



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

Report No.: 50-302/96-300

Licensee: Florida Power Corporation
 3201 -34th Street, South
 St. Petersburg, FL 33733

Docket No.: 50-302

License No.: DPR-72

Facility Name: Crystal River Nuclear Plant Unit 3

Examination Conducted: March 26-29, 1996

Chief Examiner: George T. Hopper 4-25-96
 George T. Hopper Date Signed

Examiners: Richard S. Baldwin, Region II
 D. Charles Payne, Region II

Approved By: Thomas A. Peebles 4/26/96
 Thomas A. Peebles, Chief
 Operator Licensing and Human
 Performance Branch
 Division of Reactor Safety Date Signed

SUMMARY

Scope:

Facility training personnel and NRC examiners conducted an announced pilot operator licensing initial examination during the period March 22-29, 1996. This examination implements the operator licensing requirements of 10 CFR §55.41, §55.43, and §55.45. The facility administered the written examination on March 22, and NRC examiners administered operating examinations on March 26-29, 1996. Three Senior Reactor Operator (SRO) and three Reactor Operator (RO) candidates received written and operating examinations.

Results:

Candidate Pass/Fail

| | SRO | RO | Total | Percent |
|------|-----|----|-------|---------|
| Pass | 1 | 2 | 3 | 50 % |
| Fail | 2 | 1 | 3 | 50 % |

The examiners concluded that the licensee training staff had difficulty producing an examination that tested at a level which ensures operator competence (Paragraph 2.1).

The candidates overall performance on the operating test was poor as evidenced by the number of failures and significant number of weaknesses that were documented (Paragraph 2.5).

Examiners noted Emergency Operating Procedure discrepancies during administration of the operating test (Paragraph 3.0).

No violations or deviations were identified.

REPORT DETAILS

1.0 Persons Contacted

Licensee Employees

- *Boltd, G., Vice President Nuclear Production
- *Davis, R., Assistant Director Operations and Chemistry
- *deMontfort, D., Manager, Nuclear Plant Operations
- *Gallian, M., Nuclear Operations Instructor
- *Grumbir, R., Senior Simulator Systems Engineer
- *Hickle, B., Director, Nuclear Plant Operations
- *Holmes, M., Nuclear Operations Instructor
- *Lind, J., Manager, Nuclear Operations Training
- *Smith, J., Operations Training Supervisor
- *Springer, J., Supervisor, Nuclear Simulator Training
- *Widell, R., Director, Nuclear Operations Training

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

NRC Personnel

- *R. Butcher, Senior Resident Inspector

*Participated in exit interview.

Acronyms and initialisms used in this report are listed in the last paragraph.

2.0 Initial Examinations

Facility training personnel and NRC examiners conducted an announced, pilot operator licensing initial examination during the period March 22-29, 1996. All examinations were prepared and administered under the guidelines of the Examiner Standards, NUREG-1021, Revision 7, using the Office of Nuclear Reactor Regulation (NRR) supplemental guidance regarding the pilot initial examination process, and in accordance with the requirements of 10 CFR 55, Subpart E, "Written Examinations and Operating Tests." This was the first examination administered to Florida Power Corporation operator candidates under the pilot process.

2.1 Examination Development

The pilot initial examination process is an initiative by the Office of Nuclear Reactor Regulation to allow the licensee, under strict examination security requirements, to develop operationally oriented, content-valid examinations. The licensee developed one RO and one SRO written examination. For the operating test, the licensee developed two administrative walkthrough sections, twenty Job Performance Measures (JPM) and associated follow-up questions, and three simulator scenarios. NRC examiners reviewed, modified, and approved the examination prior to administration. The examiners conducted an on-site preparation visit during the week of March 11, 1996, to validate examination materials and familiarize themselves with the details required for exam administration. During the entire process, the licensee met all submittal deadlines.

No delays were encountered. However, significant effort was required to modify examination materials to produce a valid examination and meet NRC requirements.

(1) Written Examination Development

The written examination submitted by the licensee 30 days prior to the administration date, did not meet the standards for an NRC administered examination set forth in NUREG-1021, "Operator Licensing Examiner Standards", and NUREG/BR-0122 "Examiners' Handbook for Developing Operator Licensing Written Examinations." A majority of the questions were not written at the comprehension, analysis or application level. The proposed examination could not discriminate a competent from an incompetent operator. Considerable effort was expended by both the NRC and the licensee to make the examination acceptable. The following are descriptions of some of the problems encountered.

- (a) Distractors were a series of true and false statements resulting in an unfocused test item.
- (b) Distractors were not homogeneous resulting in correct answers which stood out from the other incorrect distractors.
- (c) Information in the question stem revealed the correct answer without testing the desired concept.
- (d) Questions contained distractors which were not plausible and easily eliminated.
- (e) Questions contained distractors which were additional correct answers.
- (f) Some questions were considered simple knowledge items and would not discriminate a competent from an incompetent operator.

The examination author worked diligently to resolve the NRC comments. The final versions of the written examinations were discriminating as evidenced by the distribution of candidate grades.

(2) Job Performance Measures

Examination outlines went through several revisions in order to adjust for a reduction in the number of candidates and to meet the guidelines set forth in the corporate notification letter enclosure, "Pilot Examination Guidelines," dated August 10, 1995. Significant enhancements were made to the JPM questions. Initially the licensee did not understand how to incorporate the administrative section of the test into the Part "B" JPM questions. Administrative questions incorrectly replaced rather

than augmented the systems questions. The chief examiner requested additional systems questions be developed as required and made some minor changes to the administrative outlines. The NRC edited the JPM questions during the prep week. Many of the questions were memorization items which required the prohibition of reference use. Some questions were edited or replaced because they were direct look-up questions where the answer could easily be found within a procedure. The majority of the questions associated with JPMS should be open reference items that demonstrate understanding by using knowledge to address real-life situations and problems.

(3) Active Simulator Exercises

The initial set of proposed simulator exercises were significantly altered due to the change in scope required when the number of candidates was finalized at six. The final product that resulted from discussions with the chief examiner and validation during the preparation visit was above average. Problems encountered during the development phase mainly comprised the means by which credit was given to a candidate for performance of the required types of evolutions. The lack of a clearly defined operating territory for each RO position on the control boards made it difficult to determine which candidate would respond and receive credit for the required evolutions. The examiners ensured that only those individuals clearly involved in an event received credit for that event. During the preparation visit other changes were made to further enhance the scenarios. The examiners also requested that additional detail be added to the "Operator Actions" pages of the simulator exercises to include all of the expected operator actions.

