressurization.

b. commence a reactor cooldown.

c. emergency depressurize the RPV.

d. initiate drywell sprays.

ANSWER: 16

d.

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QUESTION: 17 POINT VALUE: 1.00 RECORD: 1402 ID: LLE0235
LESSON: 15-2C Objectives: 11C

A large line break LOCA has occurred in Unit 2 simultaneously with a loss of off-site power to both units. Unit 2 conditions are as follows:

- Reactor level -50 inches
- Drywell pressure 35 psig
- Hydrogen concentration 6.7%
- Oxygen concentration 6.2%

Primary containment vent/purge is required by EOP's. To establish a purge lineup using CAD, vaporizer B inlet and outlet valves must be manually opened if there has been a failure of: (Select the best answer.)

a. Diesel Generator 1

b. Diesel Generator 2

c. Diesel Generator 3

d. Diesel Generator 4

ANSWER: 17

b.

QUESTION: 18 POINT VALUE: **1.00** RECORD: **1603** ID: **LLA0026**
LESSON: **19-2B** Objectives: **11.F, 10.C**

The plant is operating at 85% power when a solid state relay in the EHC cabinet fails causing a loss of 125V DC power to the EHC System. While waiting for the power to be restored, the following conditions exist:

Turbine vibration	7 mils
Condenser vacuum	27 inches Hg
Stator water coolant flow	400 gpm
Main oil pump discharge pressure	230 psig
Main generator	675 MWe
EHC header pressure	1605 psig

If the above conditions exist for five minutes with no changes, what operator actions should be taken? (Select the correct answer.)

a. Continue to monitor system parameters until the 125V DC power is restored to the EHC System.

b. Trip the turbine from the RTGB since the generator did not run back.

c. Manually trip the turbine from the front standard since the generator did not run back.

d. Manually reduce the load on the generator to a stator current of less than 5792 amps.

ANSWER: 18

c.

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QUESTION: 19 POINT VALUE: **1.00** RECORD: **1680** ID: **LLA0040**
LESSON: **20-2F** Objectives: **07**

The plant (Unit 1) had been operating for 37 days when a failure of the UPS bus occurred. The Shift Supervisor attempted to restore the UPS bus but was unable to do so. The reactor was manually scrammed and a cooldown initiated. Select the correct statement below.

a. A cooldown under these conditions should not be conducted since the neutron monitoring system has been deenergized.

b. The cooldown should be rapid, i.e., as close to 100°F as possible to take advantage of the negative reactivity insertion from Xenon. This will prevent an accidental restart of the reactor as the plant is cooled down.

c. Additional personnel will be required for the cooldown. Service and instrument air will not operate properly and automatic valves will have to be manually controlled.

d. Neutron monitors must be closely monitored during the cooldown as the rod position information was lost. Care must be taken to ensure the reactor remains subcritical.

ANSWER: 19

d.

.....

QUESTION: 20 POINT VALUE: **1.00** RECORD: **1822** ID: **LLN0083**
LESSON: **22-2B** Objectives: **06B, 06C**

Unit 2 is operating at 100% power. Nuclear Service Water (NSW) pump 2A is operating. NSW pump 2B is inop and under clearance. Conventional Service Water (CSW' pump 2B is selected for auto on the nuclear SW header. A Loss of Off-Site Power occurs resulting in the following conditions:

- NSW pump 2A trips on undervoltage
- NUCLEAR HDR SERV WTR PRESS-LOW annunciates
- Nuclear header pressure indicates less than 40 psig
- GEN-XFRM PRIMARY L/O UNIT TRIP in alarm
- All four diesel generators start and tie on to their respective E-bus

Which one of the following correctly describes the responsee of NSW pump 2A and CSW pump 2B as their respective E bus are energized? (Select the correct answer.)

a. NSW pump 2A and CSW pump 2B start with no time delay.

b. NSW pump 2A starts with no time delay, CSW pump 2B does not start.

c. NSW pump 2A starts after 5 seconds, CSW pump 2B starts with no time delay.

d. NSW pump 2A starts after 5 seconds, CSW pump 2B does not start.

ANSWER: 20

b.

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QUESTION: 21 POINT VALUE: 1.00 RECORD: 1814 ID: LLE0144
LESSON: 07-2K.02 Objectives: 06.C

While operating at 100% power, the SRHR sprinkler system is activated by a fire in that area which continues to burn. To attack the fire from two directions, fire hoses have been run down the stairwell and in from the HPCI room. The Fire Commander reports that the water level in SRHR is now over 1 foot deep and is spilling over into the HPCI room where the level is also beginning to rise. Which of the following actions should the operating crew take? (Select the correct answer.)

a. Manually scram the reactor and anticipate emergency depressurization.

b. Perform a reactor shutdown per GP-05, or by manual scram, as directed by the Shift Foreman.

c. Manually scram the reactor and cooldown at normal rates per the RC/P section of EOP-01.

d. Continue operation and monitor the water level in the HPCI room.

ANSWER: 21

d.

QUESTION: 22 POINT VALUE: 1.00 RECORD: 1737 ID: LI-E0111
LESSON: 07-2K.12 Objectives: 07

During a loss of normal injection on Unit 2, the operating crew is using SLC to supply demin water to the RPV. This is the only available system. If level continues to fall, at what indicated water level will emergency depressurization be required given a reactor pressure of 875 psig and a drywell temperature of 232°F? (Select the correct answer.)

a. -40 inches

b. -72 inches

c. -52 inches

d. -82 inches

ANSWER: 22

a.

.....

** "CREW B RC" ANSWER KEY **

QUESTION: 23 POINT VALUE: 1.00 RECORD: 1530 ID: LLE0002
LESSON: 07-2K.12 Objectives: 07

If during execution of the Steam Cooling Procedure the RCIC system becomes available, the operating crew will immediately emergency depressurize the reactor assuming all previous EOP actions have been performed correctly. When this action is taken, the RCIC system will: (Select the correct answer.)

a. continue to operate until the RPV pressure decreases to RCIC stall pressure.

b. automatically isolate when the reactor pressure decreases to the low pressure isolation setpoint.

c. isolate on high steam flow as the reactor pressure decreases.

d. trip due to turbine overspeed when the reactor pressure decreases to near 50 psig.

ANSWER: 23

a.

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QUESTION: 24 POINT VALUE: 1.00 RECORD: 1578 ID: LLN0015
LESSON: 28-2A Objectives: 23

Unit 2 has been operating at rated power for several days. An I&C technician performing am MST has found the Drywell Pressure High Switch C72-PT-N002A setpoint at 2.4 psig. As the control operator, you should: (Select the correct answer.)

a. pull fuse C72A-F4A within 1 hour.

b. have the I&C technician adjust the setpoint to less than 2 psig within 2 hours.

c. pull fuses C72A-F4A and C72A-F4C within 1 hour.

d. insert a manual scram in A channel within 1 hour.

ANSWER: 24

a.

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QUESTION: 25 POINT VALUE: 1.00 RECORD: 1786 ID: LLA0064
LESSON: 07-2B Objectives: 06g

A reactor startup/heatup is being conducted. The Control Operator finds him/herself in a situation where reactor power is 625 MWT and reactor pressure is 780 psig (one or more trip functions may have failed to function to get to this point). Under these conditions the operator should...: (Select the correct answer.)

a. reduce reactor power to 400 MWT by driving control rods.

b. raise reactor pressure using any available means.

c. increase recirculation flow.

d. shutdown the reactor.

ANSWER: 25

d.

.....

QUESTION: 26 POINT VALUE: 1.00 RECORD: 1907 ID: LLN0118
LESSON: 35-2B Objectives: 04

The following plant conditions exist:

Power = 90%
At Time (T) = 1 min the Control Room Area High Rad alarm came in with a confirmed reading of 2.5 mr/hr.

The CBEAF system initiated with all fans and dampers repositioning as required.

At Time (T) = 10 min the Control Room intake High Chlorine alarm sealed in with a confirmed reading of 5 ppm.

The CBEAF system isolated by the fans tripping and the inlet, outlet, and recirc dampers shutting.

From the choices below, select the one that best describes the above event.

a. The CBEAF system responded as designed.

b. The CBEAF system should have not isolated until the chlorine concentration reached 7 ppm.

c. The CBEAF system should not have isolated at all since a chlorine intrusion is an analyzed transient.

d. The CBEAF system should have isolated at a chlorine concentration of 1 ppm.

ANSWER: 26

a.

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QUESTION: 27 POINT VALUE: 1.00 RECORD: 1522 ID: LLA0001
LESSON: 10-2A Objectives: 16h

A trip of a reactor feedpump at rated power has caused a Recirc Pump runback to 45% speed to occur for both Recirc Pumps. The running feedpump is operating at maximum speed. RPV water level is +180 inches and is lowering. The following stable conditions exist:

Core Flow 36.5 Mlbs/hr
Feedwater flow 5.6 Mlbs/hr

Based on these conditions, which of the following actions must be taken to stabilize and recover reactor water level and continue power operation:

a. insert control rods in accordance with the Immediate Reactor Power Reduction form.

b. trip one of the Recirc Pumps, restart the recirc pump when the reactor feedpump has been restored.

c. reduce Recirc pump speed. Maintain speeds within 20% of each other.

d. insert control rods in reverse order in accordance with the Rod Sequence Checkoff Sheet.

ANSWER: 27

a.

QUESTION: 28 POINT VALUE: 1.00 RECORD: 1688 ID: LLE0088
LESSON: 07-2K.02 Objectives: 06.B, 08.A

The reactor (Unit 2) has been operating for 50 days with minor fuel leakers identified. A steam leak develops in the HPCI Room and HPCI fails to isolate. It is found that the Outboard Steam Isolation Valve (E41-F003) is mechanically stuck in the mid position and the Inboard Steam Isolation Valve (E41-F002) will not operate electrically. Upon local investigation E&RC reports that the HPCI Room is inaccessible due to high radiation levels. Current conditions are:

Reactor Power 100%
HPCI Room Temp 200°F
North RHR Room 3 mr/hr 90°F
South RHR Room 5 mr/hr 95°F

Based on current plant conditions, the crew should....(select the correct answer)

a. scram the reactor and emergency depressurize.

b. scram the reactor and commence a cooldown at normal cooldown rates.

c. continue to monitor radiation levels and attempt to close the HPCI Isolation Valves. Scram the reactor if another area becomes inaccessible.

d. scram the reactor and open all bypass valves to rapidly cooldown the reactor.

ANSWER: 28

b.
ONE AREA > MAX SAFE

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QUESTION: 29 POINT VALUE: 1.00 RECORD: 1533 ID: LLA0005
LESSON: 09-2A Objectives: 09, 11

The plant (Unit 2) is conducting a reactor startup. The reactor is critical at 3E5 cps in the source range. Reactor period is 200 seconds. The decision is made to notch out a control rod. The selected control rod is withdrawn one notch. There is no observable change in period or counts even though the rod tip is in a high flux area. The same control rod is withdrawn an additional notch with no observable changes. A different rod is selected, withdrawn one notch and allowed to settle. Reactor period decreases and source range counts begin increasing more rapidly. Suddenly reactor period drops to 50 seconds, source range counts begin to increase rapidly and a rod block occurs. The Control Operator immediately inserted control rods and stopped the power increase. As a supplementary action you should: (Select the correct answer.)

a. maintain reactor power at its present point. Determine and correct the cause of the reactivity insertion before continuing the reactor startup.

b. fully insert the control rod that dropped. Electrically disarm the rod when it is fully inserted.

c. continue the reactor startup, ranging up the IRMs to prevent a reactor scram. Determine and correct the cause of the reactivity insertion prior to reactor shutdown.

d. scram the reactor. Determine and correct the cause of the reactivity insertion prior to restarting the reactor.

ANSWER: 29

b.

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** "CREW B RO" ANSWER KEY **

QUESTION: 30 POINT VALUE: **1.00** RECORD: **603** ID: **LLA0131**
LESSON: **20-2D** Objectives: **05**

During a reactor scram caused by high drywell pressure due to loss of drywell cooling, Bus 2C fails to transfer causing the associated E-Bus to deenergize because no diesel generators auto start. Which of the following is correct concerning the Diesel Generators (DGs): (Select the correct answer.)

a. DG 3 only has failed to auto start. Immediately push the Auto Mode Start Switch on the number 3 DG. Observe that the number 3 DG output breaker closes.

b. DG 4 only has failed to auto start. Immediately push the Auto Mode Start Switch on the number 4 DG. Observe that the number 4 DG output breaker closes.

c. DGs 1 AND 3 have failed to auto start. Immediately push the Auto Mode Start Switch on the number 1 AND number 3 DGs. Observe that the number 3 DG output breaker closes.

d. DGs 2 AND 4 have failed to auto start. Immediately push the Auto Mode Start Switch on the number 2 AND number 4 DGs. Observe that the number 4 DG output breaker closes.

ANSWER: 30

d.

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** END OF "CREW B RO" ANSWER KEY **

** "CREW D RO" ANSWER KEY **
(OPEN REFERENCE EXAM CREATED FROM BTU LICENSED TRAINING EXAM BANK)

MASTER

EXAM NAME: CREW D RO

EXAM DATE: 04/28/92

CLASS: NRC/LOR EXAM

COURSE CODE: ROA24B

PREPARED BY: L DUNLAP

NUMBER OF QUESTIONS: 30

TOTAL POINTS: 30.00

80% POINTS: 24.00

70% POINTS: 21.00

TIME LIMIT: 2.00 HOURS

ESTIMATED TIME TO COMPLETE THE EXAM: **116.00 MINUTES**

REFERENCES TO BE PROVIDED TO THE STUDENT:

**AOP-15, 3.2(1)(6), R.1, EOP-01-RVCP, CAUTION 1,
T.S. 3.6.5.1, T/S, SECT. 3.3.1**

** "CREW D RO" ANSWER KEY **

QUESTION: 1 POINT VALUE: **1.00** RECORD: **537** ID: **LLE0232**
LESSON: **07-2K.06** Objectives: **03**

Plant conditions:

ATWS
Reactor Power 10%
Reactor Pressure 1000 PSIG
Reactor Water Level + 1"
SLC injecting
Torus Water Temperature 165°F
Torus Water Level -2 feet
Suppression Chamber Pressure 2 PSIG

During a serious emergency condition with plant conditions as listed above, the following primary containment limit is most likely to be challenged: (Select the correct answer.)

a. SRV tailpipe level limit.

b. Heat capacity level limit.

c. Heat capacity temperature limit.

d. Pressure suppression pressure limit.

ANSWER: 1

c

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QUESTION: 2 POINT VALUE: 1.00 RECORD: 1738 ID: LLA0054
LESSON: 10-2A Objectives: 16g,35d,37d

The plant has been operating at a constant power for 106 hours when "A" recirculation pump motor generator develops a fault and trips. Reactor power stabilizes at 60% and core flow stabilizes at 30 mlbs/hr. Which of the following is the correct action to be taken in response to this condition? (Select the correct answer.)

a. Manually scram the reactor.

b. Raise the speed of the operating pump and raise reactor core flow to greater than 35 mlbs/hr.

c. Reduce reactor power to a level compatible with core flow by inserting control rods per the Nuclear Engineer's instructions on the Immediate Reactor Power Reduction Form.

d. Shut the discharge valve of the tripped pump. Monitor for power oscillations, if oscillations >10% occur, then manually scram the reactor.

ANSWER: 2

a.

.....

QUESTION: 3 POINT VALUE: **1.00** RECORD: **1764** ID: **LLE0123**
LESSON: **07-2K.10** Objectives: **19,05**

Current Plant Conditions

Reactor Water Level	0 inches
Condenser Vacuum	0 inches
Reactor Power	1%
"A" Circ Water Pump	Running
"A" Condensate Pump	Running
"A" Condensate Booster Pump	Running

A loss of Circulating Water has caused a Reactor Scram. All rods did not fully insert. The crew has lowered Reactor Water Level to control Reactor Power and the above plant conditions have been established. Which of the following will prevent the operator from taking action to open the MSIV's? (Select the correct answer.)

a. The operator notices that Load Set has lowered to 0%.

b. Only the "A" condensate Pump is available for operation.

c. The Steam Line HI Flow Annunciators have alarmed but are now clear.

d. SJAE "A" first Stage Steam Supply Valve will not open.

ANSWER: 3

c.

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QUESTION: 4 POINT VALUE: 1.00 RECORD: 1402 ID: LLE0235
LESSON: 15-2C Objectives: 11C

A large line break LOCA has occurred in Unit 2 simultaneously with a loss of off-site power to both units. Unit 2 conditions are as follows:

- Reactor level -50 inches
- Drywell pressure 35 psig
- Hydrogen concentration 6.7%
- Oxygen concentration 6.2%

Primary containment vent/purge is required by EOP's. To establish a purge lineup using CAD, vaporizer B inlet and ouclet valves must be manually opened if there has been a failure of: (Select the best answer.)

a. Diesel Generator 1

b. Diesel Generator 2

c. Diesel Generator 3

d. Diesel Generator 4

ANSWER: 4

b.

.....

QUESTION: 5 POINT VALUE: 1.00 RECORD: 889 ID: LLE0233
LESSON: 07-2K.11 Objectives: 02,07

During a non-ATWS emergency condition while executing the reactor flooding procedure, the operator is directed to establish the Minimum Reactor Flooding Pressure. This action assures that: (Select the correct answer.)

a. the RPV water level indication will be restored.

b at least one SRV will be open providing adequate core cooling through steam cooling.

c. sufficient injection is established to keep the SRVs open and flood the RPV.

d. the reactor water level is above the top of active fuel.

ANSWER: 5

c.

QUESTION: 6 POINT VALUE: 1.00 RECORD: 1403 ID: LLN0172
LESSON: 15-2F Objectives: 09I

Unit 1 power ascension is in progress with primary containment being inerted per OP-24. The status of Standby Gas Treatment (SBGT) is as follows:

- Primary containment suction valve (1F) open.
- Reactor building suction valves (1D/1H) closed.
- SBGT fan 1A control switch in PREF.
- SBGT fan 1B control switch in STBY.

A loss of reactor feedwater results in a decrease in reactor water level to 110 inches. Which of the following correctly describes the response of SBGT:

a. 1F remains open, 1D/1H auto opens, fan 1A auto starts.

b. 1F auto closes, 1D/1H auto opens, fan 1A auto starts.

c. 1F remains open, 1D/1H auto opens, fans 1A and 1B auto starts.

d. 1F auto closes, 1D/1H auto opens, fans 1A and 1B auto starts.

ANSWER: 6

b.

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QUESTION: 7 POINT VALUE: 1.00 RECORD: 1600 ID: LLE0039
LESSON: 07-2K.13 Objectives: 05,08

A LOCA has occurred on Unit 2. EOP-01-PCFP is being performed. The following conditions exist:

LPCI systems	Injecting at full flow
Core Spray Pump A (suction from CST)	Injecting at full flow
Core Spray Pump B (suction from suppression pool)	Injecting at full flow
RPV level	Unknown
RPV pressure	70 psig
Drywell Pressure (at 100 ft. elev.)	45 psig
Suppression Chamber Pressure	71 psig
CRD Pumps 2A/2B	Running
Primary Containment Level indicator	65.1 ft

2 condensate pumps are running and 1 condensate booster pump is injecting to the RPV.

Based on the given conditions, which of the following actions is correct? (Select the correct answer.)

a. All injection into the reactor vessel from sources external to the primary containment must be terminated.

b. The Condensate, Core Spray Pump 'A,' and CRD Pumps should be used only as necessary to maintain primary containment water level as is.

c. Continue to raise primary containment water level using the Condensate, Core Spray Pump 'B,' and CRD system.

d. Align as many alternate injection systems as necessary to raise primary containment water level.

ANSWER: 7

b. Pri Cont Lvl = 65.1 ft

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QUESTION: 8 POINT VALUE: 1.00 RECORD: 297 ID: LLA0124
LESSON: 10-2A Objectives: 15

A complete failure of a recirculation pump number 2 seal is indicated by: (Select the best answer.)

a. #2 seal pressure drop and seal staging flow alarm low (Unit 2 only).

b. #2 seal pressure increase and seal leakage outflow alarm hi.

c. #2 seal pressure drop and seal leakage outflow alarm hi.

d. #1 seal pressure increase and seal leakage outflow alarm hi.

ANSWER: 8

c.

.....

QUESTION: 9 POINT VALUE: **1.00** RECORD: **1950** ID: **LLE0198**
LESSON: **26-2A** Objectives: **05a,05c**

A small break LOCA has occurred on Unit 2. RPV level cannot be maintained with high pressure injection systems. The following indications are observed: (ERFIS is not available.)

RPV pressure		575 psig
Drywell temperature		
CAC-TR-4426-1B	pt.A	190°F
CAC-TR-4426-1B	pt.B	210°F
CAC-TR-4426-2B	pt.A	195°F
CAC-TR-4426-2B	pt.B	180°F

At what indicated RPV level on the Fuel Zone Level Instruments would emergency depressurization be required? (Select the correct answer.)

a. < -7.5 inches

b. < -33 inches

c. < -45 inches

d. < -57 inches

ANSWER: 9

b.

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QUESTION: 10 POINT VALUE: 1.00 RECORD: 1733 ID: LLA0053
LESSON: 20-2D Objectives: 10

The number 3 DG is in local manual and running for PMTR. During the test, the engine trips and locks out due to high lube oil temperature. While investigating the cause of the high lube oil temperature, the master/slave breaker from 2D to E3 is opened. This will: (Select the correct answer.)

a. cause a start signal to be initiated but the Diesel will not start until the lockout is manually reset.

b. cause the engine to start but to trip 45 seconds later due to the time delay associated with the high lube oil temperature trip.

c. cause the engine to start only if the Diesel Generator RTGB "CA" module is selected to "AUTO".

d. cause the engine to auto start and the generator to tie on to E-3 when the generator output is at rated voltage and frequency.

ANSWER: 10

d.

QUESTION: 11 POINT VALUE: 1.00 RECORD: 945 ID: LLE0234
LESSON: 14-2B Objectives: 22

Following an ATWS, plant conditions are as follows:

Reactor Power	15%
Reactor Level	+133 inches
Suppression Pool Temperature	71°F
SRV B21-F013E	Stuck Open
HPCI in standby alignment	

Direction has been given to terminate and prevent injection from HPCI. This can be accomplished by: (Select the correct answer.)

a. Placing HPCI Aux Oil Pump in Pull-To-Lock.

b. Depressing HPCI Turbine Trip Pushbutton.

c. Closing HPCI Injection Valve (E41-F006).

d. Depressing HPCI Manual Isolation Pushbutton.

ANSWER: 11

a.

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QUESTION: 12 POINT VALUE: 1.00 RECORD: 1928 ID: LLA0104
LESSON: 14-2D Objectives: 20,18N

Unit 1 is in COLD SHUTDOWN with RHR Loop "A" in Shutdown Cooling Mode of operation per OP-17. The status of RHR Loop "A" is:

- Pump 1C running, Pump 1A shutdown.
- Heat Exchanger bypass valve (F048A) full open.
- Outboard injection valve (F017A) throttled.
- RHR Loop "A" flow 5000 gpm.

An MST on drywell pressure transmitters results in an inadvertent Division I LPCI initiation signal. Which one of the following correctly describes the response of RHR Loop "A" to this LPCI signal: (Select the best answer.)

a. RHR pump 1C remains running, RHR pump 1A auto starts, then trips, RHR flowrate increases.

b. RHR pump 1C remains running, RHR pump 1A auto starts, RHR flowrate rises.

c. Shutdown cooling isolation valves close. RHR pump 1C trips, RHR flowrate drops to zero.

d. RHR pump 1C trips, then RHR pumps 1A and 1C auto start when the E11-F004A and E11-F004C have been manually opened, RHR flowrate drops.

ANSWER: 12

a.

QUESTION: 13 POINT VALUE: 1.00 RECORD: 1089 ID: LLA0125
LESSON: 14-2F Objectives: 16

Following an evacuation of the control room, SRV's are being operated from the remote shutdown panel. As the control switch for B21-F013B is placed to OPEN, the red indicating light for the valve illuminates. This red light indicates that: (Select the correct answer.)

a. the SRV is open by accoustic monitor indication.

b. the SRV solenoid is energized.

c. the SRV is open due to high reactor pressure.

d. the SRV is open by thermocouple indication.

ANSWER: 13

b.

.....

QUESTION: 14 POINT VALUE: 1.00 RECORD: 1673 ID: LLE0079
LESSON: 15-2C Objectives: 11E

A Loss of Coolant Accident has occurred. Plant conditions are as follows:

-Primary Containment Pressure 40 psig
-Primary Containment Oxygen 5.5%
-Primary Containment Hydrogen 6.5%
-Interruptible Instrument Air is Isolated

Primary containment is required to be vented by EOPs. The CAD nitrogen supply must be used to provide nitrogen makeup. CAD nitrogen supply system pneumatic operated valves (i.e. vaporizer inlet and outlet valves) have lost their air supply (IAI). Which one of the following is correct concerning the loss of instrument air to CAD nitrogen supply valves? (Select the correct answer.)

a. CAD vaporizer inlet and outlet valves receive a backup pneumatic supply from the CAD tanks.

b. CAD vaporizer inlet and outlet valves fail open on loss of instrument air.

c. CAD vaporizer inlet and outlet valves receive a backup pneumatic supply from the PN? system.

d. CAD vaporizer inlet and outlet valves must be manually operated to supply nitrogen to primary containment.

ANSWER: 14

a.

.....

QUESTION: 15 POINT VALUE: 1.00 RECORD: 1730 ID: LLA0052
LESSON: 19-2B Objectives: 11

Unit 2 is operating at rated power with the 'A' EHC pressure regulator in service and the 'B' pressure regulator out of service and not available. The output of the on-line EHC pressure regulator fails HIGH causing a bypass valve to open. Select the action that, if taken, will cause the bypass valve to close. (Select the correct answer.)

a. Decrease the bypass jack.

b. Decrease the load limit pot.

c. Decrease the regulator pressure setpoint.

d. Decrease the maximum combined flow pot.

ANSWER: 15

d.

.....

QUESTION: 16 POINT VALUE: 1.00 RECORD: 604 ID: LLA0127
LESSON: 20-2D Objectives: 10

Which one of the following trip and lockouts CANNOT be automatically reset to cause the Diesel Engine to auto start and run for at least 45 seconds or longer? (Select the correct answer.)

a. Overspeed.

b. Low lube oil pressure.

c. High lube oil temperature.

d. Generator differential overcurrent.

ANSWER: 16

d.

.....

QUESTION: 17 POINT VALUE: 1.00 RECORD: 003 ID: LLA0131
LESSON: 20-2D Objectives: 05

During a reactor scram caused by high drywell pressure due to loss of drywell cooling, Bus 2C fails to transfer causing the associated E-Bus to deenergize because no diesel generators auto start. Which of the following is correct concerning the Diesel Generators (DGs): (Select the correct answer.)

a. DG 3 only has failed to auto start. Immediately push the Auto Mode Start Switch on the number 3 DG. Observe that the number 3 DG output breaker closes.

b. DG 4 only has failed to auto start. Immediately push the Auto Mode Start Switch on the number 4 DG. Observe that the number 4 DG output breaker closes.

c. DGs 1 AND 3 have failed to auto start. Immediately push the Auto Mode Start Switch on the number 1 AND number 3 DGs. Observe that the number 3 DG output breaker closes.

d. DGs 2 AND 4 have failed to auto start. Immediately push the Auto Mode Start Switch on the number 2 AND number 4 DGs. Observe that the number 4 DG output breaker closes.

ANSWER: 17

d.

.....

QUESTION: 18 POINT VALUE: 1.00 RECORD: 1093 ID: LLE0239
LESSON: 26-2A Objectives: 03,05

Plant Conditions:

- Actual RPV Pressure 60 psig
- Actual RPV Water Level -20 inches
- Drywell Temperature 195°F
- Rx Building 50ft Temperature (B21-TR-5769A-Red pen) 215°F
- Scram discharge risers on six control rods ruptured
- RPS cannot be reset
- Reactor shut down
- E8 deenergized
- ERFIS is not available

During an emergency evolution, with conditions as listed above, the operating crew has just emergency depressurized the reactor due to EOP-03 guidance. Under these conditions, which of the following RTGB water level instruments is should be used to determine RPV level? (Select the correct answer.)

a. B21-N026A only

b. B21-N026A, B21-N036 and B21-N037

c. B21-N036 only

d. B21-N036 and B21-N037

ANSWER: 18

c.

.....

QUESTION: 19 POINT VALUE: 1.00 RECORD: 1570 ID: LLE0022
LESSON: 07-2K.10 Objectives: 07,09,19

Plant conditions:

Group 1 Isolation
Reactor Power 10%
Reactor Water Level +75"
Reactor Pressure 1000 PSIG
Suppression Pool Temperature 125°F
Drywell Pressure 1.3 PSIG

An EHC Pressure Regulator failure has occurred resulting in a Group 1 Isolation. The reactor has failed to scram. The crew is currently lowering Reactor Water Level to reduce power. The crew should stop lowering level when....(Select the correct answer.)

a. All SRVs are closed.

b. Suppression Pool temperature stabilizes.

c. EHC Pressure Regulator is repaired allowing the Main Condenser to become available.

d. Reactor Pressure is less than the Minimum Alternate Flooding Pressure.

ANSWER: 19

a.

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QUESTION: 20 POINT VALUE: 1.00 RECORD: 1555 ID: LLE0013
LESSON: 07-2K.01 Objectives: 17, 27

Plant conditions:

- Reactor scrammed
- RPV pressure 925 psig
- RPV water level +175 inches
- Suppression chamber pressure 16.0 psig
- Drywell pressure 17.5 psig
- Reactor recirculation pumps tripped
- Drywell coolers running
- PNS is aligned to the drywell

During a small break LOCA evolution with the above listed plant conditions present, the operating crew should: (Select the correct answer.)

a. initiate drywell and suppression chamber sprays irrespective of whether drywell coolers are running.

b. immediately initiate suppression chamber sprays then initiate drywell sprays when drywell coolers are tripped.

c. wait until drywell coolers are tripped, then initiate drywell and suppression chamber sprays.

d. spray suppression chamber until drywell sprays can be placed in service, then secure suppression chamber sprays.

QTRAK Reference Number: R237

ANSWER: 20

b.

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QUESTION: 21 POINT VALUE: 1.00 RECORD: 1537 ID: LLA0008
LESSON: 15-2A Objectives: 23

Unit 2 has been operating for 97 consecutive days during the summer months at approximately rated power. Primary containment average air temperature has slowly been rising during that time. At 6:30 pm it is reported the primary containment average air temperature is 137°F. You should: (Select the correct answer.)

a. enter AOP-14.0 and reduce temperature to less than 135°F within 4 hours or be in hot shutdown in 12 hours and cold shutdown in the following 24 hours.

b. start all the drywell coolers and verify the RBCCW system lineup. Reduce reactor power as necessary to reduce the primary containment average air temperature.

c. begin an immediate reactor shutdown. Have the plant in hot shutdown within 12 hours. Move the plant to cold shutdown within the next 24 hours.

d. enter EOP-02-PCCP, scram the reactor and begin a cooldown. Have the plant in cold shutdown within 24 hours.

ANSWER: 21

b.

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QUESTION: 22 POINT VALUE: 1.00 RECORD: 1463 ID: LLN0154
LESSON: 27-2A Objectives: 12.B

A reactor startup is in progress on Unit 1 with reactor power at 29%. A control rod at position 00 is selected and a notch withdrawal signal is applied. The control rod withdrawal begins but fails to stop at position 02. The control rod stops at position 04 and the control operator observes the select lights and the withdrawal permissive light are off. No annunciators are received. Based on these indications, which of the following actions should be taken? (Select the best answer.)

a. Insert the control rod to position 02 to reset the RWM block.

b. Insert the control rod to position 02 and issue a WR/JO on the RMCS timer.

c. Insert the control rod to position 00 and issue a WR/JO on the withdraw directional control valves.

d. Insert the control rod to position 00 and flush the collet piston annulus.

ANSWER: 22

b.

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QUESTION: 23 POINT VALUE: 1.00 RECORD: 1541 ID: LLA0012
LESSON: 15-2A Objectives: 19, 21

Unit 2 has been operating for 118 consecutive days at rated power. Suppression pool temperature has been gradually increasing during that period. With RCIC operational testing now being conducted and the B Loop of RHR in Suppression Pool Cooling, the suppression pool average temperature is reported as 98°F and very slowly increasing. You should: (Select the correct answer.)

a. continue to operate RCIC. Consider placing A Loop of RHR in suppression pool cooling. Monitor suppression pool temperature.

b. enter EOP-02-PCCP and start all available RHR loops in suppression pool cooling except RHR pumps required to assure adequate core cooling.

c. log suppression pool temperature every 5 minutes. If pool temperature exceeds 105°F, be in hot shutdown in 12 hours and cold shutdown in the following 24 hours.

d. stop RCIC testing and continue the B RHR system in the suppression pool cooling mode.

ANSWER: 23

a.

QUESTION: 24 POINT VALUE: **1.00** RECORD: **1547** ID: **LLN0007**
LESSON: **27-2B** Objectives: **15e,15f,11**

A plant shutdown is in progress with control rod insertion being performed. The last control rod from step 6B has been inserted and another control rod has been selected. The RWM display indicates as follows:

SELF TEST:OK	SEQUENCE: B2X BPWS 3	MODE:OPERATE
BLOCKS: INSERT WITHDRAW	STEP: 6B	POWER:BELOW LPSP
SR 30 -- 07 : 00		SE IB WB
IE 06 -- 39 : 14		B2X--6B
HELP	DISPLAY OFF	ETC

Based on the given information, which of the following actions should be taken to clear all the existing RWM rod blocks: (Select the correct answer.)

a. Select any control rod from Rod Sequence Checkoff Sheet, step 6B.

b. Select any control rod from Rod Sequence Checkoff Sheet, step 6A.

c. Select and withdraw control rod 06-39 to position 16.

d. Withdraw control rod 30-07 to position 04.

ANSWER: 24

c.

QUESTION: 25 POINT VALUE: 1.00 RECORD: 1542 ID: LLA0013
LESSON: 14-2D Objectives: 23

Plant conditions:

All control rods are fully inserted.
Suppression pool temperature 97°F.
B reactor recirc loop suction temp is 355°F.
MSIV's can not be opened.
RHR shutdown cooling is unavailable.
A reactor recirculation pump is stopped.

It has been determined that additional cooldown is required and that Alternate Shutdown Cooling will be used. All other methods of cooldown have failed. Using this information and the plant status provided above, which of the following statements concerning the use of alternate shutdown cooling is correct? (Select the correct answer.)

a. Alternate Shutdown Cooling CANNOT be used under the present plant conditions. Reactor pressure is too high.

b. Alternate Shutdown Cooling CANNOT be used under the present plant conditions. At least one recirculation pump is required to be operating prior to entering alternate shutdown cooling.

c. Alternate Shutdown Cooling can be used under the present plant conditions. The recirculation pump discharge valves must be closed prior to starting the RHR pump in the injection mode.

d. Alternate Shutdown Cooling can be used under the present plant conditions. Suppression pool temperature may need to be adjusted to control cooldown rate.

ANSWER: 25

a.

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QUESTION: 26 POINT VALUE: 1.00 RECORD: 1545 ID: LLA0014
LESSON: 28-2A Objectives: 23

The following conditions exist:

APRM A: 28%, LPRM inputs: 11
APRM B: 32%, LPRM inputs: 12
APRM C: 33%, LPRM inputs: 10
APRM D: BYPASSED, LPRM inputs: 9
APRM E: BYPASSED, LPRM inputs: 11
APRM F: 31%, LPRM inputs: 12

Based on these indications, which of the following actions should be taken: (Select the correct answer.)

a. Enter EOP-01 and insert a manual reactor scram.

b. Verify a half-scram on RPS Channel A. Issue a WR/JO to repair APRM C.

c. Issue WR/JO to repair APRM C and continue operation. If APRM C or D are not repaired within 2 hours, be in at least HOT SHUTDOWN within the next 6 hours.

d. Verify a half-scram on Channel A and immediately begin shutting down the reactor and be in HOT SHUTDOWN within 6 hours.

ANSWER: 26

b.

.....

QUESTION: 27 POINT VALUE: 1.00 RECORD: 1947 ID: LLN0148
LESSON: 15-2B Objectives: 11

From the following plant conditions select the one for which Secondary Containment is being maintained operable.

a. An I&C MST caused the RB supply and exhaust dampers to close and tripped all fans but neither SBGT 2A or 2B started.

b. Unit at power with all systems operable. The outer railroad door is open and a crane has stalled where it prevents closure of the outer railroad door.

c. Unit in Refuel with the RB inlet dampers under clearance for seal replacement .

d. Unit in Shutdown, RB ventilation in service, both SBGT 2A and 2B are under clearance for charcoal filter replacement.

ANSWER: 27

b.

.....

QUESTION: 28 POINT VALUE: 1.00 RECORD: 1576 ID: LLN0014
LESSON: 25-2E Objectives: 09C

Unit 2 has been operating at rated power for several days. PT 14.1 is being performed. The control operator (CO) selects control rod 22-31 and notices all "A" level LPRMs for those 4 LPRM strings are inop. Which one of the following will occur if the CO attempts to notch out the selected control rod? (Select the correct answer.)

a. RBM "A" will give a block while RBM "B" will not.

b. RBM "B" will give a block while RBM "A" will not.

c. Both RBM "A" and RBM "B" will cause a block.

d. Neither RBM "A" or RBM "B" will cause a block.

ANSWER: 28

d.

QUESTION: 29 POINT VALUE: **1.00** RECORD: **1874** ID: **LLE0166**
LESSON: **07-2K.06** Objectives: **02,05**

Plant Conditions:

MSIV's closed due to High Radiation
Reactor pressure 950 psig
Reactor Water Level -60 inches on the B21-N036
All Rods In
HPCI Inop
All SRV Control Power lost

Given the above conditions, the crew should: (Select the correct answer.)

a. terminate injection to the reactor until reactor pressure is below the Minimum Alternate Flooding Pressure.

b. maximize RCIC flow and maintain reactor pressure at its current value until SRV's can be restored to operation.

c. bypass MSIV interlocks and reopen MSIV's to depressurize the reactor to the Main Condenser.

d. allow reactor pressure to be controlled by SRV cycling. When SRV's are returned to service, open 7 SRV's.

ANSWER: 29

c.

** "CREW D RO" ANSWER KEY **

QUESTION: 30 POINT VALUE: **1.00** RECORD: **1535** ID: **LLA0006**
LESSON: **14-2D** Objectives: **15**

The plant is in Alternate Shutdown Cooling using the "A" RHR pump following an accident. Reactor pressure is 110 psig and reactor water level is +255 inches. It has just been determined the plant has cooled down 27°F in the last 15 minutes. Under these conditions you should: (Select the correct answer.)

a. continue the cooldown at the present rate. The cooldown rate is acceptable.

b. increase suppression pool temperature by bypassing the RHR heat exchanger on the RHR loop in suppression pool cooling.

c. throttle open the E11-F017A until reactor pressure increases to 164 psig.

d. lower reactor vessel water level to inhibit flow through the vessel into the suppression pool.

ANSWER: 30

b.

.....