The examiners determined that the problems encountered with the quality of the initial examination submittal were due to the lack of experience of those involved in the examination development and review. The lessons learned from this experience will facilitate development of the next examination upon implementation of the new examination process.

2.2 Examination Administration

The licensee administered and proctored the RO and SRO written examinations on March 22, 1996. The examination was administered without difficulty. The NRC examiners administered the operating test to all candidates during the period of March 26-28, 1996. The schedule allowed each examiner to focus on one portion of the test (e.g. simulator JPMS, or in-plant/control room JPMS) each day for all assigned candidates. This eliminated transit time between the site and training center. The examiners concluded that the schedule functioned smoothly.

2.3 Candidate Performance and Results

Examinations were administered to three SRO and three RO candidates. Two SRO candidates and one RO candidate failed the examination. Two of these

candidates failed the administrative portion of the examination. This category of the operating test generally covers the administrative controls of the plant and implements items (9), (10), (11), and (12) of 10CFR 55.45(a). One SRO candidate failed the simulator portion of the operating test which implements items (1) through (8), (11), (12) and (13) of 10 CFR 55.45(a). The simulator portion of the operating test is the most performance-based category and is used to evaluate a candidate's ability to safely operate plant systems under dynamic, integrated conditions. All other candidates passed. One RO candidate was evaluated as a marginal pass on Section "B" (JPM) of the operating test. This candidate was graded satisfactory on only eight out of ten systems. A grade of satisfactory on eight out of ten systems is the minimum required to pass. The licensee was provided with a copy of each candidate's examination to allow development of appropriate remedial training and to evaluate the initial operator training program for weaknesses. The examiners documented a significant number of deficiencies as a result of poor candidate performance which can be evaluated to determine generic training weaknesses.

The examiners evaluated the results of the RO and SRO written examinations. The examiners identified two questions (71 and 74) where five out of six candidates selected an incorrect answer. This indicated a generic weakness in the subject matter tested. One question concerned the reason why air handling fans must be secured during a fire in the intermediate building and the other question dealt with which nuclear instrument detectors can be used to satisfy the operability requirements of Technical Specification 3.3.9 (Source Range Neutron Flux). Two other questions (35 and 49) were missed by four out of six candidates and should also be evaluated to determine if a training weakness exists.

The examiners identified several generic weaknesses from the results of the operating test. Two candidates failed the administrative section of the examination. Both were unable to correctly perform shutdown margin calculations. One candidate was unable to demonstrate how to perform a temporary change to a procedure and could not even locate the procedure. Five of six candidates had negative comments noted on the administrative section of the operating test. The examiners also noted throughout the examination that candidates had difficulty explaining or implementing the rules contained in EOP-13, "EOP RULES." In addition, the examiners identified that most of the candidates had difficulty with the JPM follow-up questions. Post-examination analysis indicated a large number of comments concerning answers to these questions. While three candidates failed the examination in just one area, the examiners noted that several different areas of the examination supported the examiner's conclusion of marginal or unsatisfactory performance by these candidates.

3.0 Procedure Discrepancies

The examiners noted several procedural problems during the administration of the examination. The most significant discrepancy involved EOP-3 (Inadequate Subcooling Margin) step 3.9 which stated, "If RC TEMP is increasing due to lack of heat transfer, then GO TO EOP-04, "Inadequate Heat Transfer", beginning with step 3.1." The details section of this

step indicated that if Emergency Feedwater (EFW) and Main Feedwater (MFW) were lost, this was a condition requiring transfer to EOP-04. This was an event rather than symptom based transfer. The examiners noted that if adequate break cooling existed as evidenced by the subcooling monitor and incore temperatures decreasing, then this transition was unnecessary since transition to EOP-08 (LOCA Cooldown) would have occurred in step 3.13. The examiners observed a crew perform the actions of EOP-03 to combat a loss of subcooling margin due to a LOCA. When step 3.9 was reached, no EFW or MFW was available and the crew transitioned to EOP-04. At the time of the transition, High Pressure Injection (HPI) had been throttled, subcooling margin was a very satisfactory 80 degrees and increasing, and the core was adequately cooled. The required actions of EOP-04 caused the crew to establish HPI/PORV cooling. In essence what the crew did was to open a hole in the RCS and make the break larger. With the PORV now fully opened RCS pressure and temperature began to rapidly decrease. A controlled cooldown now became uncontrolled. The crew then attempted to increase HPI flow in accordance with EOP-04 step 3.7. However, this action was incorrect since PTS guidelines were in effect (Rule #2, HPI Control). The licensee acknowledged the procedural problem and has incorporated the change into a new and complete revision of EOP-03 that will be issued prior to startup. Step 3.9 is now step 3.27 in EOP-03 Rev 4 and is symptom based.

The EOP-06, "Steam Generator Tube Rupture" step 3.3 contained sequence sensitive steps (numbered steps) which required letdown to be isolated prior to tripping the reactor if pressurizer level decreased below 100 inches. There is negligible consequence if these steps are performed out of order. The examiners observed candidates perform these steps out of order or not isolate letdown altogether during a JPM. Additionally, procedure AI-505 step 4.1.1 required manual reactor trip if pressurizer level was less than 100 inches and decreasing. The examiners did not penalize the candidates for failure to follow the EOP procedure rules of usage because of this different guidance.

The examiners noted that a JPM entitled "Startup the Generator" contained a note which defined two success paths. The JPM was set up to cause a rapid steam header pressure drop when the candidate closed the generator breaker. The candidate could either take manual control and attempt to control the generator loading, or trip the turbine if pressure dropped below 750 psig. The examiners noted that procedure OP-203, "Plant Startup", step 4.2.36 contained no procedural guidance to take manual control of the turbine generator. It did, however, mandate a turbine trip if pressure dropped below 750 psig. Some candidates took manual control during the exam. One candidate made no effort to take manual control and allowed pressure to drop below 750 psig at which time he tripped the turbine. Yet another took manual control, allowed pressure to drop below 750 psig because he was not monitoring the instrument, recovered steam header pressure, noticed the chart recorder indicated pressure had dropped below 750 psig, and then tripped the turbine when all parameters were stable. The examiners noted the wide range of

performance and attributed the problem to a conflict between perceived management expectations and actual procedural guidance. The procedure did not specify the success path that the approved JPM standard contained.

The procedural problems noted above affected the performance of the candidates during the examination. In a like manner, procedural problems such as these will impact operators on watch if faced with similar transients or events.

4.0 Simulator Facility

The examiners observed simulation facility operation throughout the simulator and walk-through portions of the examination. The examiners determined that the simulation facility performed satisfactorily in support of the examination with the exception of those items noted in Enclosure (2). The most significant problem noted was the spurious trip of Emergency Feedwater Pump (EFP-2) during the major transient events. This unplanned malfunction drastically altered the mitigation strategy of two validated scenarios and resulted in the expected operator actions associated with these scenarios being incorrect. The examiners had to reconstruct the events and expected operator actions to grade the candidates' performance on these scenarios.

5.0 Control Room Observations (71715)

During validation and administration of the examination, the examiners observed the conduct of operations by currently licensed operators in the control room. The ROs were attentive to the evolutions in progress during the outage. The SRO supervising control room operations limited personnel access for official business only, which contributed to a quiet, professional atmosphere.

During the walkthrough portion of the examination the examiners noted magic marker labels on chart recorders in relay racks located adjacent to the EFIC cabinets. The examiners also noted that the material condition of EFP-2 was degraded in that evidence indicated personnel had stepped on piping, crushing the lagging, and also had stepped on an instrument line. One examiner noticed personnel climbing on piping inside the Emergency Diesel Generator coolers around which were numerous small instrument lines. This was immediately brought to the attention of the licensee and corrected. The examiners also noted several breaker locking devices were adrift and no apparent controls on these devices were in place.

6.0 Review of Updated Final Safety Analysis Report (UFSAR) Commitments

A recent discovery of a licensee operating their facility in a manner contrary to the UFSAR description, highlighted the need for a special focused review that compares plant practices, procedures, and/or parameters to the UFSAR descriptions. While performing the examinations discussed in this report, the examiners reviewed the facilities' UFSAR regarding the Small Break LOCA. The examiners verified that the UFSAR

wording was consistent with the observed plant practices, procedures, and/or parameters. During the examination, there were no deviations noted between the plant and its description in the UFSAR.

7.0 Exit Meeting

At the conclusion of the site visit, the examiners met with representatives of the plant staff listed in paragraph 1 to discuss the results of the examinations. The licensee did not identify as proprietary any material provided to, or reviewed by the examiners. No dissenting comments were received.

8.0 List of Acronyms

AI - Administrative Instruction
EFIC - Emergency Feedwater Initiation and Control System
EFP - Emergency Feedwater Pump
EFW - Emergency Feedwater
EOP - Emergency Operating Procedure
HPI - High Pressure Injection
JPM - Job Performance Measure
LOCA - Loss of Coolant Accident
MFW - Main Feedwater
NRC - Nuclear Regulatory Commission
PORV - Power Operated Relief Valve
PTS - Pressurized Thermal Shock
RCS - Reactor Coolant System
RO - Reactor Operator
SRO - Senior Reactor Operator

SIMULATOR FACILITY REPORT

Facility Licensee: Florida Power Company

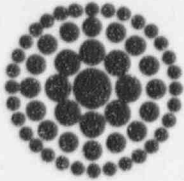
Facility Docket Nos.: 50-302

Operating Tests Administered On: March 26 - 28, 1996

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

While conducting the simulator portion of the operating tests, the following items were observed:

| <u>ITEM</u> | <u>DESCRIPTION</u> |
|------------------|--|
| Simulator lockup | During the first scenario the simulator CPU failed to process information causing an interruption of the examination for 15 minutes. |
| EFP-2 Trip | The simulator created an additional malfunction on two different scenarios by inadvertently causing EFP-2 to trip on overspeed. |
| MUV-58 | During performance of a JPM the simulator caused an additional malfunction by failing the motor operator on MUV-58. |



**Florida
Power**
CORPORATION

ENCLOSURE 3

March 26 , 1996
TRA96-0012

Mr. George Hopper
US Nuclear Regulatory Commission
Suite 2900
101 Marietta Street, NW
Atlanta, Georgia 30323-0199

Dear Mr. Hopper:

Subject: Written Examination Report

In accordance with the NRC Initial Pilot Examination Guidelines, please find enclosed the written examinations report for the SRO and RO initial examinations given at Crystal River Unit 3 on March 22, 1996. We are including our post examination comments and recommended action for each question.

If you desire any further information, please contact Mr. Johnie Smith, Nuclear Operations Training Supervisor, at (352) 795-0504 ext. 6107.

Sincerely,

Rolf C. Widell
Director, Nuclear
Operations Training

JGS/RCW:mlg
Enclosures

13. The plant is at 100% FP when a Reactor Building Isolation and Cooling actuation occurs. Which ONE of the following combinations would be the indications found at RC-001-LIC, "MUV-31 PZR LEVEL CONTROL" and MUV-24-FI "RC MAKEUP FLOW" after 10 minutes, if the operator made no adjustments to the pressurizer level setpoint?

- A. RC-001-LIC indicates 100% demand; MUV-24-FI indicates no flow.
- B. RC-001-LIC indicates 0% demand; MUV-24-FI indicates no flow.
- C. RC-001-LIC indicates 100% demand; MUV-24-FI indicates flow.
- D. RC-001-LIC indicates 0% demand; MUV-24-FI indicates flow.

Ans: A

K/A #: 004000K302

Rating: 3.7

Task #: 0040101015

History: MODIFIED BANK

SRO/RO: both

Lesson Plan Objective: ROT-4-52 B14
ROT-4-60 B8

Lesson Plan Reference: ROT-4-52 page 3

COMMENT: The answer key incorrectly identified choice "A" as the correct answer. The correct answer was choice "B".

EXAMINATION: SRO and RO question 13

RECOMMENDATION: Accept "B" as the correct answer.