** END OF "CREW D RO" ANSWER KEY **

MASTER

** "NRC D2 SSA15 RO" ANSWER KEY **

(OPEN REFERENCE EXAM CREATED FROM STATICS OPEN REFERENCE EXAM BANK)

EXAM NAME: NRC D2 SSA15 RO

EXAM DATE: 04/28/92

CLASS: NRC/LOR EXAM

COURSE CODE: FOA24B

PREPARED BY: L DUNLAP

NUMBER OF QUESTIONS: 15

TOTAL POINTS: 15.00

80% POINTS: 12.00

70% POINTS: 10.50

TIME LIMIT: 1.00 HOURS

ESTIMATED TIME TO COMPLETE THE EXAM: **32.00 MINUTES**

REFERENCES TO BE PROVIDED TO THE STUDENT:

** "NRC D2 SSA15 RO" ANSWER KEY **

** "NRC D2 SSA15 RO" ANSWER KEY **

QUESTION: 1 POINT VALUE: 1.00 RECORD: 465 ID: LSA1519
LESSON: 14-2F Objectives: 11h

Concerning the present status of SRV B21-F013B: (select the correct answer)

a. SRV B has auto opened on high RPV pressure, but should have closed.

b. SRV B has auto opened on high RPV pressure, and will close at a lower RPV pressure.

c. SRV B has been manually opened, but should have closed.

d. SRV B has been manually opened, and will close at a lower RPV pressure.

ANSWER: 1

c.

.....

QUESTION: 2 POINT VALUE: 1.00 RECORD: 392 ID: LSA1508
LESSON: 22-B Objectives: 14a,15a,16a

What action(s) should be taken concerning the NSW System? (Select the best answer.)

a. Shut down all but one NSW pump.

b. Leave the system in its current status and attempt to clear the intake structure.

c. Secure all NSW pumps.

d. Cross-connect the NSW header and CSW header to try and restore NSW header pressure.

ANSWER: 2

~~b.~~ Answer Changed To "c"

per AOP-18 rev 7 Suppl Action 14

.....

QUESTION: 3 POINT VALUE: 1.00 RECORD: 390 ID: LSA1506
LESSON: 22-B Objectives: 10

Concerning the SW-V103 and SW-V106 valves, under current conditions.... (Select the best answer).

a. Both valves should have gone closed.

b. Both valves should have closed to the 19% open position.

c. The SW-V106 ONLY should have closed to the 19% open position.

d. Valve status is correct for plant conditions.

ANSWER: 3

d.

.....

QUESTION: 4 POINT VALUE: 1.00 RECORD: 388 ID: LSA1504
LESSON: 22-B Objectives: 14a,16a

Under current plant conditions, if both the E3 and E4 diesel generators were to start then the required actions would be: (Select the best answer.)

a. trip one diesel generator even if it results in the loss of one E bus, allow the other DG to carry its E bus until it trips.

b. allow both diesels to run; closely monitor temperatures and take further actions only if required.

c. valve in fire protection water to the diesel cooling system.

d. trip both diesel generators even if it results in the loss of E buses.

ANSWER: 4

d.

.....

QUESTION: 5 POINT VALUE: 1.00 RECORD: 397 ID: LSA1513
LESSON: 22-B Objectives: 10,11e,15a

Considering current plant conditions, Service water to TBCCW isolation valves (SW-V3 and SW-V4): (Select the best answer.)

a. Have NOT responded properly. Valves should be closed using RTGB controls.

b. Have NOT responded properly. Valves must be closed by manual operation.

c. Have responded properly. Valves can be full closed by using RTGB controls.

d. Have responded properly. Valves can be full closed only by manual operation.

ANSWER: 5

c.

.....

QUESTION: 6 POINT VALUE: 1.00 RECORD: 393 ID: LSA1509
LESSON: 15-E Objectives: 04,12j

From the choices below, select the one that best describes the status of the group isolations:

a. All group isolations occurred as required.

b. Group 1 did not fully isolate as required.

c. Group 2 did not fully isolate as required.

d. Group 3 did not fully isolate as required.

ANSWER: 6

c.

.....

QUESTION: 7 POINT VALUE: 1.00 RECORD: 395 ID: LSA1511
LESSON: 07-M Objectives: 8f

A loss of condenser vacuum has caused a turbine trip and reactor scram. If prior to a turbine trip, vacuum starts to decrease, in which one of the following cases could increasing reactor power improve condenser vacuum to prevent a turbine trip? (Select the best answer.)

a. Low seal steam header pressure.

b. Generator load was being reduced.

c. High AOG System outlet flow.

d. Increasing SJAE discharge pressure.

ANSWER: 7

c

per AOP-37 and APP-UA-23-2-1

.....

QUESTION: 8 POINT VALUE: 1.00 RECORD: 389 ID: LSA1505
LESSON: 14-D Objectives: 09, 10,18G

Under current plant conditions, to lineup fire protection water to the "A" RHR heat exchanger, the E11-F068A keylocked bypass switch must be placed in bypass to: (Select the best answer.)

a. bypass the low NSW header pressure isolation signal.

b. bypass the low CSW header pressure isolation signal.

c. to allow starting the RHRSW pump without E11-F068A being opened.

d. to allow opening the E11-F068A without an RHRSW booster pump running.

ANSWER: 8

d.

.....

QUESTION: 9 POINT VALUE: 1.00 RECORD: 399 ID: LSA1515
LESSON: 15-A Objectives: 15g,21b

The major contributor to the rise in drywell pressure is: (Select the best answer.)

a. LOCA lockout of the drywell coolers.

b. the loss of Instrument/Service Air System.

c. the Recirculation Pump Dual Seal failure.

d. the RBCCW System failure.

ANSWER: 9

c.

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QUESTION: 10 POINT VALUE: 1.00 RECORD: 401 ID: LSA1517
LESSON: 14-B Objectives: 07,11

Given current plant conditions, if the HPCI HIGH WATER LEVEL SIGNAL RESET pushbutton was depressed, HPCI would:

a. Auto start and inject to the RPV without any other operator action.

b. Auto start, but not inject, unless injection valve E41-F006 was opened.

c. Not auto start since RPV level is above the high level trip setpoint.

d. Not auto start until RPV level dropped to the Level 2 initiation setpoint.

ANSWER: 10

a.

.....

QUESTION: 11 POINT VALUE: 1.00 RECORD: 396 ID: LSA1512
LESSON: 10-A Objectives: 16a

Which of the following actions is correct concerning the loss of cooling to the Reactor Recirculation Pump "2B" Seal Cooler? (Select the best answer.)

a. Pump should be immediately tripped.

b. The seal staging valves should be closed and the pump shutdown within 90 seconds.

c. Pump should be shutdown if either seal temperature exceeds 200°F.

d. Pump can be operated indefinitely provided seal injection flow is available.

ANSWER: 11

c.

.....

QUESTION: 12 POINT VALUE: 1.00 RECORD: 394 ID: LSA1510
LESSON: 07-K.05 Objectives: 11

Which of the following systems can be used for RPV pressure control? (Select the best answer.)

a. SRV's only.

b. SRV's and turbine bypass valves after re-opening the MSIV's per the Hard Card.

c. SRV's and RCIC in the pressure control mode.

d. SRV's and HPCI in the pressure control mode.

ANSWER: 12

a.

.....

QUESTION: 13 POINT VALUE: 1.00 RECORD: 402 ID: LSA1518
LESSON: 10-A Objectives: 16g

The "2A" Recirculation Pump Seal staging valve has automatically closed because: (Select the best answer.)

a. Loss of Instrument Air supply.

b. Loss of PNS supply.

c. Trip of Recirculation Pump drive motor breaker.

d. High drywell pressure signal.

ANSWER: 13

c.

.....

QUESTION: 14 POINT VALUE: 1.00 RECORD: 400 ID: LSA1516
LESSON: 07-K.01 Objectives: 11,17

Under the current plant conditions, venting the drywell for pressure control would be allowed: (Select the best answer.)

a. per OP-10, SBGT System.

b. when drywell pressure approaches 70 psig.

c. per OP-10, SBGT System after overriding the Group 6 isolations.

d. when suppression chamber exceeds 13 psig.

ANSWER: 14

b.

.....

QUESTION: 15 POINT VALUE: 1.00 RECORD: 398 ID: LSA1514
LESSON: 07-K.01 Objectives: 17

Drywell pressure and temperature are increasing. Which of the following actions can be taken to control drywell parameters with present plant conditions? (Select the best answer.)

a. Place the drywell chiller in service.

b. Line up the CSW system to the RBCCW heat exchangers.

c. Start the standby RBCCW pump.

d. Line up fire protection to the RBCCW heat exchangers.

ANSWER: 15

d.

.....

** END OF "NRC D2 SSA15 RO" ANSWER KEY **

MASTER

** "NRC D1 SSA13 RO" ANSWER KEY **

(OPEN REFERENCE EXAM CREATED FROM STATICS OPEN REFERENCE EXAM BANK)

EXAM NAME: NRC D1 SSA13 RO

EXAM DATE: 04/28/92

CLASS: NRC/LOR EXAM

COURSE CODE: ROA24E

PREPARED BY: L DUNLAP

NUMBER OF QUESTIONS: 15

TOTAL POINTS: 15.00

80% POINTS: 12.00

70% POINTS: 10.50

TIME LIMIT: 1.00 HOURS

ESTIMATED TIME TO COMPLETE THE EXAM: **43.00 MINUTES**

REFERENCES TO BE PROVIDED TO THE STUDENT:

** "NRC D1 SSA13 RO" ANSWER KEY **

QUESTION: 1 POINT VALUE: 1.00 RECORD: 339 ID: LSA1322
LESSON: 17-2B Objectives: 13

During the current plant conditions, regarding Reactor Feed Pump "A":

a. A total loss of UPS will lock up the "A" RFP at its present speed.

b. The steam supply to the "A" RFP is from cross around steam.

c. Closing the "A" RFP recirc. valve will decrease the RFP speed.

d. If a steam flow transmitter fails downscale, "A" RFP speed will decrease.

ANSWER: 1

c.

.....

QUESTION: 2 POINT VALUE: 1.00 RECORD: 335 ID: LSA1318
LESSON: 17-2C Objectives: 08

The long term effect of the current transient will be a reactor power:

a. Decrease due to decreasing pressure.

b. Increase due to loss of feedwater heating.

c. Decrease due to recirc. pump runback.

d. Increase due to increasing pressure.

ANSWER: 2

b.

.....

** "NRC D1 SSA13 RO" ANSWER KEY **

QUESTION: 3 POINT VALUE: 1.00 RECORD: 337 ID: LSA1320
LESSON: 19-2B Objectives: 04

Neither of the position indicating lights for MS-BPV-2 are illuminated. Which of the following is the correct statement concerning the BPV?

a. The valve is closed; the closed indication has failed.

b. The valve is open; the open indication has failed.

c. The valve has not yet opened far enough to illuminate the open indication.

d. Indicates a blown fuse in the indicating circuit.

ANSWER: 3

c.

.....

QUESTION: 4 POINT VALUE: 1.00 RECORD: 323 ID: LSA1305
LESSON: 27-2A Objectives: 11

Regarding the LPRMs associated with rod 26-19 and given current plant conditions, which of the following statements would be correct for the RBM system?

a. All LPRMs in each of the four LPRM strings will input to RBM for Rod Block generation.

b. RBM system is INOP because an "A" level LPRM is down scale and automatically bypassed.

c. The downscale LPRM at level "A" will only affect the RBM channel "A" operation.

d. The downscale LPRM at level "A" will not affect the RBM system operation.

ANSWER: 4

d.

.....

QUESTION: 5 POINT VALUE: **1.00** RECORD: **326** ID: **LSA1308**
LESSON: **10-2A** Objectives: **17**

Which of the following best describes the status of the recirculation system?

a. Recirc. pumps ran back in response to a turbine transient.

b. Recirc. pumps ran back in response to a water level transient.

c. Recirc. pump speeds cannot be increased above their present speed.

d. Recirc. pump speeds can be increased above their present speed.

ANSWER: 5

c.

.....

QUESTION: 6 POINT VALUE: **1.00** RECORD: **327** ID: **LSA1309**
LESSON: **17-2B** Objectives: **09**

If the "A" narrow range water level transmitter fails low, the plant response over the next several minutes will be:

a. Plant will stabilize with level controlling higher than the level setpoint.

b. Reactor scram on low level.

c. Plant will stabilize with level controlling lower than the level setpoint.

d. Reactor water level will continuously increase.

ANSWER: 6

b.

.....

QUESTION: 7 POINT VALUE: 1.00 RECORD: 336 ID: LSA1319
LESSON: 10-2A Objectives: 15

Given the current plant conditions, if the #2 seal for reactor recirc. pump "A" were to fail:

a. Seal leakage will rise to 60 qpm.

b. Recirc. pump will trip due to low seal flow.

c. CRD purge flow will isolate on high flow.

d. Drywell equipment drain tank Hi alarm will sound.

ANSWER: 7

a.

a. is correct - with both seals failed the only restriction is by seal design limits per SD.

b. is incorrect - no pump trip on low seal flow

c. is incorrect - no CRD purge flow isolation on high flow

d. is incorrect - with both seals failed, the leakage will be directly to the Drywell to the floor drains, not to equipment drains.

.....

QUESTION: 8 POINT VALUE: 1.00 RECORD: 338 ID: LSA1321
LESSON: 28-2A Objectives: 05

For the present plant conditions, what is the maximum power allowed by RPS?

a. 113.5%

b. (.66W + 64)%

c. 30%

d. 120%

ANSWER: 8

b.

.....

QUESTION: 9 POINT VALUE: 1.00 RECORD: 319 ID: LSA1301
LESSON: 19-2B Objectives: 04

If, under the current plant conditions, the maximum combined flow limit is set to zero, which of the following statements best describes the EHC system response:

a. All bypass and control valves will close.

b. All remaining bypass valves will open sequentially.

c. Pressure Set Regulator "B" will control reactor pressure.

d. The Bypass Valve Jack is preventing opening any bypass valves.

ANSWER: 9

a.

.....

QUESTION: 10 POINT VALUE: 1.00 RECORD: 333 ID: LSA1316
LESSON: 09-2B Objectives: 06

If reactor power had been 45% when the transient occurred, what would be the response of the CRD system?

a. Drive water flow will increase.

b. Cooling water header pressure will increase.

c. Suction filter D/P will decrease.

d. CRD total system flow would increase.

ANSWER: 10

d.

.....

QUESTION: 11 POINT VALUE: 1.00 RECORD: 320 ID: LSA1302
LESSON: 12-2A Objectives: 09

Given the current plant conditions, what component is the source of leakage into the RBCCW system?

a. Fuel Pool "A" heat exchanger

b. RWCU non-regenerative heat exchanger.

c. Reactor Recirc. pump "A" cooler.

d. Service water.

ANSWER: 11

b.

.....

QUESTION: 12 POINT VALUE: 1.00 RECORD: 321 ID: LSA1303
LESSON: 15-2E Objectives: 04

Given the current plant conditions, what is the status of the RWCU system?

a. Isolated due to high radiation.

b. Isolated due to high differential flow.

c. Pumps have tripped on high leakage.

d. Pumps have tripped on low flow.

ANSWER: 12

b.

a. is incorrect - no such isolation on Hi Rad

b. is correct

c. is incorrect - no such isolation on high leakage

d. is incorrect - pumps have tripped due to PCIS isolations not fully open. This occurs at < 90% open and should occur prior to the pump trip signal on low pump flow.

QUESTION: 13 POINT VALUE: **1.00** RECORD: **331** ID: **LSA1314**
LESSON: **15-2C** Objectives: **11**

Given the current plant conditions, what effect can be expected from the CAC/CAD system?

a. Reactor building to suppression pool vacuum breakers will open.

b. Nitrogen supply will overcome loss to SBGT system.

c. CAC system will isolate.

d. Oxygen concentration in the primary containment will remain the same.

ANSWER: 13

a.

.....

QUESTION: 14 POINT VALUE: **1.00** RECORD: **334** ID: **LSA1317**
LESSON: **11-2A** Objectives: **07**

**** Note: This question is not related to the scenario. ****

During normal full power operation a QA inspector notices a difference in the RWCU system total flow and combined demineralizer flows with the system data flow indicating 5 gpm, which of the following is the most probable cause for this difference ?

a. Difference in density between the measured flows.

b. Indicative of a leak past the RWCU reject valve G31-F033.

c. Due to system head loss.

d. Difference in pressure between system inlet and outlet pressure.

ANSWER: 14

a.

.....

** "NRC D1 SSA13 RO" ANSWER KEY **

QUESTION: 15 POINT VALUE: **1.00** RECORD: **332** ID: **LSA1315**
LESSON: **15-2A** Objectives: **14**

**** NOTE: This question is not related to the scenario ****

During normal full power operation, how will the RBCCW system respond to a loss of the following electrical busses?

2XJ	2XL
2XK	2XM

a. RBCCW system loads will be decreased.

b. RBCCW flow control valves will fail open.

c. RBCCW temperature control valve will fail "as is".

d. RBCCW pump "2B" will trip.

ANSWER: 15

a.

.....

** END OF "NRC D1 SSA13 RO" ANSWER KEY **

CAROLINA POWER AND LIGHT COMPANY

BRUNSWICK STEAM ELECTRIC PLANT

MASTER

LICENSED OPERATOR REQUALIFICATION

STATIC SIMULATOR SCENARIO

LOR - SSSA15

REVISION : 1

DEVELOPER: W. E. Gaynor DATE: 4/3/92

SME REVIEWED BY: L. Dump DATE: 4/3/92

MANAGER LICENSED TRAINING: W. B. Jones DATE: 4/3/92

STATIC SIMULATOR SCENARIO

I. TITLE: DUAL RECIRC PUMP SEAL FAILURE, MAJOR OIL SPILL, LOSS OF CSW, NSW AND CIRC WATER

II. PURPOSE:

A. The purpose of this exercise is to place the plant in a configuration that requires the operator to address system operation and to execute the emergency operating procedures during a dual recirc pump seal failure with a loss of all CSW, NSW and Circ Water.

III. DESCRIPTION:

A. The plant was operating at 100% steady state power near the end of cycle.

B. The 'A' Recirc pump shaft will seize resulting in a trip of the pump and a dual recirc pump seal failure.

C. Concurrently, a major oil spill in the Cape Fear River will make its way into the intake structure for both Unit 1 and Unit 2 resulting in a loss of CSW, NSW and Circ Water.

D. A failure of the Group 2 isolation valves will also occur.

IV. SIMULATOR SETUP:

A. Initialize to IC-14, 100% steady state power, EOC.

B. Advance all recorders/charts to clear any indication of previous simulator transients.

C. Advance all printers and remove all paper.

D. ERFIS/SPDS Setup

1. First Console

a. Display 100

2. Second Console

a. Display 310

3. STA Console

a. Display 100

E. Insert the following:

FUNC	SYS	PG	LN	DESCRIPTION	VALUE	TIME
DMAL	XY	1	J	DEFEAT OF GROUP 2 ISOLATION	N/A	00:00:00
DMAL	AI	1	A	INST AIR RUPT DNSTR OF DRYERS	5%/0 MIN	00:02:00
DMAL	CN	1	D	LOSS OF VACUUM	999999/6 MIN	00:01:00
DMAL	CW	1	A	NSW RUPTURE	100%/0 MIN	00:01:00
DMAL	CW	1	B	CSW RUPTURE	100%/0 MIN	00:01:00
DMAL	RC	1	D	'A' RECIRC PMP SHAFT SEIZURE	N/A	00:00:30
DMAL	RC	1	M	RECIRC PUMP A DUAL SEAL FAILURE	N/A	00:00:40
SWCH	1	5	M	E11-C002A (RHR PUMP 2A) STOP	SET	00:00:00
SWCH	4	21	I	AIR COMPRESS D STOP	SET	00:02:00
LAMP	1	5	I	'A' RHR PMP GREEN	RESET	00:00:00
LAMP	1	5	J	'A' RHR PMP WHITE	RESET	00:00:00
LAMP	4	37	C	COND B-S VLVS FLTR HI DP G	SET	00:00:00
ANNS	2	9	O	MSIV PIT HIGH TEMPERATURE	SET	00:00:00
ANNS	4	19	E	CW A SCREEN dP HI	SET	00:00:00
ANNS	4	19	F	SW A SCREEN dP HI	SET	00:00:00
ANNS	4	19	O	CW B SCREEN dP HI	SET	00:00:00
ANNS	4	20	F	AIR COMP D TRIP	SET	00:00:00
ANNS	4	20	G	AIR COMP A COOLING WTR TEMP HIGH	SET	00:00:00

FUNC	SYS	PG	LN	DESCRIPTION	VALUE	TIME
ANNS	4	20	H	AIR COMP C COOLING WTR TEMP HIGH	SET	00:00:00
ANNS	4	20	I	CW C SCREEN dP HI	SET	00:00:00
ANNS	4	20	J	SW B SCREEN dP HI	SET	00:00:00
ANNS	4	21	C	CW D SCREEN dP HI	SET	00:00:00
ANNS	4	21	K	AIR COMP B COOLING WTR TEMP HIGH	SET	00:00:00
ANNS	5	11	B	CW DEBRIS FILTER HIGH DELTA P	SET	00:00:00
METR	4	9	B	COND A-N CW DIFF PRESS	0.45	00:00:00
METR	4	9	C	COND A-S CW DIFF PRESS	0.50	00:00:00
METR	4	9	D	COND B-N CW DIFF PRESS	0.40	00:00:00
METR	4	9	E	COND B-S CW DIFF PRESS	0.55	00:00:00

F. Place a red cap on the "2A" RHR pump.

G. Take the simulator out of FREEZE.

H. Turn on the malfunction timer.

I. When the reactor scrams, perform the following:

1. Place the mode switch to shutdown.
2. Run the flow controller for the 'B' Recirc pump to 10%.
3. Place the feedwater level controller to +170 inches.
4. When level increases to +170 inches, trip the 'A' feedpump.
5. Place the MSIV control switches to "closed".