19. Which ONE of the following lists the locations of the connections to the RCS for the High Pressure Injection lines, Low Pressure Injection lines and Core Flood lines (respectively)?

- A. Reactor Coolant Pump's suction lines; connected through Core Flood; direct connection to the Reactor Vessel.
- B. Reactor Coolant Pump's discharge lines; connected through Core Flood; direct connection to the Reactor Vessel.
- C. Reactor Coolant Pump's suction lines; direct connection to the Reactor Vessel; connected through Low Pressure Injection.
- D. Reactor Coolant Pump's discharge lines; connected through Core Flood; direct connection to the Reactor Vessel.

Ans: B

K/A #: 002000K108

Rating: 4.5

Task #: 0020101009

History: MODIFIED BANK

SRO/RO: both

Lesson Plan Objective: ROT-4-60 B2

Lesson Plan Reference: ROT-4-60 page 51

COMMENT: The answer key identified choice "B" as the correct answer. During the exam it was pointed out by the candidates that answer "B" and "D" were worded the same.

EXAMINATION: SRO and RO question 19

RECOMMENDATION: Based on this question having only two incorrect distractors and the correct answer being repeated in choice "B" and "D" it is recommended that this question be deleted from the exam. It should be noted that all candidates picked choice "B" as the correct answer.

69. Given the following conditions:

- o RCS pressure is 2155 psig
- o NI-5 reads 46%
- o NI-6 reads 47%
- o NI-7 reads 45%
- o NI-8 reads 46%
- o Total Feedwater flow is 1.0×10^6 lpm/hr)

Which ONE of the following would be the expected response of the main turbine, emergency feedwater and the reactor?

- A. The reactor and the main turbine are tripped; emergency feedwater has actuated.
- B. The reactor is NOT tripped; the main turbine is tripped; emergency feedwater has actuated.
- C. The reactor is NOT tripped; the main turbine is tripped; emergency feedwater has NOT actuated.
- D. The reactor and the main turbine are NOT tripped; emergency feedwater has NOT actuated.

Ans: B

K/A #: 000029EA201

Rating: 4.7

Task #: 0120101015

History: BANK

SRO/RO: SRO

Lesson Plan Objective: ROT-4-12 B5

Lesson Plan Reference: ROT-4-12 page 46

COMMENT: The answer key incorrectly identified choice "B" as the correct answer. The correct answer was choice "A".

EXAMINATION: SRO question 69

RECOMMENDATION: Accept "A" as the correct answer.

NRC RESOLUTION OF COMMENTS

1. SRO and RO Question # 13

Comment accepted. The answer key was changed to accept choice "B" as the correct answer.

2. SRO and RO Question # 19

Comment accepted. The question was deleted from both examinations due to there being only 2 distractors and the correct answer being repeated in choices "B" and "D".

3. SRO Question # 69

Comment accepted. The answer key was changed to accept choice "A" as the correct answer.

ORIGINAL

Master 96-300 cr

U.S. NUCLEAR REGULATORY COMMISSION
SITE-SPECIFIC
WRITTEN EXAMINATION ANSWER KEY

APPLICANT INFORMATION

| | |
|-------------------|--------------------------------|
| Name: | Region: II |
| Date: | Facility/Unit: Crystal River 3 |
| License Level: RO | Reactor Type: PWR - B&W 177 |

INSTRUCTIONS

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

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

Applicant's Signature

RESULTS

| | | |
|-------------------|--------------------|--------|
| Examination Value | _____ 100.00 _____ | Points |
| Applicant's Score | _____ | Points |
| Applicant's Grade | _____ | % |

ORIGINAL

NRC RULES AND GUIDELINES FOR LICENSE EXAMINATIONS

During the administration of this examination the following rules apply:

1. Cheating on the examination will result in a denial of your application and could result in more severe penalties.
2. After you complete the examination, sign the statement on the cover sheet (in black ink) indicating that the work is your own and you have not received or given assistance in completing the examination.
3. To pass the examination, you must achieve a grade of 80% or greater.
4. All questions will be worth one (1) point.
5. There is a time limit of 4 hours for completing the examination.
6. Use only dark pencil to ensure legible copies.
7. Print your name in the blank provided on the examination cover sheet and the answer sheet.
8. Mark your answers on the answer sheet provided and do not leave any question blank.
9. If the intent of a question is unclear, ask question of the examiner only.
10. Restroom trips are permitted, but only one applicant at a time will be allowed to leave. Avoid all contact with anyone outside the examination room to eliminate even the appearance or possibility of cheating.
11. When you complete the examination, assemble a package including the examination questions, examination aids, and answer sheets and give it to the examiner or proctor. Remember to sign the statement on the examination cover sheet.
12. After you have turned in your examination, leave the examination area as defined by the examiner.

1. A maintenance worker enters the Reactor Building to perform a job. The worker's initial exposure history for the current year is as follows:

TEDE = 3.0 Rem
Extremities = 26.5 Rem
Eye = 13.8 Rem
All NRC forms are complete

During the performance of this job he receives the following doses:

Chest TLD = 0.5 Rem
Hand TLD = 17.0 Rem
Head TLD = 3.0 Rem

Which ONE of the following statements is correct concerning his exposure status AFTER the above exposure?

- A. The worker has exceeded the federal exposure limit for extremities only.
- B. The worker has exceeded the federal exposure limit for extremities and the eye.
- C. The worker has exceeded the federal exposure limit for the eye only.
- D. The worker has NOT exceeded any federal exposure limit.

Ans: C

K/A #: 194001K103

Rating: 2.8

Task #: NTS (ACAD 93-009)

History: NEW

SRO/RO: both

Lesson Plan Objective: ROT-5-43 B3 (GT-001 #13 Rad. Worker Trng.)

Lesson Plan Reference: ROT-5-43 page 3

Procedure Reference: HPP-300 page 4

2. Both AH-648-CE and AH-649-CE (Chlorine detectors) have exceeded their actuation setpoint for high chlorine concentration. Toxic Gas Actuation has occurred. If all system components have operated normally, which of the following describes Control Complex configuration?