6. Place the '2A', '2B', and '2C' air compressors to "off".

7. When RPV pressure rises above 1050 psig, open SRV "B".

J. When drywell pressure is above 3 psig and RPV level is less than 200", place the simulator in FREEZE.

K. Return the '2A', '2B' and '2C' air compressor control switches to "AUTO". Place the "B" SRV control switch to CLOSE.

L. Print out a hard copy of ERFIS Display 310 and place it over the respective console. (This is necessary because the ERFIS Trend Displays will continue to advance when the simulator is in Freeze.)

M. Lay out the reactor scram EOP flowchart and mark off the following steps as indicated below:

001, 002, 003-Yes, 004-No, 011, 012, 013, 014, 015-Yes, 045-Yes, 046-Yes, 047-Yes, 048-No, 050-Yes, 052.

V. EXAMINATION QUESTIONS:

The following questions are available for use with this Static Scenario:

LSA1501 - LSA1518

V. PRE-EXAMINATION BRIEFING:

A. General

1. This examination was designed to evaluate your knowledge of plant systems, integrated plant operations, and instrumentation and controls through diagnosis of the frozen simulator.

2. You will be provided with adequate time to walkdown the RTGB and backpanels in the simulator.

3. During this examination you are to assume that you are on-shift and the current transient was initiated during your shift.

B. Initial Plant Conditions

1. Prior to the event, the plant was operating at near rated conditions. The plant was in a normal operating line-up for this power.

2. The '2A' RHR pump was tagged out for maintenance.

C. Scenario Conditions

1. A failure of the '2A' recirc pump has occurred.

2. Shortly after the recirc pump failure, a major oil spill in the Cape Fear River has made its way to the BSEP intake structure fouling the entire intake structure affecting both Unit 1 and Unit 2.

3. The reactor has scrammed and the reactor scram EOP has been entered.

4. No other EOP actions have been taken.

D. Procedural Compliance

1. All applicable procedures have been executed correctly. The procedures executed are correctly marked through the steps being executed at the time the simulator was placed in the freeze mode. All procedures and flowcharts are available for your use.

2. The information provided in this briefing is all of the information the examiner is allowed to provide.

CAROLINA POWER AND LIGHT COMPANY

BRUNSWICK STEAM ELECTRIC PLANT

MASTER

LICENSED OPERATOR REQUALIFICATION

STATIC SIMULATOR SCENARIO

LOR - SSSA13

REVISION : 6

DEVELOPER: W S Bowdon DATE: 4/3/92

SME REVIEWED BY: L Demp DATE: 4/3/92

MANAGER LICENSED TRAINING: [illegible] DATE: 4/3/92

STATIC SIMULATOR SCENARIO

I. TITLE: MAIN TURBINE LUBE OIL LEAK/TURBINE TRIP RBCCW-RWCU LEAK

II. PURPOSE:

A. The purpose of this exercise is to place the plant in a configuration where conditions of a main turbine lube oil leak causes a main turbine trip with a concurrent leak in the RWCU system.

III. DESCRIPTION:

A. The plant is operating at approximately 25% reactor power when a leak in the main turbine lube oil system occurs.

B. The main turbine trips, but since reactor power is low enough, a scram signal is not generated.

C. A leak develops between the RWCU and RBCCW system causing high radiation in the RBCCW system.

D. The Standby Gas Treatment system experiences a spurious start signal.

IV. SIMULATOR SETUP:

A. Initialize to IC-08, i.e., 25% power, turbine off line at 1800 rpms.

B. Advance all recorders/charts to clear any indication of previous simulator transients.

C. Advance all printers and remove all previous reports.

D. SPDS Setup

1. First Console

a. Call up the RPV control screen (No. 210)

2. Second Console

a. Call up the plant variables screen (No. 100)

E. Insert the following:

FUNC	SYS	PG	LN	DESCRIPTION	STATUS	TIME
DMAL	MS	2	E	LOSS OF TURBINE BRG OIL PRESS		00:00:00
DMAL	RW	1	I	RBCCW HIGH RAD	100/ 20 MIN	00:00:00
DMAL	CA	1	E-1	INADVERTENT INITIATION OF SBGT		00:02:00
DMAL	NB	1	A	FUEL CLAD LEAK	5%/ 0 MIN	00:00:00
DMAL	RC	1	J	(A) RECIRC SEAL #1	100%, 0 MIN	00:00:00
ANNS	2	2	L	CLEAN UP LEAK HIGH	SET	00:00:00
ANNS	2	3	D	CLEAN UP LEAK HIGH HIGH	SET	00:00:00
ANNS	5	1	F	RBCCW LIQUID PROCESS RAD HIGH	SET	00:00:00

F. Take the simulator out of FREEZE.

G. Close N2 supplies CAC V4, V5, V6 ON XU-51 for inerting (this will allow the SBGT to lower DW pressure to near 0psig).

H. Synchronize main generator to the grid, pickup available load, then turn on the malfunction timer.

I. Reopen N2 supplies prior to next step.

J. **FREEZE** the simulator after RWCU isolates, SBGT flow > N2 flow and Torus Pressure is -0.4 psig (SBGT flow and Torus Pressure required by question A1314).

K. Advance the following charts to draw a straight line:

Main Steam Line Rad Monitor
SJAE Rad Monitor
Stack Rod Monitor

V. EXAMINATION QUESTIONS:

The following questions are available for use with Static Scenario:

LSA1301 - LSA1322

V. PRE-EXAMINATION BRIEFING:

A. General

1. This examination was designed to evaluate your knowledge of plant systems, integrated plant operations, and instrumentation and controls through diagnosis of the frozen simulator.

2. You will be provided with adequate time to walkdown the RTGB and backpanels in the simulator.

3. During this examination you are to assume that you are on-shift and the current transient was initiated during your shift.

B. Initial Plant Conditions

1. Prior to the transient the reactor was operating at approximately 25% power. The generator had just been synchronized to the grid.

2. The DW is being inerted to reduce oxygen concentration.

C. Scenario Conditions

1. The plant has experienced a transient resulting from a fault in the main turbine lube oil system.

D. Procedural Compliance

1. All applicable procedures have been executed correctly. The procedures executed are correctly marked through the steps being executed at the time the simulator was placed in the freeze mode. All procedures and flowcharts are available for your use.

2. The information provided in this briefing is all of the information the examiner is allowed to provide.

** "NRC B2 SSA03 SRO" ANSWER KEY **

(OPEN REFERENCE EXAM CREATED FROM STATICS OPEN REFERENCE EXAM BANK)

EXAM NAME: NRC B2 SSA03 SRO

EXAM DATE: 04/14/92

CLASS: NRC/LOR EXAM

COURSE CODE: ROA24B

PREPARED BY: L DUNLAP

MASTER

NUMBER OF QUESTIONS: 15

TOTAL POINTS: 15.00

80% POINTS: 12.00

70% POINTS: 10.50

TIME LIMIT: 1.00 HOURS

ESTIMATED TIME TO COMPLETE THE EXAM: **50.00 MINUTES**

REFERENCES TO BE PROVIDED TO THE STUDENT:

** "NRC B2 SSA03 SRO" ANSWER KEY **

** "NRC B2 SSA03 SRO" ANSWER KEY **

QUESTION: 1 POINT VALUE: 1.00 RECORD: 272 ID: LSA0302
LESSON: 15-2A Objectives: 16

Under the current plant conditions, what would be the expected response of the primary containment to a subsequent LOCA condition:

a. Torus pressure rises and SP temperature remains constant.

b. Torus and drywell will function properly.

c. Torus pressure will be lower than drywell pressure.

d. Torus pressure will remain equalized with drywell pressure.

ANSWER: 1

d.

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QUESTION: 2 POINT VALUE: 1.00 RECORD: 290 ID: LSA0320
LESSON: 10-2A Objectives: 02

Given current plant conditions, in order to exit the instability region, which of the following must be performed?

a. Reset the reactor recirculation M/G set lock-outs and start the tripped pump.

b. Insert control rods to reduce power to below the 80% rod line.

c. Scram the reactor.

d. Increase "A" reactor recirculation pump speed using local manual control of the scoop tube.

ANSWER: 2

b.

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** "NRC B2 SSA03 SRO" ANSWER KEY **

QUESTION: 3 POINT VALUE: 1.00 RECORD: 287 ID: LSA0317
LESSON: 10-2A Objectives: 33

Based on the scenario conditions, the most limiting condition of operation:

a. Requires an immediate plant shutdown.

b. Places the plant in a 2 hour LCO.

c. Places the plant in a 6 hour LCO.

d. Places the plant under the requirements of Technical Specification 3.0.3.

ANSWER: 3

b.

a. is incorrect - not a valid choice for the circumstances

b. is correct - 2 hours to action but 12 hours to Hot S/D due to only 1 recirc pump running.

c. is incorrect - not a valid choice for the circumstances

d. is incorrect - T.S. 3.6.4.1.b allows one vacuum breaker inoperable and open requiring an 8 hour surveillance then 12 hrs to Hot S/D or enter T.S. 3.6.2.1.c on exceeding Torus to Drywell Leakage requiring < 212°F and forcing 3.0.3 actions.

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QUESTION: 4 POINT VALUE: 1.00 RECORD: 280 ID: LSA0310
LESSON: 17-2B Objectives: 06

Based on control room indications, which of the following is the most likely cause of the RPV level decrease transient?

a. Reactor Recirculation trip.

b. Loss of steam flow signal to the feed water level control circuitry.

c. Feed pump control failure.

d. Reactor Recirculation Pump runback.

ANSWER: 4

c.

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QUESTION: 5 POINT VALUE: 1.00 RECORD: 459 ID: LSA0325
LESSON: 10-2A Objectives: 17b

The first RPV level rise as indicated on ERFIS was due to: (select the correct answer)

a. Recirc pump runback.

b. Recirc pump B speed increase.

c. Feed pump control failure.

d. Recirc pump trip.

ANSWER: 5

a.

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QUESTION: 6 POINT VALUE: **1.00** RECORD: **460** ID: **LSA0326**
LESSON: **10-2A** Objectives: **30e**

The second RPV level rise as indicated on ERFIS was due to: (select the correct answer)

a. Recirc pump runback.

b. Recirc pump B speed increase.

c. Feed pump control failure.

d. Recirc pump trip.

ANSWER: 6

d.

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QUESTION: 7 POINT VALUE: **1.00** RECORD: **276** ID: **LSA0306**
LESSON: **10-2A** Objectives: **30**

For the current plant conditions, without further operator actions, what will happen to the Recirculation System?

a. One M-G set will trip automatically.

b. Both M-G set speeds will remain constant.

c. One M-G set will lower in speed.

d. One M-G set will rise in speed.

ANSWER: 7

b.

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QUESTION: 8 POINT VALUE: 1.00 RECORD: 461 ID: LSA0327
LESSON: 15-2F Objectives: 9d

Which of the following describes the current status of the Standby Gas Treatment system? (select the correct answer)

a. Both SBGT trains are operating properly.

b. Only SBGT train A is operating properly.

c. Only SBGT train B is operating properly.

d. Neither SBGT train is operating properly.

ANSWER: 8

b.

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QUESTION: 9 POINT VALUE: 1.00 RECORD: 277 ID: LSA0307
LESSON: 14-2C Objectives: 15

Suppose that the PCIS Group 5 steam line flow high instrumentation failed to operate. With this failure:

a. The Manual Isolation System B pushbutton should be depressed.

b. If the E51-F007 and F008 were manually closed, they would open on an RCIC initiation.

c. The system should still automatically isolate from steam leak detection.

d. The RCIC turbine would trip on a non-isolation signal.

ANSWER: 9

c.

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QUESTION: 10 POINT VALUE: **1.00** RECORD: **462** ID: **LSA0328**
LESSON: **10-2A** Objectives: **16g,17**

Concerning the status of M-G set 2B, if no operator action is taken. (select the correct answer)

a. Continued operation of M-G set 2B will result in drive motor damage due to excessive current.

b. Continued operation of M-G set 2B will result in generator damage due to excessive speed.

c. Continued operation of M-G set 2B will result in fluid coupler damage due to excessive oil temperature.

d. Continued operation of M-G set 2B will have no adverse effects on the M-G set.

ANSWER: 10

d.

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QUESTION: 11 POINT VALUE: **1.00** RECORD: **463** ID: **LSA0329**
LESSON: **07-2K.02** Objectives: **11,14**

Given current plant conditions, which of the following actions is correct concerning Reactor Building HVAC: (select the correct answer)

a. Should be restored to operation per OP-37.1.

b. Should be restored to operation per SEP-04.

c. Cannot be restored to operati . until Reactor Building Vent radiation is less than 4 mr/hr.

d. Should not be restored to operation until EOP-03-SCCP can be entered.

ANSWER: 11

a.

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QUESTION: 12 POINT VALUE: 1.00 RECORD: 464 ID: LSA0330
LESSON: 15-2E Objectives: 4f,12f

Cocerning the current status of PCIS, group 6: (select the correct answer)

a. Is properly isolated. Containment Atmosphere Monitoring has been restored to operation.

b. Is responding correctly, the isolation is overridden by CAC-CS-5519 in Override.

c. Is not properly isolated. An isolation condition is present without complete isolation.

d. Is responding correctly. No group 6 isolation condition currently exists.

ANSWER: 12

c.

QUESTION: 13 POINT VALUE: **1.00** RECORD: **282** ID: **LSA0312**
LESSON: **14-2D** Objectives: **18**

**** NOTE: This question is not related to the scenario ****

With a LOCA signal present, a failure of breaker AI5 (DG 3 output breaker), and a loss of power to E3 occurs. Which of the following best describes the operability status of Unit 2 "A" RHR Loop?

a. "A" RHR Loop is fully operable.

b. "A" RHR Loop is capable of suppling only limited flow.

c. Due to loss of power to "A" RHR Loop LPCI injection valves the system is INOP.

d. "A" RHR Loop can only be operated in Suppression Pool Cooling Mode.

ANSWER: 13

b.

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QUESTION: 14 POINT VALUE: 1.00 RECORD: 286 ID: LSA0316
LESSON: 20-2D Objectives: 23

**** NOTE: This question is not related to the scenario ****

If the local D/G breaker key-locked ASSD isolation switch is in the LOCAL position, which one of the following statements is correct?

a. The D/G will start on an automatic signal and load on to its emergency bus.

b. The D/G can be manually loaded to a dead bus from the control room.

c. The D/G can be manually loaded to a dead bus from the local D/G panel.

d. The D/G can be manually loaded to a dead bus from either the control room or the local D/G panel.

ANSWER: 14

c.

** "NRC B2 SSA03 SRO" ANSWER KEY **

QUESTION: 15 POINT VALUE: 1.00 RECORD: 291 ID: LSA0321
LESSON: 14-2B Objectives: 15

**** NOTE: This question is not related to the scenario ****

If the speed feedback signal in the HPCI turbine control valve control circuit fails at zero. The control valve will:

a. Remain closed when HPCI is started.

b. Fail to the full open position when HPCI is started.

c. Fail to the full open position immediately.

d. Cycle open and then fail closed when HPCI is started.

ANSWER: 15

b.

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** END OF "NRC B2 SSA03 SRO" ANSWER KEY **

** "NRC B1 SSA10 SRO" ANSWER KEY **

(OPEN REFERENCE EXAM CREATED FROM STATICS OPEN REFERENCE EXAM BANK)

EXAM NAME: NRC B1 SSA10 SRO

EXAM DATE: 04/14/92

CLASS: NRC/LOR EXAM

COURSE CODE: ROA24B

PREPARED BY: L DUNLAP

NUMBER OF QUESTIONS: 15

TOTAL POINTS: 15.00

80% POINTS: 12.00

70% POINTS: 10.50

TIME LIMIT: 1.00 HOURS

MASTER

ESTIMATED TIME TO COMPLETE THE EXAM: 47.00 MINUTES

REFERENCES TO BE PROVIDED TO THE STUDENT:

EOP-01-UG, T/S, 2-A-2 4-7

** "NRC B1 SSA10 SRO" ANSWER KEY **

** "NRC B1 SSA10 SRO" ANSWER KEY **

QUESTION: 1 POINT VALUE: **1.00** RECORD: **364** ID: **LSA1022**
LESSON: **28-2A** Objectives: **10**

Given the current plant conditions, the status of RPS is:

a. RPS has functioned correctly.

b. No scram signal should be present.

c. An ATWS condition exists.

d. a half scram should exist on "A" RPS only.

ANSWER: 1

c.

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QUESTION: 2 POINT VALUE: **1.00** RECORD: **26** ID: **LSA1003**
LESSON: **28-2A** Objectives: **07**

Given current plant conditions, what is the status of the ARI system:

a. A loss of power has occurred to the ARI logic, and it will not function properly.

b. ARI has activated due to the loss of F3.

c. ARI will operate properly if required.

d. ARI will automatically activate immediately.

ANSWER: 2

c.

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QUESTION: 3 POINT VALUE: 1.00 RECORD: 362 ID: LSA1020
LESSON: 20-2F Objectives: 07

How would the EHC system have responded if the UPS system failed to automatically respond to the transient? EHC control power:

a. Would shift to 250 VDC.

b. Would shift to the alternate 120 VAC power supply.

c. Would not shift.

d. Would be supplied from unit one's power supply.

ANSWER: 3

c.

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QUESTION: 4 POINT VALUE: 1.00 RECORD: 34 ID: LSA1011
LESSON: 20-2D Objectives: 23

If it becomes necessary to cross tie E1 to E3 and #1 DG is loaded to 3800 KW. Which of the following may be started?

a. 2A CRD pump

b. 2C RBCCW pump

c. 2D ventilation A/C condenser

d. 2A Fuel Pool cooling pump

ANSWER: 4

d.

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QUESTION: 5 POINT VALUE: 1.00 RECORD: 24 ID: LSA1001
LESSON: 14-2B Objectives: 15X

Regarding the HPCI system, in the current situation, HPCI will . . .

a. Inject water but is inoperable per Technical Specifications.

b. Inject water automatically but, PCIS group 4 is inoperable per Technical Specifications.

c. Not inject water to the RPV automatically, but is available in manual.

d. Not inject water to the RPV.

ANSWER: 5

b.

[a, c & d] are incorrect; HPCI is designed to operate from a standby lineup with a total loss of AC power.
[b] is correct; Div I of the steam leak detection is inoperable due to the power loss (A-2-4-7)

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QUESTION: 6 POINT VALUE: **1.00** RECORD: **29** ID: **LSA1006**
LESSON: **14-2G** Objectives: **13C**

If the SLC switch is placed in the Pump B Run position but the B Squib valve does not fire:

a. 'B' SLC pump will inject because the "A" squib valve has already fired as indicated by 2-A-4-4-5 "Squib valve continuity loss" alarm.

b. 'B' SLC pump will start but can not inject until the switch is placed in the Pump A & B Run position.

c. 'B' SLC pump will start but will not inject until "A"-RPS is on alternate power.

d. 'B' SLC pump will start but will not inject until E-3 power has been restored.

ANSWER: 6

d.

[a] is incorrect; 2-A-4-4-5 is in due to loss of E-3
[b] is incorrect; both squibs fire in any position other than OFF
[c] is incorrect; RPS does not power the squib or any SLC logic
[d] is correct; the 'A' squib will fire as soon as power is available to E-3

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QUESTION: 7 POINT VALUE: 1.00 RECORD: 40 ID: LSA1017
LESSON: 15-2E Objectives: 04

Without operator actions, if the plant continued to run for several hours under these conditions the MSIVs :

a. Will remain open.

b. Have failed to automatically close and must manually close.

c. Will automatically close on Group I isolation signal.

d. Will drift closed (outboards only).

ANSWER: 7

c.

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QUESTION: 8 POINT VALUE: 1.00 RECORD: 28 ID: LSA1005
LESSON: 19-2B Objectives: 23

Under these circumstances, which of the following will cause DG-3 to trip ?

a. Loss of nuclear service water header pressure.

b. Loss of lube oil pressure.

c. Inability to load the diesel.

d. Low jacket water pressure.

ANSWER: 8

b.

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QUESTION: 9 POINT VALUE: 1.00 RECORD: 35 ID: LSA1012
LESSON: 20-2D Objectives: 18C

Based on the current status of just the electrical power distribution system, the most limiting condition:

a. Places the unit in a 1 hour LCO.

b. Places the unit in an 8 hour LCO.

c. Requires an immediate shutdown of the unit.

d. Requires the unit to be in at least startup within 6 hours.

ANSWER: 9

b.

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QUESTION: 10 POINT VALUE: 1.00 RECORD: 37 ID: LSA1004
LESSON: 20-2F Objectives: 14

Given the current plant conditions, if the alternate power source to the primary UPS inverter is lost it will be indicated by:

a. Decreasing battery bus voltage.

b. Loss of ability to move rods.

c. Auto transfer to the standby inverter.

d. Only indications outside the control room.

ANSWER: 10

b.

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** "NRC B1 SSA10 SRO" ANSWER KEY **

QUESTION: 11 POINT VALUE: 1.00 RECORD: 39 ID: LSA1016
LESSON: 25-2D Objectives: 11

Based on the current status of the plant, continued plant operation is:

a. Allowed for up to 1 hour.

b. Allowed for up to 8 hours.

c. No longer allowed.

d. Allowed with no time constraints.

ANSWER: 11

c.

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QUESTION: 12 POINT VALUE: 1.00 RECORD: 30 ID: LSA1007
LESSON: 15-2E Objectives: 04A

Given the current plant conditions, regarding primary containment isolations:

a. All penetrations will isolate as designed.

b. HPCI will isolate as designed.

c. MSIVs will isolate as designed.

d. RCIC will isolate as designed.

ANSWER: 12

c.

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QUESTION: 13 POINT VALUE: 1.00 RECORD: 42 ID: LSA1019
LESSON: 28-2A Objectives: 09

After plant conditions are stabilized by operator actions, the Reactor Protection System:

a. Bus "A" should be re-energized with Bus E5 or E6.

b. Bus "A" should remain de-energized.

c. Half scram should be reset.

d. Bus "A" should be re-energized with Bus E8.

ANSWER: 13

d.

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QUESTION: 14 POINT VALUE: 1.00 RECORD: 37 ID: LSA1014
LESSON: 14-2G Objectives: 13A

Concerning the SLC system, under the current plant condition:

a. SLC tank temperature will decrease.

b. SLC is operable.

c. SLC will not fulfill its intended function.

d. SLC tank level indication is not valid.

ANSWER: 14

a.

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** "NRC B1 SSA10 SRO" ANSWER KEY **

QUESTION: 15 POINT VALUE: 1.00 RECORD: 38 ID: LSA1015
LESSON: 14-2D Objectives: 18Q

**** Not Related To This Scenario ****

During a LOCA condition, a failure of the "A" Recirculation discharge valve to close will:

a. Reduce LPCI flow to the core.

b. Prevent LPCI loop "A" from injecting into the core.

c. Will not affect LPCI operation.

d. Will prevent shutdown cooling from operating.

ANSWER: 15

a.

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** END OF "NRC B1 SSA10 SRO" ANSWER KEY **

** "CREW B SRO" ANSWER KEY **

(OPEN REFERENCE EXAM CREATED FROM BTU LICENSED TRAINING EXAM BANK)

EXAM NAME: CREW B SRO

EXAM DATE: 04/14/92

CLASS: NRC/LOR EXAM

COURSE CODE: ROA24B

PREPARED BY: L DUNLAP

MASTER

NUMBER OF QUESTIONS: 30

TOTAL POINTS: 30.00

80% POINTS: 23.00

70% POINTS: 21.00

TIME LIMIT: 2.00 HOURS

ESTIMATED TIME TO COMPLETE THE EXAM: **125.00 MINUTES**

REFERENCES TO BE PROVIDED TO THE STUDENT:

APP FOR UA-01, APP UA-02, S. 1-10, R. 8,
APP UA-23, S. 6-2, R. 19, EOP-01-LPC, RC/P-26, R.8,
EOP-01-RVCP, EOP-01-RXFP, EOP-01-RXFP, STEP 038, R.4,
EOP-01-RXFP, STEP 038, REV. 4, EOP-01-SEP-02, R.4,
EOP-01-SEP-03/FIG 1, EOP-01-UG, EOP-02-PCCP,
EOP-02-PCCP, PC/P-11, R.2, EOP-03-SCCP, SC/T-18&20, R.2,
OP-07,8.13, R.13, PT-01.1.6, 7.2.2,R12, SEP-01, SECT. 4,
T.S. 6.5.1, TECH SPEC 3.6.5.1, R.78,
TECH SPEC 3.6.6.1, R.102, TECH SPEC., S 3.3.1, REV. 78

** "CREW B SRO" ANSWER KEY **

QUESTION: 1 POINT VALUE: 1.00 RECORD: 1767 ID: LLN0138
LESSON: 28-2A Objectives: 23

While performing PT 01.1.6, Reactor Protection System Manual Scram Test, Step 7.2.2, the RPS Trip System B Scram group lights did not energize. This condition indicates: (Select the correct answer.)

a. the acceptance criteria of the PT are met. No further action is necessary.

b. The acceptance criteria of the PT are met. Initiate a WR/JO to investigate the failure of the lights.

c. The acceptance criteria of the PT are not met. Depress the Manual Reactor Scram System B pushbutton within one hour and determine the cause of the RPS failure.

d. The acceptance criteria of the PT are not met. Depress the Manual Reactor Scram System B pushbutton and commence a normal reactor shutdown. Be in hot shutdown within 6 hours.

ANSWER: 1

b.

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** "CREW B SRO" ANSWER KEY **

QUESTION: 2 POINT VALUE: **1.00** RECORD: **1583** ID: **LLE0028**
LESSON: **07-2K.01** Objectives: **18, 20**

During emergency conditions when the Primary Containment is degraded you are required, by procedure, to initiate drywell spray under certain conditions. In which one of the following circumstances would you NOT initiate drywell sprays? (Select the correct answer.)

a. Torus pressure is 14 psig, DW temperature 250°F.

b. DW average temperature is 300°F, DW pressure 8 psig.

c. DW hydrogen concentration is 7%, Torus O2 concentration 5%.

d. DW average temperature 400°F, pressure 5 psig.

ANSWER: 2

d.
this violates the DW spray init graph.

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** "CREW B SRO" ANSWER KEY **

QUESTION: 3 POINT VALUE: **1.00** RECORD: **1658** ID: **LLN0037**
LESSON: **27-2B** Objectives: **11,14**

A reactor startup is in progress. Control rod 38-27 was being withdrawn when the following display appeared on the Rod Worth Minimizer screen:

SELF TEST: OK	SEQUENCE:	A1 BPWS	MODE: OPERATE
BLOCKS: INSERT WITHDRAW	STEP:	001	POWER: BELOW LPSP
SR 38 -- 27:FF	SUB 48		IB WB A1--001
HELP		DISPLAY OFF	ETC

Based on the given information, which of the following actions should be taken? (Select the correct answer.)

a. Attempt to recouple control rod 38-27.

b. Enter a substitute value for control rod 38-27 after verifying its position.

c. Fully insert control rod 38-27.

d. Declare control rod 38-27 INOPERABLE and electrically disarm it then notify the Nuclear Engineer.

ANSWER: 3

b.

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QUESTION: 4 POINT VALUE: **1.00** RECORD: **1763** ID: **LLE0122**
LESSON: **07-2K.06** Objectives: **02,03**

Plant Conditions

Reactor Pressure	950 PSIG
Reactor Water Level	+180 inches
All Rods	In
HPCI	Inop

A Group One Isolation has occurred due to Main Steam Line High Radiation. The current plant conditions are listed above. Subsequent plant degradation results in the requirement to Emergency Depressurize the reactor. Upon commencing emergency depressurization the crew places all 7 ADS switches to open, then the final 4 SRV switches to open, however, no SRV's will open. The crew should: (Select the correct answer.)

a. terminate injection to the reactor until reactor pressure is below the Minimum Alternate Flooding Pressure.

b. start RCIC and maintain Reactor Pressure at it's current value until SRV's can be restored to operation.

c. bypass MSIV interlocks and reopen MSIV's to depressurize the reactor to the Main Condenser.

d. allow Reactor Pressure to be controlled by SRV cycling. When SRV's are returned to service, open seven SRV's.

ANSWER: 4

c.

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QUESTION: 5 POINT VALUE: 1.00 RECORD: 1124 ID: LLE0221
LESSON: 14-2E Objectives: 15

During an ATWS, level has been lowered to TAF to suppress reactor power. The reactor has been emergency depressurized due to the HCTL. Core Spray has been overridden to prevent injection. Plant conditions are:

Reactor level	TAF
Reactor pressure	100 psig
Core Spray Pumps A/B	overridden off
Core Spray injection valves (F005A/B)	overridden closed

If offsite power is lost, how will Core Spray respond as the diesel generators tie onto the E buses? (Select the correct answer.)

a. Core Spray Pumps sequence on, but injection valves remain shut.

b. Core Spray Pumps remain off; injection valves auto open.

c. Core Spray Pumps sequence on; injection valves auto open.

d. Core Spray Pumps remain off and injection valves remain closed.

ANSWER: 5

c.

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QUESTION: 6 POINT VALUE: 1.00 RECORD: 1840 ID: LLN0087
LESSON: 15-2B Objectives: 11

The plant is shutdown. All fuel has been off-loaded. The following conditions exist:

- Both doors of the reactor building personnel airlock are open
- Both trains of SBGT are out of service for maintenance
- The inner railroad airlock door is open with a new fuel shipment in the airlock
- One of the reactor building exhaust radiation detectors is undergoing a logic system functional test

Fuel sipping is scheduled to be performed. Based on these conditions, which of the following actions must be completed before fuel sipping can be commenced? (Select the correct answer.)

a. The reactor building exhaust radiation detector must be operable and one of the reactor building airlock doors must be closed.

b. One train of the SBGT system and the reactor building exhaust radiation detector undergoing the functional test must be returned to service.

c. The railroad airlock door and one of the reactor building airlock doors must be closed.

d. At least one of the reactor building personnel airlock doors must be closed with the interlock operable and both trains of the SBGT system must be operable.

ANSWER: 6

d.

.....

QUESTION: 7 POINT VALUE: 1.00 RECORD: 1754 ID: LLE0117
LESSON: 07-2K.08 Objectives: 04, 05

Plant Conditions :

Drywell Pressure	10 psig (rising)
Drywell Temperature	285 °F (rising)
RPV water level	+175 inches (steady)
Torus Pressure	9 psig (rising)
Suppression Chamber Spray	initiated
MSIV's	closed due to MSL Hi Rad

With the above listed conditions, the operating crew should: (Select the best answer.)

a. anticipate emergency depressurization.

b. commence a reactor cooldown.

c. emergency depressurize the RPV.

d. initiate drywell sprays.

ANSWER: 7

d.

.....

QUESTION: 8 POINT VALUE: **1.00** RECORD: **1822** ID: **LLN0083**
LESSON: **22-2B** Objectives: **06B, 06C**

Unit 2 is operating at 100% power. Nuclear Service Water (NSW) pump 2A is operating. NSW pump 2B is inop and under clearance. Conventional Service Water (CSW) pump 2B is selected for auto on the nuclear SW header. A Loss of Off-Site Power occurs resulting in the following conditions:

- NSW pump 2A trips on undervoltage
- NUCLEAR HDR SERV WTR PRESS-LOW annunciates
- Nuclear header pressure indicates less than 40 psig
- GEN-XFRM PRIMARY L/O UNIT TRIP in alarm
- All four diesel generators start and tie on to their respective E-bus

Which one of the following correctly describes the responsee of NSW pump 2A and CSW pump 2B as their respective E bus are energized? (Select the correct answer.)

a. NSW pump 2A and CSW pump 2B start with no time delay.

b. NSW pump 2A starts with no time delay, CSW pump 2B does not start.

c. NSW pump 2A starts after 5 seconds, CSW pump 2B starts with no time delay.

d. NSW pump 2A starts after 5 seconds, CSW pump 2B does not start.

ANSWER: 8

b.

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QUESTION: 9 POINT VALUE: **1.00** RECORD: **906** ID: **LLE0237**
LESSON: **07-2K.10** Objectives: **09**

Plant Conditions:

- Site Emergency declared 30 minutes ago due to Radioactivity Release
- ATWS
- Reactor Pressure 600 psig
- Suppression Pool Temperature 160°F
- N036 only available

During an emergency evolution with plant conditions as listed above, the operating crew is maintaining the RPV level at -30 inches (N036) while the SLC System is injecting boron to the reactor. The TSC notifies the Shift Supervisor that E&RC has reported that a dose rate of 1010 mR/hr (whole body) has been confirmed by a field measurement at the Sunny Point Military Terminal. Under these conditions, the crew should take which of the following actions? (Select the correct answer.)

a. Anticipate emergency RPV depressurization and evacuate the turbine building.

b. Emergency depressurize the RPV, then slowly reestablish the RPV water level above -7.5 inches.

c. Continue to inject boron until the SLC tank level is below 20%, then raise RPV water level to normal.

d. Emergency depressurize the reactor due to the heat capacity temperature limit, then return the RPV water level to a point determined by Table 3 on the Level/Power Control Flowchart.

ANSWER: 9

b.

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QUESTION: 10 POINT VALUE: **1.00** RECORD: **1758** ID: **LLE0118**
LESSON: **07-2K.11** Objectives: **09, 10**

Plant Conditions:

ATWS
RPV Water Level cannot be determined
SLC operating
Four SRV's open

After RPV pressure dropped to less than 180 psig, the operating crew has maintained the RPV pressure slightly above 185 psig for 90 minutes, the reactor is shutdown due to boron injection (the entire content of the SLC tank has been injected). The operating crew should: (Select the best answer.)

a. close 3 SRV's and allow reactor level to increase until level instruments are back on scale.

b. terminate injection and wait the maximum core uncovery time limit for level instruments to come on scale.

c. continue to maintain RPV pressure at the minimum alternate flooding pressure until reactor water level can be determined.

d. go to the primary containment flooding procedure and execute it concurrently with the level/power control procedure.

ANSWER: 10

c.

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QUESTION: 11 POINT VALUE: **1.00** RECORD: **1909** ID: **LLN0120**
LESSON: **14-2B** Objectives: **30**

During EOP execution, plant conditions are as follows:

Reactor power	15%
Reactor water level	133"
Suppression pool temperature	111°F
HPCI in standby	

Direction has been given to terminate and prevent injection from HPCI. This can best be accopmlished by:

a. Depressing HPCI Manual Isolation pushbutton.

b. Depressing HPCI Turbine Trip pushbutton.

c. Closing HPCI steam line isolation valves, E41-F002/F003.

d. Placing HPCI aux oil pump in 'PULL-TO-LOCK'.

ANSWER: 11

d.

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QUESTION: 12 POINT VALUE: **1.00** RECORD: **667** ID: **LLE0222**
LESSON: **14-2E** Objectives: **09, 15**

Following a transient, Unit 2 is shut down with the following conditions:

RPV level +65 inches	DW Pressure 1.0 psig
RPV Pressure 300 psig	DW Temperature 140°F

Due to multiple electrical and equipment failures, the 'A' Core Spray system is the only injection source available. CS is in a normal standby lineup EXCEPT that both the inboard (E21-F005A) and outboard (E21-F004A) injection valves are shut. The 'A' CS pump is started and the F005A valve is opened. If the F004A valve stays closed when taken to open for injection, then: (Select the correct answer.)

a. The F004A valve is malfunctioning, and should be opened locally.

b. The F004A valve closed seal-in logic must be reset before opening the valve.

c. The initiation signal must be reset before opening the F004A valve.

d. The F005A valve should be shut. The F004A valve can then be opened; throttle the F005A valve for injection.

ANSWER: 12

d.

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QUESTION: 13 POINT VALUE: 1.00 RECORD: 1750 ID: LLE0115
LESSON: 07-2K.02 Objectives: 13A

Plant Conditions:

AFWS (Reactor Power - 15%)
Injecting boron with HPCI
RPV water level being maintained at TAF
High energy steam line break in secondary containment

20' north reactor bldg.	217°F	Rising slowly
50' NE reactor bldg.	210°F	Rising slowly
SRHR Equipment room	219°F	Rising slowly
RCIC room	211°F	Rising slowly

Under the above listed conditions, which one of the following actions should be taken? (Select the correct answer.)

a. Immediately emergency depressurize the reactor by opening seven safety relief valves.

b. Wait until the reactor is shut down, then emergency depressurize the RPV by opening seven safety relief valves.

c. Terminate and prevent all injection, then emergency depressurize the reactor.

d. Terminate and prevent injection from condensate and feedwater, RHR, and core spray, then emergency depressurize the reactor.

ANSWER: 13

d.

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QUESTION: 14 POINT VALUE: **1.00** RECORD: **1948** ID: **LLN0149**
LESSON: **15-2B** Objectives: **11**

For which of the following plant conditions is Secondary Containment **NOT** required to be operable on Unit 2.

a. The Unit is in the POWER OPERATION MODE with a Fire Watch stationed to run a hose from South C.S. through the 20' air lock to the salt water release tank.

b. The Unit is in the HOT SHUTDOWN MODE, warming 'B' loop RHR to commence shutdown cooling.

c. The Unit is in the REFUEL MODE, with fuel sipping in progress.

d. The Unit is in the COLD SHUTDOWN MODE, maintaining temperature < 180°F, NEW fuel inspection in progress.

ANSWER: 14

d.

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QUESTION: 15 POINT VALUE: **1.00** RECORD: **798** ID: **LLN0158**
LESSON: **15-2C** Objectives: **11C**

Unit 1 has experienced a Loss of Coolant Accident in conjunction with a Loss of Off-site Power. Plant conditions are as follows:

- Primary containment pressure is 40 psig
- Hydrogen and oxygen concentrations cannot be determined
- Diesel Generator 2 has tripped de-energizing bus E2 and E6
- Primary Containment venting is required by EOPs

Which one of the following correctly describes the CAD system valve alignment required to vent/purge primary containment? (Select the correct answer.)

a. Vaporizer A inlet and outlet valves manually operated, DC train isolation valves overridden open.

b. Vaporizer B inlet and outlet valves manually operated, DC train isolation valves overridden open.

c. Vaporizer A inlet and outlet valves manually operated, AC train isolation valves overridden open.

d. Vaporizer B inlet and outlet valves manually operated, AC train isolation valves overridden open.