- A. The Controlled Access Area Exhaust Fans (AHF-20A/20B) will trip if in slow speed and the Control Complex Relief Fans AHF-21A/B) will be tripped.
- B. The Control Complex Normal Duty Supply Fans (AHF-17A/B) will trip and the Control Complex Emergency Duty Supply Fans (AHF-18A/B) will auto start.
- C. The Control Complex Normal Duty Supply Fan (AHF-17A/B) will be running and the Control Complex Return Fan (AHF-19A/B) will be running.
- D. The selected Control Access Area Exhaust Fan (AHF-20A/B) will be running in fast speed and the Control Complex Relief Fans (AHF-21A/B) will be running.

Ans: C

K/A #: 194001K111

Rating: 3.4

Task #: 0880401001

History: MODIFIED BANK

SRO/RO: both

Lesson Plan Objective: ROT-4-87 B6

Lesson Plan Reference: ROT-4-87 pages 2, 3, 4, 5, 6 and 7

Procedure Reference: AP-513 page 3

3. You are performing an Independent Verification (second checker) of a tagout on the Make-up and Purification System. The "First Person" clearing the tagout asks you to observe him repositioning a throttle valve.

Select the proper Independent Verifier (second checker) response.

- A. This is appropriate because it is a throttle valve.
- B. This is incorrect because it is NOT "Independent Verification."
- C. This is appropriate because it is restoration of a non-safety system component.
- D. This is incorrect because no "hands on" was performed by the observer.

Ans: A

K/A #: 194001K101

Rating: 3.6

Task #: NTS

History: BANK; NRC 11-93

SRO/RO: RO

Lesson Plan Objective: ROT-5-40 B2 (ST-002 #1)

Procedure Reference: CP-115 pages 3 and 15

4. Which ONE of the following describes the power supplies to the Control Rod Drive System? (Assume normal line-up.)

- A. 480 VAC Plant Auxiliary Bus, through "A" CRD breaker.
480 VAC Plant Auxiliary Bus, through "B" CRD breaker.
- B. 480 VAC Reactor Auxiliary Bus "3A", through "A" CRD breaker.
480 VAC Reactor Auxiliary Bus "3B", through "B" CRD breaker.
- C. 480 VAC Plant Auxiliary Bus, through "A" CRD breaker.
480 VAC Reactor Auxiliary Bus "3B", through "B" CRD breaker.
- D. 480 VAC Reactor Auxiliary Bus "3A", through "A" CRD breaker.
480 VAC Plant Auxiliary Bus, through "B" CRD breaker.

Ans: D

K/A #: 001000K202

Rating: 3.6

Task #: 0010101001

History: BANK; NRC 5-93

SRO/RO: both

Lesson Plan Objective: ROT-4-28 B2

Lesson Plan Reference: ROT-4-28 page 2

Procedure Reference: OP-700A pages 16 and 23

5. Technical Specification 3.4.1, RCS Pressure, Temperature, and Flow Departure from Nucleate Boiling (DNB) limits, requires verification of RCS total flow every 12 hours. The surveillance requirement for RCS total flow is $\geq 139.7 \text{ E6 lb/hr}$ with four RCPs operating or $\geq 104.4 \text{ E6 lb/hr}$ with three RCPs operating. Which ONE of the following is the procedure and location where RCS total flow is read to meet this surveillance?
- A. SP-225, Reactor Coolant Flow Measurement at Hot Full Power; Main Control Board ICS section
 - B. SP-225, Reactor Coolant Flow Measurement at Hot Full Power; Main Control Board PSA section
 - C. SP-300, Operating Daily Log Surveillance; Main Control Board ICS section
 - D. SP-300, Operating Daily Log Surveillance; Main Control Board PSA section

Ans: C

K/A #: 003000A304

Rating: 3.6

Task #: 0160101002

History: NEW

SRO/RO: both

Lesson Plan Objective: ROT-4-09 B1
ROT-5-01 B3

Lesson Plan Reference: ROT-4-09 page 39
ROT-4-60 page 21
ROT-5-01 page 1

Procedure Reference: SP-300 page 28

6. The plant is at 95% Rated Thermal Power (RTP) with normal temperature and pressure conditions. The Diamond Panel is in Manual with rod manipulations in progress. The following indications are observed:

- o Both System Power Supply lights are on
- o Both Motor Power Supply lights are on
- o Control light for Control Rod Group 7 is on
- o Control lights for Control Rod Groups 1, 2, 3, 4, 5, and 6 are off
- o No In Limit lights are on
- o Out Limit lights for Control Rod Groups 1, 2, 4, 5, and 6 are on
- o Out Limit lights for Control Rod Groups 3 and 7 are off
- o Fault Reset light is off

All other indication lights are in their expected state.

PI Panel Indication: Group 7 rod 3 has an asymmetric (5%) amber light on the PI panel illuminated. Group 3 rods 100% red lights are OFF.

The Reactor Operator attempts to withdraw group 7, however no rod motion occurs. Which ONE of the following is the reason for this condition?

- A. An asymmetric rod fault.
- B. A CRD power fault.
- C. Safety rods not out.
- D. A sequence fault.

Ans: C

K/A #: 001000A305

Rating: 3.5

Task #: 0010101009

History: BANK

SRO/RO: RO

Lesson Plan Objective: ROT-4-28 B17

Lesson Plan Reference: ROT-4-28 pages 13 and 35

7. During "Emergency Boration" besides the red light indicating CAV-60 is open which ONE of the following would verify the valve is open?

- A. Batch Controller readout, on the Control Board, PSA panel.
- B. Flow instrument, at the Boric Acid Pumps, Auxiliary Building.
- C. Flow instrument, next to MUV-24, on the Control Board ES panel "A".
- D. Batch Controller readout, on its Local Panel, Auxiliary Building.

Ans: B

K/A #: 000024EA104

Rating: 3.6

Task #: 0090101002 (0000501025)
0090106011

History: NEW

SRO/RO: both

Lesson Plan Objective: ROT-4-58 B1, B3, and F2

Lesson Plan Reference: ROT-4-58 page 4 and 5

Procedure Reference: OP-403B page 13

8. The plant has lost all Nuclear Services Closed Cycle Cooling (SW) for 10 minutes. AP-330, Loss of Nuclear Service Cooling has been entered. A step in the procedure states:

IF SW flow is lost to the RCPs,
THEN perform the following details.

Continue in this procedure.

- 1 ___ Note the time that SW flow to the RCPs was lost: _____

IF SW flow is lost for 5 min.
THEN perform the following:

- 2 ___ Ensure the Rx is tripped.
3 ___ Start the RCP AC oil lift pumps.
4 ___ Stop all RCPs.
5 ___ Isolate SW to the RCPs by closing the following valves:

| | |
|-------------------------------------|-------------------------------------|
| <input type="checkbox"/> ___ SWV-80 | <input type="checkbox"/> ___ SWV-84 |
| <input type="checkbox"/> ___ SWV-79 | <input type="checkbox"/> ___ SWV-83 |
| <input type="checkbox"/> ___ SWV-82 | <input type="checkbox"/> ___ SWV-86 |
| <input type="checkbox"/> ___ SWV-81 | <input type="checkbox"/> ___ SWV-85 |

- 6 ___ Ensure EFP-2 starts.
7 ___ Place EFP-1 in "PULL TO LOCK".

Which ONE of the following explains why this step is performed?

- A. Failure to perform this step can lead to damage in the Reactor Coolant (RC) pump and/or motor.
B. Failure to perform this step can lead to flow balance problems and damage in other SW cooled components.
C. This step ensures that cooling water is available to equipment required for natural circulation.
D. This step isolates SW water to the thermal barrier preventing possible loss of RCS inventory to the system.

Ans: A

K/A #: 000026EK303

Rating: 4.0

Task #: 0080401001

History: NEW

SRO/RO: both

Lesson Plan Objective: ROT-5-61 B3

Lesson Plan Reference: ROT-5-61 page 10

Procedure Reference: AP-330 page 9

9. Given the following plant conditions:

Pressurizer spray valve is stuck partially open
Reactor coolant system pressure is 1335 psig
Reactor coolant system temperature is 538°F
All required automatic systems have actuated

Which ONE of the following actions must immediately be taken by the operator?

- A. Reduce operating Reactor Coolant Pumps to RCP-1A and RCP-1B.
- B. Make a Reactor Building entry to close the spray valve manually.
- C. Close the Pressurizer spray block valve.
- D. Stop all Reactor Coolant Pumps.

Ans: D

K/A #: 000027EK101

Rating: 3.1

Task #: 0000501025

History: BANK

SRO/RO: RO

Lesson Plan Objective: ROT-5-96 B6

Lesson Plan Reference: ROT-5-96 pages 59 & 63

Procedure Reference: EOP-13 page 3

10. A Radiation Work Permit specifies protective measures, and which ONE of the following.

- A. Directions for the pre-job briefing including members to be present and equipment to be used.
- B. Special instructions required to perform work safely in a radiological environment.
- C. Locations of radiological safe areas outside of a work area that are accessible.
- D. Reportable events requiring immediate and four (4) hour NRC notification.

Ans: B

K/A #: 194001K104

Rating: 3.3

Task #: NTS (ACAD 93-009)

History: NEW

SRO/RO: both

Lesson Plan Objective: ROT-5-43 B8

Lesson Plan Reference: ROT-5-43 page 8

Procedure Reference: RSP-101 page 4

11. Which ONE of the following should be performed to protect plant personnel from possible flashover or explosion?

- A. An announcement should be made over the public address system when operating 480 volt switchgear.
- B. No painting or other maintenance activities should be performed on vital buses when operating 120 volt switchgear.
- C. The battery rooms should be evacuated when battery testing is being performed.
- D. Personnel should be verified to be clear of affected areas prior to operating 4160 volt switchgear.

Ans: D

K/A #: 194001K107

Rating: 3.6

Task #: 0620101004

History: NEW

SRO/RO: both

Lesson Plan Objective: ROT-4-89 B2

Lesson Plan Reference: ROT-4-89 page 12

Procedure Reference: OP-703 page 5

12. Which ONE of the following phones in the Control Room would the Control Board operator expect to answer if an injured person is discovered in the Triangle room?

- A. The PAX phone on PL-1
- B. The commercial telephone system (UTF)
- C. The emergency intra-plant (red) phone
- D. The dedicated emergency phone

Ans: D

K/A #: 194001A104

Rating: 3.0

Task #: 0850104003

History: NEW

SRO/RO: RO

Lesson Plan Objective: ROT-4-92 G1

Lesson Plan Reference: ROT-4-92 pages 3, 4 and 5

Procedure Reference: EM-201 page 3 and 4

13. The plant is at 100% FP when a Reactor Building Isolation and Cooling actuation occurs. Which ONE of the following combinations would be the indications found at RC-001-LIC, "MUV-31 PZR LEVEL CONTROL" and MUY-24-FI "RC MAKEUP FLOW" after 10 minutes, if the operator made no adjustments to the pressurizer level setpoint?

- A. RC-001-LIC indicates 100% demand; MUY-24-FI indicates no flow.
- B. RC-001-LIC indicates 0% demand; MUY-24-FI indicates no flow.
- C. RC-001-LIC indicates 100% demand; MUY-24-FI indicates flow.
- D. RC-001-LIC indicates 0% demand; MUY-24-FI indicates flow.

Ans: A B ~~RC~~
4/1/96

K/A #: 004000K302

Rating: 3.7

Task #: 0040101015

History: MODIFIED BANK

SRO/RO: both

Lesson Plan Objective: ROT-4-52 B14
ROT-4-60 B8

Lesson Plan Reference: ROT-4-52 page 3

14. Given the following conditions:

- o Reactor is tripped
- o LOCA in progress
- o RCS pressure 1400 psig
- o Reactor building pressure 5 psig
- o Annunciator alarm, A-02-01, Diverse Containment Isolation A.

Which ONE of the following is the resulting positions of the following valves: Letdown Cooler Outlet Valves (MUV-40, MUV-41 and MUV-505) and Decay Heat Isolation to Reactor Coolant System Valves (DHV-5 and DHV-6) if all automatic functions perform as designed?

- A. MUV-40, MUV-41, MUV-505, DHV-5 and DHV-6 are all closed.
- B. MUV-40, MUV-41, MUV-505, DHV-5 and DHV-6 are all open.
- C. MUV-40, MUV-41 and MUV-505 are open; DHV-5 and DHV-6 are closed.
- D. MUV-40, MUV-41 and MUV-505 are closed; DHV-5 and DHV-6 are open.