ANSWER: 15

b.

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QUESTION: 16 POINT VALUE: **1.00** RECORD: **663** ID: **LLE0224**
LESSON: **14-2E** Objectives: **19, 15**

A LOCA on Unit 2 has resulted in the auto start of all low pressure ECCS and the following indications:

RPV Pressure: 50 psig
RPV Level: 11 inches (N026A/B)
-5 inches (N036)

DW Pressure: 10 psig
DW Temperature: 315°F
Suppression Pool Press: 9 psig
Suppression Pool Temp: 180°F
Suppression Pool Level: -48 inches

If flow from CS pump A and B is 5000 gpm each, then: (Select the correct answer.)

a. Secure both pumps since they are operating in the unsafe region of the Vortex Limit Curve, and adaquate core cooling is assured.

b. Throttle flow from both CS loops to less than 4400 gpm and restore vessel level to +170 to +200 inches.

c. Maintain maximum flow from both CS loops until level is above TAF then throttle flow to less than 4400 gpm.

d. Maintain maximum flow from both CS loops to flood the vessel since there is no valid level indication.

ANSWER: 16

d.

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QUESTION: 17 POINT VALUE: 1.00 RECORD: **1566** ID: **LLE0236**
LESSON: **07-2K.06** Objectives: **03**

Plant conditions:

Reactor scrammed from 100% power 1 hour ago.
Reactor pressure 1000 psig.
Reactor water level -50 inches.
No reactor injection available.

Under the above conditions, the water in the covered portion of the core is generating sufficient steam to: (Select the correct answer.)

a. prevent any clad temperature in the uncovered portion from exceeding 1500°F.

b. meet the steam flow requirements to maintain the uncovered portion below 1800°F.

c. maintain the minimum number of SRVs in the open position for steam cooling.

d. cause excessive chattering of the SRVs that are not being used for steam cooling.

ANSWER: 17

b.

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QUESTION: 18 POINT VALUE: 1.00 RECORD: 1603 ID: LLA0026
LESSON: 19-2B Objectives: 11.F, 10.C

The plant is operating at 85% power when a solid state relay in the EHC cabinet fails causing a loss of 125V DC power to the EHC System. While waiting for the power to be restored, the following conditions exist:

Turbine vibration	7 mils
Condenser vacuum	27 inches Hg
Stator water coolant flow	400 gpm
Main oil pump discharge pressure	230 psig
Main generator	675 MWe
EHC header pressure	1605 psig

If the above conditions exist for five minutes with no changes, what operator actions should be taken? (Select the correct answer.)

a. Continue to monitor system parameters until the 125V DC power is restored to the EHC System.

b. Trip the turbine from the RTGB since the generator did not run back.

c. Manually trip the turbine from the front standard since the generator did not run back.

d. Manually reduce the load on the generator to a stator current of less than 5792 amps.

ANSWER: 18

c.

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QUESTION: 19 POINT VALUE: 1.00 RECORD: 603 ID: LLA0131
LESSON: 20-2D Objectives: 05

During a reactor scram caused by high drywell pressure due to loss of drywell cooling, Bus 2C fails to transfer causing the associated E-Bus to deenergize because no diesel generators auto start. Which of the following is correct concerning the Diesel Generators (DGs): (Select the correct answer.)

a. DG 3 only has failed to auto start. Immediately push the Auto Mode Start Switch on the number 3 DG. Observe that the number 3 DG output breaker closes.

b. DG 4 only has failed to auto start. Immediately push the Auto Mode Start Switch on the number 4 DG. Observe that the number 4 DG output breaker closes.

c. DGs 1 AND 3 have failed to auto start. Immediately push the Auto Mode Start Switch on the number 1 AND number 3 DGs. Observe that the number 3 DG output breaker closes.

d. DGs 2 AND 4 have failed to auto start. Immediately push the Auto Mode Start Switch on the number 2 AND number 4 DGs. Observe that the number 4 DG output breaker closes.

ANSWER: 19

d.

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** "CREW B SRO" ANSWER KEY **

QUESTION: 20 POINT VALUE: 1.00 RECORD: 1094 ID: IZ0229
LESSON: 07-2K.02 Objectives: 08

Plant Conditions:

ATWS (Reactor Power 15%)
Boron is being pumped with RCIC
High energy steam line leak from RCIC system
Steam Tunnel Temperature 260°F (steady)
20 ft. Reactor Building Temperature 210°F (steady)

Assume the operating crew is executing EOP-03-SCCP. Under these circumstances, the crew should: (Select the correct answer.)

a. terminate and prevent injection from C/F, RHR, CSS, and HPCI, then emergency depressurize the reactor.

b. immediately isolate RCIC.

c. wait until the reactor is shut down, then emergency depressurize the RPV by opening seven safety relief valves.

d. commence a reactor cooldown at a rate of less than 100°F/hr. when allowed by the Level/Power Control Procedure.

ANSWER: 20

d.
LP/C requires 5885# borax (CSB) prior to starting cooldown

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QUESTION: 21 POINT VALUE: 1.00 RECORD: 1680 ID: LLA0040
LESSON: 20-2F Objectives: 07

The plant (Unit 1) had been operating for 37 days when a failure of the UPS bus occurred. The Shift Supervisor attempted to restore the UPS bus but was unable to do so. The reactor was manually scrammed and a cooldown initiated. Select the correct statement below.

a. A cooldown under these conditions should not be conducted since the neutron monitoring system has been deenergized.

b. The cooldown should be rapid, i.e., as close to 100°F as possible to take advantage of the negative reactivity insertion from Xenon. This will prevent an accidental restart of the reactor as the plant is cooled down.

c. Additional personnel will be required for the cooldown. Service and instrument air will not operate properly and automatic valves will have to be manually controlled.

d. Neutron monitors must be closely monitored during the cooldown as the rod position information was lost. Care must be taken to ensure the reactor remains subcritical.

ANSWER: 21

d.

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QUESTION: 22 POINT VALUE: 1.00 RECORD: 1645 ID: LLN0033
LESSON: 22-2B Objectives: 11-A, 14-A

The plant is in the process of shutting down with the "A" loop of RHR in the shutdown cooling mode of operation using the Nuclear Service Water Header. The following annunciators are received, and indications observed:

CONV HDR SW PUMP C TRIP, UA-01, 1-10
NUCLEAR HDR SW PUMP A TRIP, UA-01, 2-10
NUCLEAR HDR SW PUMP B TRIP, UA-01, 4-10
NUCLEAR HDR SERV WTR PRESS-LOW, UA-01, 1-10

Conv Hdr SW Pumps A and B	RUNNING
Drywell Temperature	115°F and increasing
Reactor pressure	98 psig
Reactor Temperature	170°F
Conv SW Hdr pressure	63 psig
RHR HX 2A SW outlet temperature	160°F and slowly increasing

Based on these indications, with regard to shutdown cooling, which of the following actions should be performed? (Select the correct answer.)

a. Increase the RHR HX service water flow rate by throttling open RHR HX 2A SW Discharge Valve, E11-PDV-F068A. Reduce flow to the RBCCW Heat Exchangers.

b. Place the second loop of RHR in shutdown cooling, while throttling back on RBCCW flow with SW-V103 or SW-V106.

c. Isolate Nuclear Service Water to RHR and align the Conventional Service Water header to supply the RHR Heat Exchangers.

d. Shift one loop of RHR to suppression pool cooling, isolate MSIV's, RCIC, and HPCI steam supply valves, open one SRV controlling reactor level using an RHR or core spray pump.

ANSWER: 22

c.

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QUESTION: 23 POINT VALUE: 1.00 RECORD: 940 ID: LLE0230
LESSON: 07-2K.11 Objectives: 04,08, 09,10

A loss of all level instrumentation has forced the unit to enter the Reactor Flooding Procedure (EOP-01-RXFP). The operators have been injecting with maximum flow from all available injection and alternate injection systems for the last five (5) minutes.

Plant conditions are as follows:

All rods are in	
Time since shutdown:	25 minutes
Reactor pressure:	70 psig and steady
Drywell pressure:	23 psig and steady
Suppression Pool Pressure:	22 psig and steady
4 SRV's are open	

From the choices below, select the one that best describes the required operator actions:

a. Maintain reactor pressure as close as possible to the Minimum Alternate Flooding Pressure for the Minimum Core Flooding Interval.

b. Operate SRV's as necessary to maintain RPV pressure ≥ 50 psig.

c. Terminate injection and try to restore level indication within 3.5 minutes.

d. Enter "Primary Containment Flooding Procedure" EOP-01-PCFP.

ANSWER: 23

d.

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** "CREW B SRO" ANSWER KEY **

QUESTION: 24 POINT VALUE: **1.00** RECORD: **1093** ID: **LLE0239**
LESSON: **25-2A** Objectives: **03,05**

Plant Conditions:

- Actual RPV Pressure 60 psig
- Actual RPV Water Level -20 inches
- Drywell Temperature 195°F
- Rx Building 50ft Temperature (B21-TR-5769A-Red pen) 215°F
- Scram discharge risers on six control rods ruptured
- RPS cannot be reset
- Reactor shut down
- E8 deenergized
- ERFIS is not available

During an emergency evolution, with conditions as listed above, the operating crew has just emergency depressurized the reactor due to EOP-03 guidance. Under these conditions, which of the following RTGB water level instruments is should be used to determine RPV level? (Select the correct answer.)

a. B21-N026A only

b. B21-N026A, B21-N036 and B21-N037

c. B21-N036 only

d. B21-N026 and B21-N037

ANSWER: 24

c.

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QUESTION: 25 POINT VALUE: 1.00 RECORD: 1814 ID: LLE01.14
LESSON: 07-2K.02 Objectives: 06.C

While operating at 100% power, the SRHR sprinkler system is activated by a fire in that area which continues to burn. To attack the fire from two directions, fire hoses have been run down the stairwell and in from the HPCI room. The Fire Commander reports that the water level in SRHR is now over a foot deep and is spilling over into the HPCI room where the level is also beginning to rise. Which of the following actions should the operating crew take? (Select the correct answer.)

a. Manually scram the reactor and anticipate emergency depressurization.

b. Perform a reactor shutdown per GP-05, or by manual scram, as directed by the Shift Foreman.

c. Manually scram the reactor and cooldown at normal rates per the RC/P section of EOP-01.

d. Continue operation and monitor the water level in the HPCI room.

ANSWER: 25

d.

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QUESTION: 26 POINT VALUE: 1.00 RECORD: 1578 ID: LLN0015
LESSON: 28-2A Objectives: 23

Unit 2 has been operating at rated power for several days. An I&C technician performing am MST has found the Drywell Pressure High Switch C72-PT-N002A setpoint at 2.4 psig. As the control operator, you should: (Select the correct answer.)

a. pull fuse C72A-F4A within 1 hour.

b. have the I&C technician adjust the setpoint to less than 2 psig within 2 hours.

c. pull fuses C72A-F4A and C72A-F4C within 1 hour.

d. insert a manual scram in A channel within 1 hour.

ANSWER: 26

a.

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QUESTION: 27 POINT VALUE: 1.00 RECORD: 1786 ID: LLA0064
LESSON: 07-2B Objectives: 06g

A reactor startup/heatup is being conducted. The Control Operator finds him/herself in a situation where reactor power is 625 MWT and reactor pressure is 780 psig (one or more trip functions may have failed to function to get to this point). Under these conditions the operator should...: (Select the correct answer.)

a. reduce reactor power to 400 MWT by driving control rods.

b. raise reactor pressure using any available means.

c. increase recirculation flow.

d. shutdown the reactor.

ANSWER: 27

d.

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QUESTION: 28 POINT VALUE: 1.00 RECORD: 1688 ID: LLE0088
LESSON: 07-2K.02 Objectives: 06.B, 08.A

The reactor (Unit 2) has been operating for 50 days with minor fuel leakers identified. A steam leak develops in the HPCI Room and HPCI fails to isolate. It is found that the Outboard Steam Isolation Valve (E41-F003) is mechanically stuck in the mid position and the Inboard Steam Isolation Valve (E41-F002) will not operate electrically. Upon local investigation E&RC reports that the HPCI Room is inaccessible due to high radiation levels. Current conditions are:

Reactor Power 100%
HPCI Room Temp 200°F
North RHR Room 3 mr/hr 90°F
South RHR Room 5 mr/hr 95°F

Based on current plant conditions, the crew should....(select the correct answer)

a. scram the reactor and emergency depressurize.

b. scram the reactor and commence a cooldown at normal cooldown rates.

c. continue to monitor radiation levels and attempt to close the HPCI Isolation Valves. Scram the reactor if another area becomes inaccessible.

d. scram the reactor and open all bypass valves to rapidly cooldown the reactor.

ANSWER: 28

b.
ONE AREA > MAX SAFE

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QUESTION: 29 POINT VALUE: 1.00 RECORD: 1533 ID: LLA0005
LESSON: 09-2A Objectives: 09, 11

The plant (Unit 2) is conducting a reactor startup. The reactor is critical at 3E5 cps in the source range. Reactor period is 200 seconds. The decision is made to notch out a control rod. The selected control rod is withdrawn one notch. There is no observable change in period or counts even though the rod tip is in a high flux area. The same control rod is withdrawn an additional notch with no observable changes. A different rod is selected, withdrawn one notch and allowed to settle. Reactor period decreases and source range counts begin increasing more rapidly. Suddenly reactor period drops to 50 seconds, source range counts begin to increase rapidly and a rod block occurs. The Control Operator immediately inserted control rods and stopped the power increase. As a supplementary action you should: (Select the correct answer.)

a. maintain reactor power at its present point. Determine and correct the cause of the reactivity insertion before continuing the reactor startup.

b. fully insert the control rod that dropped. Electrically disarm the rod when it is fully inserted.

c. continue the reactor startup, ranging up the IRMs to prevent a reactor scram. Determine and correct the cause of the reactivity insertion prior to reactor shutdown.

d. scram the reactor. Determine and correct the cause of the reactivity insertion prior to restarting the reactor.

ANSWER: 29

b.

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QUESTION: 30 POINT VALUE: **1.00** RECORD: **1895** ID: **LLA0091**
LESSON: **07-20** Objectives: **06**

A loss of off-site power to both units and station blackout on Unit 2 has been in progress for 3.5 hours. Buses E4, E8 and E7 are energized by crosstie from Diesel Generator 2 - the only available on-site power source. 480V loads have been stripped as required for crosstie and remain deenergized. Unit 2 conditions are as follows:

- Drywell pressure is approaching 70 psig.
- Suppression pool level is -1 ft.

Which of the following MCCs must be reenergized to provide the initial vent path required for primary containment venting? (Select the best answer.)

a. MCCs 2XE and 2XF.

b. MCCs 2XE, 2XF and 2XH.

c. MCCs 2XE, 2XF and 2XG.

d. MCCs 2XE, 2XF, and 2XD.

ANSWER: 30

d.

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** END OF "CREW B SRO" ANSWER KEY **

** "CREW D SRO" ANSWER KEY **

(OPEN REFERENCE EXAM CREATED FROM BTU LICENSED TRAINING EXAM BANK)

MASTER

EXAM NAME: CREW D SRO

EXAM DATE: 04/28/92

CLASS: NRC/LOR EXAM

COURSE CODE: ROA24B

PREPARED BY: L DUNLAP

NUMBER OF QUESTIONS: 30

TOTAL POINTS: 30.00

80% POINTS: 24.00

70% POINTS: 21.00

TIME LIMIT: 2.00 HOURS

ESTIMATED TIME TO COMPLETE THE EXAM: **118.00 MINUTES**

REFERENCES TO BE PROVIDED TO THE STUDENT:

AOP-15, 3.2(1)(6), R.1, EOP-01-RVCP, CAUTION 1, FP 50017, SEP-01, SECT. 4, T.S. 3.6.5.1, T/S, SECT. 3.3.1

** "CREW D SRO" ANSWER KEY **

** "CREW D SRO" ANSWER KEY **

QUESTION: 1 POINT VALUE: **1.00** RECORD: **1604** ID: **1LN0018**
LESSON: **10-2A** Objectives: **04d,15b**

Unit 2 is operating at rated power. The following conditions exist:

Recirc Pump B Seal No. 1 cavity pressure	1080 psig
Recirc Pump B Seal No. 2 cavity pressure	1060 psig
Recirc Pump B Seal staging flow	0.0 gpm
Recirc Pump B Seal inlet temperature	135°F

Based on the above conditions, which of the following actions should be taken? (Select the correct answer.)

a. Throttle open Seal Injection Flow Controller Isolation Valve, B32-V47.

b. Open the Recirc Pump Seal Injection Valve, B32-V30.

c. Trip and isolate the B Recirc Pump.

d. Open the Recirc Pump B Seal Staging Valve, B32-V17.

ANSWER: 1

d.

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** "CREW D SRO" ANSWER KEY **

QUESTION: 2 POINT VALUE: 1.00 RECORD: 1566 ID: LLE0236
LESSON: 07-2K.06 Objectives: 03

Plant conditions:

Reactor scrammed from 100% power 1 hour ago.
Reactor pressure 1000 psig.
Reactor water level -50 inches.
No reactor injection available.

Under the above conditions, the water in the covered portion of the core is generating sufficient steam to: (Select the correct answer.)

a. prevent any clad temperature in the uncovered portion from exceeding 1500°F.

b. meet the steam flow requirements to maintain the uncovered portion below 1800°F.

c. maintain the minimum number of SRVs in the open position for steam cooling.

d. cause excessive chattering of the SRVs that are not being used for steam cooling.

ANSWER: 2

b.

.....

QUESTION: 3 POINT VALUE: 1.00 RECORD: 1675 ID: LLE0081
LESSON: 15-2C Objectives: 11E

Following a Loss of Coolant Accident, plant conditions are as follows:

- Primary Containment Pressure 20 psig
- Primary Containment Hydrogen 6%
- Primary Containment Oxygen 5%
- Interruptible Instrument Air Header is isolated

Primary containment vent/purge using CAC nitrogen supply is required by EOP's. The interruptible instrument air (IAI) supply to CAC nitrogen supply tank pneumatic operated valves (i.e. CAC-HV-2683) is isolated. Which one of the following is correct concerning the loss of IAI supply to the CAC nitrogen tank supply valves. (Select the correct answer.)

a. Valves required to supply nitrogen to containment fail open on loss of IAI.

b. CAC nitrogen supply pneumatic valves receive a backup nitrogen supply from the CAD tank.

c. CAC nitrogen supply pneumatic valves receive a backup nitrogen supply from the CAC tank.

d. Valves required to supply nitrogen to containment fail closed on loss of IAI and do not have a backup pneumatic supply.

ANSWER: 3

d.

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QUESTION: 4 POINT VALUE: **1.00** RECORD: **1600** ID: **LLE0039**
LESSON: **07-2K.13** Objectives: **05,08**

A LOCA has occurred on Unit 2. EOP-01-PCFP is being performed. The following conditions exist:

LPCI systems	Injecting at full flow
Core Spray Pump A (suction from CST)	Injecting at full flow
Core Spray Pump B (suction from suppression pool)	Injecting at full flow
RPV level	Unknown
RPV pressure	70 psig
Drywell Pressure (at 100 ft. elev.)	45 psig
Suppression Chamber Pressure	71 psig
CRD Pumps 2A/2B	Running
Primary Containment Level indicator	65.1 ft

2 condensate pumps are running and 1 condensate booster pump is injecting to the RPV.

Based on the given conditions, which of the following actions is correct? (Select the correct answer.)

a. All injection into the reactor vessel from sources external to the primary containment must be terminated.

b. The Condensate, Core Spray Pump 'A,' and CRD Pumps should be used only as necessary to maintain primary containment water level as is.

c. Continue to raise primary containment water level using the Condensate, Core Spray Pump 'B,' and CRD system.

d. Align as many alternate injection systems as necessary to raise primary containment water level.

ANSWER: 4

b. Pri Cont Lvl = 65.1 ft

.....

QUESTION: 5 POINT VALUE: 1.00 RECORD: 604 ID: LLA0127
LESSON: 20-2D Objectives: 10

Which one of the following trip and lockouts CANNOT be automatically reset to cause tne Diesel Engine to auto start and run for at least 45 seconds or longer? (Select the correct answer.)

a. Overspeed.

b. Low lube oil pressure.

c. High lube oil temperature.

d. Generator differential overcurrent.

ANSWER: 5

d.

QUESTION: 6 POINT VALUE: 1.00 RECORD: **1763** ID: **LLE0122**
LESSON: **07-2K.06** Objectives: **02,03**

Plant Conditions

Reactor Pressure	950 PSIG
Reactor Water Level	+180 inches
All Rods	In
HPCI	Inop

A Group One Isolation has occurred due to Main Steam Line High Radiation. The current plant conditions are listed above. Subsequent plant degradation results in the requirement to Emergency Depressurize the reactor. Upon commencing emergency depressurization the crew places all 7 ADS switches to open, then the final 4 SRV switches to open, however, no SRV's will open. The crew should: (Select the correct answer.)

a. terminate injection to the reactor until reactor pressure is below the Minimum Alternate Flooding Pressure.

b. start RCIC and maintain Reactor Pressure at it's current value until SRV's can be restored to operation.

c. bypass MSIV interlocks and reopen MSIV's to depressurize the reactor to the Main Condenser.

d. allow Reactor Pressure to be controlled by SRV cycling. When SRV's are returned to service, open seven SRV's.

ANSWER: 6

c.

.....

** "CREW D SRO" ANSWER KEY **

QUESTION: 7 POINT VALUE: 1.00 RECORD: 945 ID: LLE0234
LESSON: 14-2B Objectives: 22

Following an ATWS, plant conditions are as follow :

Reactor Power	15%
Reactor Level	+133 inches
Suppression Pool Temperature	111°F
SRV B21-F013E	Stuck Open
HPCI in standby alignment	

Direction has been given to terminate and prevent injection from HPCI. This can be accomplished by: (Select the correct answer.)

a. Placing HPCI Aux Oil Pump in Pull-To-Lock.

b. Depressing HPCI Turbine Trip Pushbutton.

c. Closing HPCI Injection Valve (E41-F006).

d. Depressing HPCI Manual Isolation Pushbutton.

ANSWER: 7

a.

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QUESTION: 8 POINT VALUE: 1.00 RECORD: 1927 ID: LLA0103
LESSON: 14-2D Objectives: 20,18B

Unit 2 is operating at 100% power with RHR Loop "A" in standby LPCI alignment when annunciator RHR RELAY LOGIC A PWR FAILURE (A-01 2,8) is received. An Auxiliary Operator reports that supply breaker circuit 3 on 125 VDC Distribution panel 4A is tripped and will not reset. A LOCA then occurs resulting in the following plant conditions:

- Reactor level -20 inches (N036, N037)
- Reactor pressure 500 psig
- Drywell pressure 13 psig

Which of the following describes the response of RHR Loop "A" to plant conditions and the loss of logic power: (Select the best answer.)

a. RHR pumps 2A and 2C are not running and cannot be manually started.

b. RHR pumps 2A and 2C are not running but can be manually started.

c. RHR pumps 2A and 2C are running with LPCI inboard injection valve (F015) closed.

d. RHR pumps 2A and 2C are running with LPCI inboard injection valve (F015) open.

ANSWER: 8

c.

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QUESTION: 9 POINT VALUE: **1.00** RECORD: **955** ID: **LLA0113**
LESSON: **14-2F** Objectives: **11C,07**

Following a small break LOCA with failure of HPCI, plant conditions are as follows:

Reactor level: TAF
Reactor pressure: 800 psig
All low pressure ECCS pumps running
Seven ADS valves have opened on ADS initiation
ADS valve control switches in AUTO.

With plant conditions as described above, a loss of off-site power occurs resulting in loss of E buses. Diesel generators tie onto the E buses to restore power. Which one of the following describes the effect of the power loss and restoration on the open ADS valves: (Select the correct answer.)

a. ADS valves remain open due to seal in of DC powered logic.

b. ADS valves close then reopen as low pressure ECCS pumps sequence on.

c. ADS valves close then reopen 105 seconds after ECCS pumps sequence on.

d. ADS valves close and will not reopen until their control switches are placed to OPEN.

ANSWER: 9

b.

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QUESTION: 10 POINT VALUE: **1.00** RECORD: **938** ID: **LLE0238**
LESSON: **07-2K.11** Objectives: **02,07**

During an emergency condition while executing the reactor flooding procedure, the operator is directed to establish the Minimum Reactor Flooding Pressure. This action assures that: (Select the correct answer.)

a. the RPV water level indication will be restored.

b. SRVs will not be damaged due to water hammer when the steam lines flood.

c. sufficient injection is established to keep the SRVs open and flood the RPV.

d. the reactor water level is above the top of active fuel.

ANSWER: 10

c.

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QUESTION: 11 POINT VALUE: **1.00** RECORD: **1681** ID: **LLA0041**
LESSON: **10-2A** Objectives: **35d,37d**

After the A Recirc pump trips, the plant stabilizes at 45% power and the operator observes the core flow is 26 Mlbs/hr. Which of the following operator actions(s) is(are) required? (Select the correct answer.)

a. Immediately scram the reactor.

b. Insert control rods per the Nuclear Engineer's immediate power reduction form if multiple APRM's indicate oscillations > 10% rated thermal power top peak to bottom peak.

c. No immediate action required. Restart the tripped Recirc pump as soon as possible after the cause of the trip has been determined.

d. Raise recirc flow to ≥ 35 Mlbm/hr.

ANSWER: 11

d.

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QUESTION: 12 POINT VALUE: **1.00** RECORD: **798** ID: **LLN0158**
LESSON: **15-2C** Objectives: **11C**

Unit 1 has experienced a Loss of Coolant Accident in conjunction with a Loss of Off-site Power. Plant conditions are as follows:

- Primary containment pressure is 40 psig
- Hydrogen and oxygen concentrations cannot be determined
- Diesel Generator 2 has tripped de-energizing bus E2 and E6
- Primary Containment venting is required by EOPs

Which one of the following correctly describes the CAD system valve alignment required to vent/purge primary containment? (Select the correct answer.)

a. Vaporizer A inlet and outlet valves manually operated, DC train isolation valves overridden open.

b. Vaporizer B inlet and outlet valves manually operated, DC train isolation valves overridden open.

c. Vaporizer A inlet and outlet valves manually operated, AC train isolation valves overridden open.

d. Vaporizer B inlet and outlet valves manually operated, AC train isolation valves overridden open.

ANSWER: 12

b.

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QUESTION: 13 POINT VALUE: **1.00** RECORD: **1817** ID: **LLE0147**
LESSON: **07-2K.10** Objectives: **15,16,19**

Plant Conditions:

- Reactor Pressure 480 psig
- ATWS
- Reactor Power 5%
- SLC pumps injecting boron (tank level 45%)
- Emergency depressurization required
- Four SRV's open
- RPV injection terminated

During the above listed conditions, the operating crew ensures adequate core cooling by: (Select the correct answer.)

a. re-establishing RPV injection when the RPV pressure is below 180 psig.

b. maintaining Reactor Water Level above TAF during depressurization.

c. injecting with Low Pressure Systems when the water level lowers below -50 inches.

d. injecting with Low Pressure Systems when water level lowers below -37.5 inches.

ANSWER: 13

a.

.....

QUESTION: 14 POINT VALUE: 1.00 RECORD: 1730 ID: LIA0052
LESSON: 19-2B Objectives: 11

Unit 2 is operating at rated power with the A' EHC pressure regulator in service and the 'B' pressure regulator out of service and not available. The output of the on-line EHC pressure regulator fails HIGH causing a bypass valve to open. Select the action that, if taken, will cause the bypass valve to close. (Select the correct answer.)

a. Decrease the bypass jack.

b. Decrease the load limit pot.

c. Decrease the regulator pressure setpoint.

d. Decrease the maximum combined flow pot.

ANSWER: 14

d.

QUESTION: 15 POINT VALUE: **1.00** RECORD: **603** ID: **LLA0131**
LESSON: **20-2D** Objectives: **05**

During a reactor scram caused by high drywell pressure due to loss of drywell cooling, Bus 2C fails to transfer causing the associated E-Bus to deenergize because no diesel generators auto start. Which of the following is correct concerning the Diesel Generators (DGs): (Select the correct answer.)

a. DG 3 only has failed to auto start. Immediately push the Auto Mode Start Switch on the number 3 DG. Observe that the number 3 DG output breaker closes.

b. DG 4 only has failed to auto start. Immediately push the Auto Mode Start Switch on the number 4 DG. Observe that the number 4 DG output breaker closes.

c. DGs 1 AND 3 have failed to auto start. Immediately push the Auto Mode Start Switch on the number 1 AND number 3 DGs. Observe that the number 3 DG output breaker closes.

d. DGs 2 AND 4 have failed to auto start. Immediately push the Auto Mode Start Switch on the number 2 AND number 4 DGs. Observe that the number 4 DG output breaker closes.

ANSWER: 15

d.

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QUESTION: 16 POINT VALUE: **1.00** RECORD: **1093** ID: **LLE0239**
LESSON: **26-2A** Objectives: **03,05**

Plant Conditions:

- Actual RPV Pressure 60 psig
- Actual RPV Water Level -20 inches
- Drywell Temperature 195°F
- Rx Building 50ft Temperature (B21-TR-5769A-Red pen) 215°F
- Scram discharge risers on six control rods ruptured
- RPS cannot be reset
- Reactor shut down
- E8 deenergized
- ERFIS is not available

During an emergency evolution, with conditions as listed above, the operating crew has just emergency depressurized the reactor due to EOP-03 guidance. Under these conditions, which of the following RTGB water level instruments is should be used to determine RPV level? (Select the correct answer.)

a. B21-N026A only

b. B21-N026A, B21-N036 and B21-N037

c. B21-N036 only

d. B21-N036 and B21-N037

ANSWER: 16

c.

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QUESTION: 17 POINT VALUE: 1.00 RECORD: 906 ID: LLE0237
LESSON: 07-2K.10 Objectives: 09

Plant Conditions:

- Site Emergency declared 30 minutes ago due to Radioactivity Release
- ATWS
- Reactor Pressure 600 psig
- Suppression Pool Temperature 160°F
- N036 only available

During an emergency evolution with plant conditions as listed above, the operating crew is maintaining the RPV level at -30 inches (N036) while the SLC System is injecting boron to the reactor. The TSC notifies the Shift Supervisor that E&RC has reported that a dose rate of 1010 mR/hr (whole body) has been confirmed by a field measurement at the Sunny Point Military Terminal. Under these conditions, the crew should take which of the following actions? (Select the correct answer.)

a. Anticipate emergency RPV depressurization and evacuate the turbine building.

b. Emergency depressurize the RPV, then slowly reestablish the RPV water level above -7.5 inches.

c. Continue to inject boron until the SLC tank level is below 20%, then raise RPV water level to normal.

d. Emergency depressurize the reactor due to the heat capacity temperature limit, then return the RPV water level to a point determined by Table 3 on the Level/Power Control Flowchart.

ANSWER: 17

b.

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QUESTION: 18 POINT VALUE: **1.00** RECORD: **1950** ID: **LLE0198**
LESSON: **26-2A** Objectives: **05a,05c**

A small break LOCA has occurred on Unit 2. RPV level cannot be maintained with high pressure injection systems. The following indications are observed: (ERFIS is not available.)

RPV pressure		575 psig
Drywell temperature		
CAC-TR-4426-1B	pt.A	190°F
CAC-TR-4426-1B	pt.B	210°F
CAC-TR-4426-2B	pt.A	195°F
CAC-TR-4426-2B	pt.B	180°F

At what indicated RPV level on the Fuel Zone Level Instruments would emergency depressurization be required? (Select the correct answer.)

a. < -7.5 inches

b. < -33 inches

c. < -45 inches

d. < -57 inches

ANSWER: 18

b.

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QUESTION: 19 POINT VALUE: 1.00 RECORD: 1733 ID: LLA0053
LESSON: 20-2D Objectives: 1

The number 3 DG is in local manual and running for PMTR. During the test, the engine trips and locks out due to high lube oil temperature. While investigating the cause of the high lube oil temperature, the master/slave breaker from 2D to E3 is opened. This will: (Select the correct answer.)

a. cause a start signal to be initiated but the Diesel will not start until the lockout is manually reset.

b. cause the engine to start but to trip 45 seconds later due to the time delay associated with the high lube oil temperature trip.

c. cause the engine to start only if the Diesel Generator RTGB 'CA" module is selected to "AUTO".

d. cause the engine to auto start and the generator to tie on to E-3 when the generator output is at rated voltage and frequency.

ANSWER: 19

d.

QUESTION: 20 POINT VALUE: 1.00 RECORD: 1555 ID: LLE0013
LESSON: 07-2K.01 Objectives: 17, 27

Plant conditions:

- Reactor scrammed
- RPV pressure 925 psig
- RPV water level +175 inches
- Suppression chamber pressure 16.0 psig
- Drywell pressure 17.5 psig
- Reactor recirculation pumps tripped
- Drywell coolers running
- PNS is aligned to the drywell

During a small break LOCA evolution with the above listed plant conditions present, the operating crew should: (Select the correct answer.)

a. initiate drywell and suppression chamber sprays irrespective of whether drywell coolers are running.

b. immediately initiate suppression chamber sprays then initiate drywell sprays when drywell coolers are tripped.

c. wait until drywell coolers are tripped, then initiate drywell and suppression chamber sprays.

d. spray suppression chamber until drywell sprays can be placed in service, then secure suppression chamber sprays.

QTRAK Reference Number: R237

ANSWER: 20

b.

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** "CREW D SRO" ANSWER KEY **

QUESTION: 21 POINT VALUE: 1.00 RECORD: 1463 ID: LLN0154
LESSON: 27-2A Objectives: 12.B

A reactor startup is in progress on Unit 1 with reactor power at 29%. A control rod at position 00 is selected and a notch withdrawal signal is applied. The control rod withdrawal begins but fails to stop at position 02. The control rod stops at position 04 and the control operator observes the select lights and the withdrawal permissive light are off. No annunciators are received. Based on these indications, which of the following actions should be taken? (Select the best answer.)

a. Insert the control rod to position 02 to reset the RWM block.

b. Insert the control rod to position 02 and issue a WR/JO on the RMCS timer.

c. Insert the control rod to position 00 and issue a WR/JO on the withdraw directional control valves.

d. Insert the control rod to position 00 and flush the collet piston annulus.

ANSWER: 21

b.

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QUESTION: 22 POINT VALUE: 1.00 RECORD: 1537 ID: LLA0008
LESSON: 15-2A Objectives: 23

Unit 2 has been operating for 97 consecutive days during the summer months at approximately rated power. Primary containment average air temperature has slowly been rising during that time. At 6:30 pm it is reported the primary containment average air temperature is 137°F. You should: (Select the correct answer.)

a. enter AOP-14.0 and reduce temperature to less than 135°F within 4 hours or be in hot shutdown in 12 hours and cold shutdown in the following 24 hours.

b. start all the drywell coolers and verify the RBCCW system lineup. Reduce reactor power as necessary to reduce the primary containment average air temperature.

c. begin an immediate reactor shutdown. Have the plant in hot shutdown within 12 hours. Move the plant to cold shutdown within the next 24 hours.

d. enter EOP-02-PCCP, scram the reactor and begin a cooldown. Have the plant in cold shutdown within 24 hours.

ANSWER: 22

b.

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QUESTION: 23 POINT VALUE: 1.00 RECORD: 1403 ID: LLN0172
LESSON: 15-2F Objectives: 09I

Unit 1 power ascension is in progress with primary containment being inerted per CP-24. The status of Standby Gas Treatment (SBGT) is as follows:

- Primary containment suction valve (1F) open.
- Reactor building suction valves (1D/1H) closed.
- SBGT fan 1A control switch in PREF.
- SBGT fan 1B control switch in STBY.

A loss of reactor feedwater results in a decrease in reactor water level to 110 inches. Which of the following correctly describes the response of SBGT:

a. 1F remains open, 1D/1H auto opens, fan 1A auto starts.

b. 1F auto closes, 1D/1H auto opens, fan 1A auto starts.

c. 1F remains open, 1D/1H auto opens, fans 1A and 1B auto starts.

d. 1F auto closes, 1D/1H auto opens, fans 1A and 1B auto starts.

ANSWER: 23

b.

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** "CREW D SRO" ANSWER KEY **

QUESTION: 24 POINT VALUE: **1.00** RECORD: **1547** ID: **LLN0007**
LESSON: **27-2B** Objectives: **15e,15f,11**

A plant shutdown is in progress with control rod insertion being performed. The last control rod from step 6B has been inserted and another control rod has been selected. The RWM display indicates as follows:

SELF TEST:OK	SEQUENCE: B2X BPWS 3	MODE:OPERATE
BLOCKS: INSERT WITHDRAW	STEP: 6B	POWER:BELOW LPSP
SR 30 -- 07 : 00		SE IB WB
IE 06 -- 39 : 14		B2X--6B
HELP	DISPLAY OFF	ETC

Based on the given information, which of the following actions should be taken to clear all the existing RWM rod blocks: (Select the correct answer.)

a. Select any control rod from Rod Sequence Checkoff Sheet, step 6B.

b. Select any control rod from Rod Sequence Checkoff Sheet, step 6A.

c. Select and withdraw control rod 06-39 to position 16.

d. Withdraw control rod 30-07 to position 04.

ANSWER: 24

c.

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** "CREW D SRO" ANSWER KEY **

QUESTION: 25 POINT VALUE: 1.00 RECORD: 1542 ID: LLA0013
LESSON: 14-2D Objectives: 23

Plant conditions:

All control rods are fully inserted.
Suppression pool temperature 97°F.
B reactor recirc loop suction temp is 355°F.
MSIV's can not be opened.
RHR shutdown cooling is unavailable.
A reactor recirculation pump is stopped.

It has been determined that additional cooldown is required and that Alternate Shutdown Cooling will be used. All other methods of cooldown have failed. Using this information and the plant status provided above, which of the following statements concerning the use of alternate shutdown cooling is correct? (Select the correct answer.)

a. Alternate Shutdown Cooling CANNOT be used under the present plant conditions. Reactor pressure is too high.

b. Alternate Shutdown Cooling CANNOT be used under the present plant conditions. At least one recirculation pump is required to be operating prior to entering alternate shutdown cooling.

c. Alternate Shutdown Cooling can be used under the present plant conditions. The recirculation pump discharge valves must be closed prior to starting the RHR pump in the injection mode.

d. Alternate Shutdown Cooling can be used under the present plant conditions. Suppression pool temperature may need to be adjusted to control cooldown rate.

ANSWER: 25

a.

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QUESTION: 26 POINT VALUE: 1.00 RECORD: 1545 ID: LLA0014
LESSON: 28-2A Objectives: 23

The following conditions exist:

APRM A: 28%, LPRM inputs: 11
APRM B: 32%, LPRM inputs: 12
APRM C: 33%, LPRM inputs: 10
APRM D: BYPASSED, LPRM inputs: 9
APRM E: BYPASSED, LPRM inputs: 11
APRM F: 31%, LPRM inputs: 12

Based on these indications, which of the following actions should be taken: (Select the correct answer.)

a. Enter EOP-01 and insert a manual reactor scram.

b. Verify a half-scram on RPS Channel A. Issue a WR/JO to repair APRM C.

c. Issue WR/JO to repair APRM C and continue operation. If APRM C or D are not repaired within 2 hours, be in at least HOT SHUTDOWN within the next 6 hours.

d. Verify a half-scram on Channel A and immediately begin shutting down the reactor and be in HOT SHUTDOWN within 6 hours.

ANSWER: 26

b.