Ans: D

K/A #: 013000G012

Rating: 3.9

Task #: 0130101001

History: MODIFIED BANK

SRO/RO: both

Lesson Plan Objective: ROT-4-13 B6

Lesson Plan Reference: ROT-4-13 pages 40, 58 and 59

Procedure Reference: AR-301 page 8
EOP-02 page 23

15. The plant is operating at 100% RTP when the following conditions are observed for the Reactor Coolant Pumps (RCPs):

| Time | 2nd Stage | 3rd Stage | 2nd Stage | 3rd Stage | 2nd Stage | 3rd Stage | 2nd Stage | 3rd Stage |
|------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| - | RCP-1A | | RCP-1B | | RCP-1C | | RCP-1D | |
| 0900 | 1300 | 700 | 1400 | 800 | 1650 | 900 | 1425 | 725 |
| 0910 | 1325 | 500 | 1375 | 825 | 1725 | 925 | 1400 | 775 |
| 0920 | 1300 | 450 | 1400 | 800 | 1750 | 950 | 1350 | 825 |
| 0930 | 1250 | 325 | 1425 | 800 | 1800 | 975 | 1300 | 875 |
| 0940 | 1200 | 205 | 1400 | 800 | 1850 | 1000 | 1250 | 950 |

If these trends continue, which ONE of the following would be the cause for the above readings?

- A. RCP-1A second stage seal failing; RCP-1B normal; RCP-1C first stage seal failing; RCP-1D second stage seal failing
- B. RCP-1A third stage seal failing; RCP-1B normal; RCP-1C second stage seal failing; RCP-1D third stage seal failing
- C. RCP-1A third stage seal failing; RCP-1B normal; RCP-1C first stage seal failing; RCP-1D second stage seal failing
- D. RCP-1A first stage seal failing; RCP-1B normal; RCP-1C second stage seal failing; RCP-1D third stage seal failing

Ans: C

K/A #: 003000K103

Rating: 3.3

Task #: 0020101018

History: MODIFIED BANK

SRO/RO: RO

Lesson Plan Objective: ROT-4-60 B9

Lesson Plan Reference: ROT-4-60 pages 14, 15 and 16

Procedure Reference: OP-302 page 3

16. The Main Fuel Handling Bridge Operator is in the Reactor Building moving fuel with the Main Fuel Handling Bridge, FHCR-1. The hoist is lowering a fuel assembly into the core. When the fuel assembly is 4 feet from the bottom of the core (verified by "ZZ" tape reading) the hoist stops movement. Which ONE of the following is the reason that the downward motion stops?

- A. The hoist motor reached overheat warning.
- B. The hoist entered the Slow Zone.
- C. The pneumatic pressure is 125 psi.
- D. The Fuel Grapple Underload is reached.

Ans: D

K/A #: 000036EK302

Rating: 2.9

Task #: NTS (0340101003)

History: MODIFIED BANK

SRO/RO: both

Lesson Plan Objective: ROT-4-26 F2

Lesson Plan Reference: ROT-4-26 page 4

17. While operating at full power all Off-Site power is lost, the "A" Diesel is inoperable due to routine maintenance and the "B" Diesel fails to energize its bus. Reactor Coolant pressure is 1735 psig and temperature is 555°F. The operators in the Control Room enter EOP-12, Station Blackout. What is the level requirement for the Steam Generator?

- A. ≈93% High Range
- B. ≈89% High Range
- C. ≈63% High Range
- D. ≈24 inches Low Range

Ans: C

K/A #: 000056EA288

Rating: 4.1

Task #: 0000501031

History: MODIFIED BANK

SRO/RO: both

Lesson Plan Objective: ROT-5-100 B4

Lesson Plan Reference: ROT-5-100 page 3

Procedure Reference: EOP-12 page 3

18. Due to a leak in the Instrument Air (IA) system, header pressure has decreased to 78 psig. Which one of the following is the correct **SEQUENCE** of automatic and/or operator actions?

- A. AP-470 Loss Of Instrument Air is entered; IAV-30 Cross Tie from station air closes; IAP-1A, IAP-1B, SAP-1A AND SAP-1B auto start.
- B. IAP-1A, IAP-1B, SAP-1A AND SAP-1B auto start; AP-470 Loss Of Instrument Air is entered; IAV-30 Cross Tie from station air closes.
- C. IAV-30 Cross Tie from station air closes; AP-470 Loss Of Instrument Air is entered; IAP-1A, IAP-1B, SAP-1A AND SAP-1B auto start.
- D. IAP-1A, IAP-1B, SAP-1A AND SAP-1B auto start; IAV-30 Cross Tie from station air closes; AP-470 Loss Of Instrument Air is entered.

Ans. B

K/A #: 000065G011

Rating: 3.4

Task #: 0780401001

History: BANK

SRO/RO: RO

Lesson Plan Objective: ROT-5-84 B1

Lesson Plan Reference: ROT-5-84 page 1

Procedure Reference: AP-470

19. Which ONE of the following lists the locations of the connections to the RCS for the High Pressure Injection lines, Low Pressure Injection lines and Core Flood lines (respectively)?

- Delete
4/11/96*
- A. Reactor Coolant Pump's suction lines; connected through Core Flood; direct connection to the Reactor Vessel.
 - B. Reactor Coolant Pump's discharge lines; connected through Core Flood; direct connection to the Reactor Vessel.
 - C. Reactor Coolant Pump's suction lines; direct connection to the Reactor Vessel; connected through Low Pressure Injection.
 - D. Reactor Coolant Pump's discharge lines; connected through Core Flood; direct connection to the Reactor Vessel.

Ans: B

K/A #: 002000K108

Rating: 4.5

Task #: 0020101009

History: MODIFIED BANK

SRO/RO: both

Lesson Plan Objective: ROT-4-60 B2

Lesson Plan Reference: ROT-4-60 page 51

20. The following was the plant status at 1205:

- o Reactor Coolant System (RCS) pressure is 2155 psig.
- o Reactor Building (RB) pressure is 0.5 psig.
- o MUP-1A is running and ES selected.
- o MUP-1B is not running and powered from the "A" ES 4160V bus
- o MUP-1C is not running and is ES selected.