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QUESTION: 27 POINT VALUE: 1.00 RECORD: 1947 ID: LLN0148
LESSON: 15-25 Objectives: 11

From the following plant conditions select the one for which Secondary Containment is being maintained operable.

a. An I&C MST caused the RB supply and exhaust dampers to close and tripped all fans but neither SBGT 2A or 2B started.

b. Unit at power with all systems operable. The outer railroad door is open and a crane has stalled where it prevents closure of the outer railroad door.

c. Unit in Refuel with the RB inlet dampers under clearance for seal replacement .

d. Unit in Shutdown, RB ventilation in service, both SBGT 2A and 2B are under clearance for charcoal filter replacement.

ANSWER: 27

b.

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QUESTION: 28 POINT VALUE: 1.00 RECORD: 1576 ID: LLN0014
LESSON: 25-2E Objectives: 09C

Unit 2 has been operating at rated power for several days. PT 14.1 is being performed. The control operator (CO) selects control rod 22-31 and notices all "A" level LPRMs for those 4 LPRM strings are inop. Which one of the following will occur if the CO attempts to notch out the selected control rod? (Select the correct answer.)

a. RBM "A" will give a block while RBM "B" will not.

b. RBM "B" will give a block while RBM "A" will not.

c. Both RBM "A" and RBM "B" will cause a block.

d. Neither RBM "A" or RBM "B" will cause a block.

ANSWER: 28

d.

QUESTION: 29 POINT VALUE: 1.00 RECORD: 1535 ID: LLA0006
LESSON: 14-2D Objectives: 15

The plant is in Alternate Shutdown Cooling using the "A" RHR pump following an accident. Reactor pressure is 110 psig and reactor water level is +255 inches. It has just been determined the plant has cooled down 27°F in the last 15 minutes. Under these conditions you should: (Select the correct answer.)

a. continue the cooldown at the present rate. The cooldown rate is acceptable.

b. increase suppression pool temperature by bypassing the RHR heat exchanger on the RHR loop in suppression pool cooling.

c. throttle open the E11-F017A until reactor pressure increases to 164 psig.

d. lower reactor vessel water level to inhibit flow through the vessel into the suppression pool.

ANSWER: 29

b.

.....

** "CREW D SRO" ANSWER KEY **

QUESTION: 30 POINT VALUE: 1.00 RECORD: 1895 ID: LLA0091
LESSON: 07-20 Objectives: 06

A loss of off-site power to both units and station blackout on Unit 2 has been in progress for 3.5 hours. Buses E4, E8 and E7 are energized by crosstie from Diesel Generator 2 - the only available on-site power source. 480V loads have been stripped as required for crosstie and remain deenergized. Unit 2 conditions are as follows:

- Drywell pressure is approaching 70 psig.
- Suppression pool level is -1 ft.

Which of the following MCCs must be reenergized to provide the initial vent path required for primary containment venting? (Select the best answer.)

a. MCCs 2XE and 2XF.

b. MCCs 2XE, 2XF and 2XH.

c. MCCs 2XE, 2XF and 2XG.

d. MCCs 2XE, 2XF, and 2XD.

ANSWER: 30

d.

.....

** END OF "CREW D SRO" ANSWER KEY **

MASTER

** "NRC D1 SSA13 SRO" ANSWER KEY **

(OPEN REFERENCE EXAM CREATED FROM STATICS OPEN REFERENCE EXAM BANK

EXAM NAME: NRC D1 SSA13 SRO

EXAM DATE: 04/28/92

CLASS: NRC/LOR EXAM

COURSE CODE: ROA24B

PREPARED BY: L DUNLAP

NUMBER OF QUESTIONS: 15

TOTAL POINTS: 15.00

80% POINTS: 12.00

70% POINTS: 10.50

TIME LIMIT: 1.00 HOURS

ESTIMATED TIME TO COMPLETE THE EXAM: **43.00 MINUTES**

REFERENCES TO BE PROVIDED TO THE STUDENT:

** "NRC D1 SSA13 SRO" ANSWER KEY **

** "NRC D1 SSA13 SRO" ANSWER KEY **

QUESTION: 1 POINT VALUE: 1.00 RECORD: 319 ID: LSA1301
LESSON: 19-2B Objectives: 04

If, under the current plant conditions, the maximum combined flow limit is set to zero, which of the following statements best describes the EHC system response:

a. All bypass and control valves will close.

b. All remaining bypass valves will open sequentially.

c. Pressure Set Regulator "B" will control reactor pressure.

d. The Bypass Valve Jack is preventing opening any bypass valves.

ANSWER: 1

a.

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QUESTION: 2 POINT VALUE: 1.00 RECORD: 333 ID: LSA1316
LESSON: 09-2B Objectives: 06

If reactor power had been 45% when the transient occurred, what would be the response of the CRD system?

a. Drive water flow will increase.

b. Cooling water header pressure will increase.

c. Suction filter D/P will decrease.

d. CRD total system flow would increase.

ANSWER: 2

d.

.....

QUESTION: 3 POINT VALUE: 1.00 RECORD: 320 ID: LSA1302
LESSON: 12-2A Objectives: 09

Given the current plant conditions, what component is the source of leakage into the RBCCW system?

a. Fuel Pool "A" heat exchanger

b. RWCU non-regenerative heat exchanger.

c. Reactor Recirc. pump "A" cooler.

d. Service water.

ANSWER: 3

b.

.....

QUESTION: 4 POINT VALUE: 1.00 RECORD: 321 ID: LSA1303
LESSON: 15-2E Objectives: 04

Given the current plant conditions, what is the status of the RWCU system?

a. Isolated due to high radiation.

b. Isolated due to high differential flow.

c. Pumps have tripped on high leakage.

d. Pumps have tripped on low flow.

ANSWER: 4

b.

a. is incorrect - no such isolation on Hi Rad

b. is correct

c. is incorrect - no such isolation on high leakage

d. is incorrect - pumps have tripped due to PCIS isolations not fully open. This occurs at < 90% open and should occur prior to the pump trip signal on low pump flow.

.....

QUESTION: 5 POINT VALUE: 1.00 RECORD: 331 ID: LSA1314
LESSON: 15-2C Objectives: 11

Given the current plant conditions, what effect can be expected from the CAC/CAD system?

a. Reactor building to suppression pool vacuum breakers will open.

b. Nitrogen supply will overcome loss to SBGT system.

c. CAC system will isolate.

d. Oxygen concentration in the primary containment will remain the same.

ANSWER: 5

a.

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QUESTION: 6 POINT VALUE: 1.00 RECORD: 339 ID: LSA1322
LESSON: 17-2B Objectives: 13

During the current plant conditions, regarding Reactor Feed Pump "A":

a. A total loss of UPS will lock up the "A" RFP at its present speed.

b. The steam supply to the "A" RFP is from cross around steam.

c. Closing the "A" RFP recirc. valve will decrease the RFP speed.

d. If a steam flow transmitter fails downscale, "A" RFP speed will decrease.

ANSWER:

c.

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QUESTION: 7 POINT VALUE: 1.00 RECORD: 335 ID: LSA1318
LESSON: 17-2C Objectives: 08

The long term effect of the current transient will be a reactor power:

a. Decrease due to decreasing pressure.

b. Increase due to loss of feedwater heating.

c. Decrease due to recirc. pump runback.

d. Increase due to increasing pressure.

ANSWER: 7

b.

.....

QUESTION: 8 POINT VALUE: 1.00 RECORD: 337 ID: LSA1320
LESSON: 19-2B Objectives: 04

Neither of the position indicating lights for MS-BPV-2 are illuminated. Which of the following is the correct statement concerning the BPV?

a. The valve is closed; the closed indication has failed.

b. The valve is open; the open indication has failed.

c. The valve has not yet opened far enough to illuminate the open indication.

d. Indicates a blown fuse in the indicating circuit.

ANSWER: 8

c.

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QUESTION: 9 POINT VALUE: **1.00** RECORD: **323** ID: **LSA1305**
LESSON: **27-2A** Objectives: **11**

Regarding the LPRMs associated with rod 26-19 and given current plant conditions, which of the following statements would be correct for the RBM system?

a. All LPRMs in each of the four LPRM strings will input to RBM for Rod Block generation.

b. RBM system is INOP because an "A" level LPRM is down scale and automatically bypassed.

c. The downscale LPRM at level "A" will only affect the RBM channel "A" operation.

d. The downscale LPRM at level "A" will not affect the RBM system operation.

ANSWER: 9

d.

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QUESTION: 10 POINT VALUE: **1.00** RECORD: **326** ID: **LSA1308**
LESSON: **10-2A** Objectives: **17**

Which of the following best describes the status of the recirculation system?

a. Recirc. pumps ran back in response to a turbine transient.

b. Recirc. pumps ran back in response to a water level transient.

c. Recirc. pump speeds cannot be increased above their present speed.

d. Recirc. pump speeds can be increased above their present speed.

ANSWER: 10

c.

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QUESTION: 11 POINT VALUE: 1.00 RECORD: 327 ID: LSA1309
LESSON: 17-2B Objectives: 09

If the "A" narrow range water level transmi er fails low, the plant response over the next several minutes will be:

a. Plant will stabilize with level controlling higher than the level setpoint.

b. Reactor scram on low level.

c. Plant will stabilize with level controlling lower than the level setpoint.

d. Reactor water level will continuously increase.

ANSWER: 11

b.

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QUESTION: 12 POINT VALUE: 1.00 RECORD: 336 ID: LSA1319
LESSON: 10-2A Objectives: 15

Given the current plant conditions, if the #2 seal for reactor recirc. pump "A" were to fail:

a. Seal leakage will rise to 60 gpm.

b. Recirc. pump will trip due to low seal flow.

c. CRD purge flow will isolate on high flow.

d. Drywell equipment drain tank Hi alarm will sound.

ANSWER: 12

a.

a. is correct - with both seals failed the only restriction is by seal design limits per SD.

b. is incorrect - no pump trip on low seal flow

c. is incorrect - no CRD purge flow isolation on high flow

d. is incorrect - with both seals failed, the leakage will be directly to the Drywell to the floor drains, not to equipment drains.

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QUESTION: 13 POINT VALUE: 1.00 RECORD: 338 ID: LSA1321
LESSON: 28-2A Objectives: 09

For the present plant conditions, what is the maximum power allowed by RPS?

a. 113.5%

b. (.66W + 64)%

c. 30%

d. 120%

ANSWER: 13

b.

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QUESTION: 14 POINT VALUE: 1.00 RECORD: 334 ID: LSA1317
LESSON: 11-2A Objectives: 07

**** Note: This question is not related to the scenario. ****

During normal full power operation a QA inspector notices a difference in the RWCU system total flow and combined demineralizer flows with the system delta flow indicating 5 gpm, which of the following is the most probable cause for this difference ?

a. Difference in density between the measured flows.

b. Indicative of a leak past the RWCU reject valve G31-F033.

c. Due to system head loss.

d. Difference in pressure between system inlet and outlet pressure.

ANSWER: 14

a.

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QUESTION: 15 POINT VALUE: 1.00 RECORD: 332 ID: LSA1315
LESSON: 15-2A Objectives: 14

**** NOTE: This question is not related to the scenario ****

During normal full power operation, how will the RBCCW system respond to a loss of the following electrical busses?

2XJ 2XL
2XK 2XM

a. RBCCW system loads will be decreased.

b. RBCCW flow control valves will fail open.

c. RBCCW temperature control valve will fail "as is".

d. RBCCW pump "2B" will trip.

ANSWER: 15

a.

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** END OF "NRC D1 SSA13 SRO" ANSWER KEY **

MASTER

** "NRC D2 SSA15 SRO" ANSWER KEY **

(OPEN REFERENCE EXAM CREATED FROM STATICS OPEN REFERENCE EXAM BANK)

EXAM NAME: NRC D2 SSA15 SRO

EXAM DATE: 04/28/92

CLASS: NRC/LOR EXAM

COURSE CODE: ROA24B

PREPARED BY: L DUNLAP

NUMBER OF QUESTIONS: 15

TOTAL POINTS: 15.00

80% POINTS: 12.00

70% POINTS: 10.50

TIME LIMIT: 2.00 HOURS

ESTIMATED TIME TO COMPLETE THE EXAM: **30.00 MINUTES**

REFERENCES TO BE PROVIDED TO THE STUDENT:

** "NRC D2 SSA15 SRO" ANSWER KEY **

** "NRC D2 SSA15 SRO" ANSWER KEY **

QUESTION: 1 POINT VALUE: 1.00 RECORD: 400 ID: LSA1516
LESSON: 07-K.01 Objectives: 11,17

Under the current plant conditions, venting the drywell for pressure control would be allowed: (Select the best answer.)

a. per OP-10, SBGT System.

b. when drywell pressure approaches 70 psig.

c. per OP-10, SBGT System after overriding the Group 6 isolations.

d. wher suppression chamber exceeds 13 psig.

ANSWER: 1

b.

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QUESTION: 2 POINT VALUE: 1.00 RECORD: 398 ID: LSA1514
LESSON: 07-K.01 Objectives: 17

Drywell pressure and temperature are increasing. Which of the following actions can be taken to control drywell parameters with present plant conditions? (Select the best answer.)

a. Place the drywell chiller in service.

b. Line up the CSW system to the RBCCW heat exchangers.

c. Start the standby RBCCW pump.

d. Line up fire protection to the RBCCW heat exchangers.

ANSWER: 2

d.

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QUESTION: 3 POINT VALUE: 1.00 RECORD: 394 ID: LSA1510
LESSON: 07-K.05 Objectives: 11

Which of the following systems can be used for RPV pressure control? (Select the best answer.)

a. SRV's only.

b. SRV's and turbine bypass valves after re-opening the MSIV's per the Hard Card.

c. SRV's and RCIC in the pressure control mode.

d. SRV's and HPCI in the pressure control mode.

ANSWER: 3

a.

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QUESTION: 4 POINT VALUE: 1.00 RECORD: 402 ID: LSA1518
LESSON: 10-A Objectives: 16g

The "2A" Recirculation Pump Seal staging valve has automatically closed because: (Select the best answer.)

a. Loss of Instrument Air supply.

b. Loss of PNS supply.

c. Trip of Recirculation Pump drive motor breaker.

d. High drywell pressure signal.

ANSWER: 4

c.

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QUESTION: 5 POINT VALUE: 1.00 RECORD: 396 ID: LSA1512
LESSON: 10-A Objectives: 16a

Which of the following actions is correct concerning the loss of cooling to the Reactor Recirculation Pump "2B" Seal Cooler? (Select the best answer.)

a. Pump should be immediately tripped.

b. The seal staging valves should be closed and the pump shutdown within 90 seconds.

c. Pump should be shutdown if either seal temperature exceeds 200°F.

d. Pump can be operated indefinitely provided seal injection flow is available.

ANSWER: 5

c.

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QUESTION: 6 POINT VALUE: 1.00 RECORD: 401 ID: LSA1517
LESSON: 14-B Objectives: 07,11

Given current plant conditions, if the HPCI HIGH WATER LEVEL SIGNAL RESET pushbutton was depressed, HPCI would:

a. Auto start and inject to the RPV without any other operator action.

b. Auto start, but not inject, unless injection valve E41-F006 was opened.

c. Not auto start since RPV level is above the high level trip setpoint.

d. Not auto start until RPV level dropped to the Level 2 initiation setpoint.

ANSWER: 6

a.

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QUESTION: 7 POINT VALUE: 1.00 RECORD: 389 ID: LSA1505
LESSON: 14-D Objectives: 09, 10,18G

Under current plant conditions, to lineup fire protection water to the "A" RHR heat exchanger, the E11-F068A keylocked bypass switch must be placed in bypass to: (Select the best answer.)

a. bypass the low NSW header pressure isolation signal.

b. bypass the low CSW header pressure isolation signal.

c. to allow starting the RHRSW pump without E11-F068A being opened.

d. to allow opening the E11-F068A without an RHRSW booster pump running.

ANSWER: 7

d.

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QUESTION: 8 POINT VALUE: 1.00 RECORD: 399 ID: LSA1515
LESSON: 15-A Objectives: .5g,21b

The major contributor to the rise in drywell pressure is: (Select the best answer.)

a. LOCA lockout of the drywell coolers.

b. the loss of Instrument/Service Air System.

c. the Recirculation Pump Dual Seal failure.

d. the RBCCW System failure.

ANSWER 8

c.

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QUESTION: 9 POINT VALUE: 1.00 RECORD: 393 ID: LSA1509
LESSON: 15-E Objectives: 04,12j

From the choices below, select the one that best describes the status of the group isolations:

a. All group isolations occurred as required.

b. Group 1 did not fully isolate as required.

c. Group 2 did not fully isolate as required.

d. Group 3 did not fully isolate as required.

ANSWER: 9

c.

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QUESTION: 10 POINT VALUE: 1.00 RECORD: 395 ID: LSA1511
LESSON: 07-M Objectives: 8f

A loss of condenser vacuum has caused a turbine trip and reactor scram. If prior to a turbine trip, vacuum starts to decrease, in which one of the following cases could increasing reactor power improve condenser vacuum to prevent a turbine trip? (Select the best answer.)

a. Low seal steam header pressure.

b. Generator load was being reduced.

c. High AOG System outlet flow.

d. Increasing SJAE discharge pressure.

ANSWER: 10

b.

per AOP-37 and APP-UA-23-2-1

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QUESTION: 11 POINT VALUE: 1.00 ORD: 397 ID: LSA1513
LESSON: 22-B Objec es: 10,11e,15a

Considering current plant conditions, Service water to TBCCW isolation valves (SW-V3 and SW-V4): (Select the best answer.)

a. Have NOT responded properly. Valves should be closed using RTGB controls.

b. Have NOT responded properly. Valves must be closed by manual operation.

c. Have responded properly. Valves can be full closed by using RTGB controls.

d. Have responded properly. Valves can be full closed only by manual operation.

ANSWER: 11

c.

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QUESTION: 12 POINT VALUE: 1.00 RECORD: 388 ID: LSA1504
LESSON: 22-B Objectives: 14a,16a

Under current plant conditions, if both the E3 and E4 diesel generators were to start then the required actions would be: (Select the best answer.)

a. trip one diesel generator even if it results in the loss of one E bus, allow the other DG to carry its E bus until it trips.

b. allow both diesels to run; closely monitor temperatures and take further actions only if required.

c. valve in fire protection water to the diesel cooling system.

d. trip both diesel generators even if it results in the loss of E buses.

ANSWER: 12

d.

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QUESTION: 13 POINT VALUE: 1.00 RECORD: 390 ID: LSA1506
LESSON: 22-B Objectives: 10

Concerning the SW-V103 and SW-V106 valves, under current conditions.... (Select the best answer).

a. Both valves should have gone closed.

b. Both valves should have closed to the 19% open position.

c. The SW-V106 ONLY should have closed to the 19% open position.

d. Valve status is correct for plant conditions.

ANSWER: 13

d.

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QUESTION: 14 POINT VALUE: 1.00 RECORD: 392 ID: LSA1508
LESSON: 22-B Objectives: 14a,15a,16a

What action(s) should be taken concerning the NSW System? (Select the best answer.)

a. Shut down all but one NSW pump.

b. Leave the system in its current status and attempt to clear the intake structure.

c. Secure all NSW pumps.

d. Cross-connect the NSW header and CSW header to try and restore NSW header pressure.

ANSWER: 14

Based on feedback received in ASP/OP/and Simulator Scenarios

OP-18 rev 7 Suppl Action 14

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Justin 2 on RO

** "NRC D2 SSA15 SRO" ANSWER KEY **

QUESTION: 15 POINT VALUE: 1.00 RECORD: 386 ID: LSA1502
LESSON: 11-2A Objectives: 13d, 14

From the choices below, select the one that best describes the Tech Spec actions required (if any) that need to be taken concerning the cu rent status of RWCU.

a. No Tech Spec action required.

b. Deactivate at least one of the isolation valves in the closed position.

c. Sample the reactor coolant for conductivity at least once every 24 hours.

d. Restore the RWCU System to service within 30 days or submit a special report to the NRC.

ANSWER: 15

c.

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** END OF "NRC D2 SSA15 SRO" ANSWER KEY **