At 1210 RCS pressure is 1490 psig and RB pressure is 3.5 psig. Select the mode of operation for the Make-up pumps if no operator action has been taken.

- A. MUP-1A is running
MUP-1B is running
MUP-1C is running
- B. MUP-1A is running
MUP-1B is running
MUP-1C is off
- C. MUP-1A is running
MUP-1B is off
MUP-1C is off
- D. MUP-1A is running
MUP-1B is off
MUP-1C is running

Ans: D

K/A #: 006020A301

Rating: 4.2

Task #: 0130101001

History: BANK: NRC 11-93

SRO/RO: both

Lesson Plan Objective: ROT-4-13 B6

Lesson Plan Reference: ROT-4-13 pages 7 and 57

Procedure Reference: EOP-02 page 23

21. Which ONE of the following correctly identifies why the amber fault light for control rod 2, group 7, on the PI Panel would be ON?

- A. Control rod 2, group 7, position is > 7% out from the group average.
- B. Control rod 2, group 7, position is > 9% out from the group average.
- C. Control rod 2, group 7, position is > 7" out from the group average.
- D. Control rod 2, group 7, position is > 9" out from the group average.

Ans: C

K/A #: 014000K406

Rating: 3.4

Task #: 0010401001

History: BANK

SRO/RO: RO

Lesson Plan Objective: ROT-4-28 B18

Lesson Plan Reference: ROT-4-28 page 14

22. Assume that the plant is at 40% power and the Integrated Control System (ICS) is in "Auto" when the main turbine trips. The ICS should runback to a ULD output of _____% at a rate of _____%/min.

- A. 15%, 30%/min
- B. 15%, 20%/min
- C. 20%, 30%/min
- D. 20%, 20%/min

Ans: B

K/A #: 045000K412

Rating: 3.3

Task #: 0410101001

History: MODIFIED BANK

SRO/RO: both

Lesson Plan Objective: ROT-4-14 B1

Lesson Plan Reference: ROT-4-14 page 73

Procedure Reference: AP-660 page 5

23. Given the following conditions:

- o The plant is at 100% power
- o The Nuclear Services Closed Cycle Cooling tank (SWT-1) is at 6.5 feet and decreasing a 1 foot/minute
- o WTP-6A and 6B, demineralized water pumps, have tripped and will not start.

Which ONE of the following actions can be performed to aid in maintaining inventory in the surge tank?

- A. Lineup Demineralized Water (DW) through both the manual fill valve and the normal fill valve for SWT-1.
- B. Lineup Decay Heat Closed Cycle Cooling (DC) and back flow water into the SW system.
- C. Lineup Domestic Water (DO) system supplied to the RWP flush pumps through cross connect to the SWT-1 normal fill valve.
- D. Lineup Fire Service (FS) water by connecting hose between Fire Service and Nuclear Services (SW).

Ans: D

K/A #: 076000A201

Rating: 3.5

Task #: 0080401001

History: BANK

SRO/RO: both

Lesson Plan Objective: ROT-4-56 B6

Lesson Plan Reference: ROT-4-56 page 32

Procedure Reference: AP-330 page 5

24. The plant is in Mode 6 with the fuel transfer tubes open with defueling operations underway. The Senior Reactor Operator inside the Reactor building (RB) notices an unexpected decrease in level of the fuel transfer canal. Which of the following is the correct action for this conditions?

- A. Enter EOP-11, Loss of Decay Heat Removal, and place fuel in a safe location.
- B. Enter EOP-11, Loss of Decay Heat Removal after immediately stopping the Decay Heat Pumps.
- C. Enter AP-1080, Refuel Canal Water Level Decrease, and place fuel in a safe location.
- D. Enter AP-1080, Refuel Canal Water Level Decrease, after immediately stopping the Decay Heat Pumps.

Ans: C

K/A #: 034000G015

Rating: 3.3

Task #: 0340401001

History: MODIFIED BANK

SRO/RO: RO

Lesson Plan Objective: ROT-4-26 B2

Lesson Plan Reference: ROT-4-26 page 16

Procedure Reference: AP-1080 pages 1, 3, and 5

25. Installed CARDOX (Carbon Dioxide) System protects fire hazard areas where a water based system could permanently damage the equipment. Which ONE of the following combinations of hazards use CARDOX?

- A. Both Main Feedwater Pumps and the Hydrogen Seal Oil Unit
- B. Both Main Feedwater Pumps and the Main Turbine bearings
- C. Both ES 4160V Switchgear rooms and the Hydrogen Seal Oil Unit
- D. Both ES 4160V Switchgear rooms and the Main Turbine bearings

Ans: B

K/A #: 194001K116

Rating: 3.5

Task #: 0860104003

History: NEW

SRO/RO: both

Lesson Plan Objective: ROT-4-07 G12

Lesson Plan Reference: ROT-4-07 page 17

26. Which ONE of the following describes an evolution that requires step-by-step performance with Working or Controlled Copy of the procedure in hand?

- A. Priming a Drain Trap (OP-606, Auxiliary Steam System)
- B. Recirculation of a Reactor Coolant Bleed Tank (OP-407G, Operation of the Reactor Coolant Bleed Tanks)
- C. Alternating Decay Heat Trains (OP-404, Decay Heat Removal System)
- D. Intake screen cleaning (OP-604, Circulating Water System)

Ans: C

K/A #: 194001A102

Rating: 4.1

Task #: NTS

History: NEW

SRO/RO: both

Lesson Plan Objective: ROT-5-77 G4

Procedural Reference: AI-400E pages 5 and 6
OI-09 pages 2 and 3

27. The following plant conditions exist:

- o Large Break LOCA in progress
- o RCS pressure is 550 psig
- o Tsat Monitor reads -25°
- o No RCPs are operating

Which ONE of the following methods would the operator use along with Reactor Coolant pressure to accurately substantiate core cooling?

- A. Reactor Coolant Thot
- B. Reactor Coolant Tave
- C. Incore Core Exit thermocouple temperature
- D. Pressurizer steam space temperature

Ans: C

K/A #: 017020A202

Rating: 3.6

Task #: 0170101007
0000501021

History: NEW

SRO/RO: RO

Lesson Plan Objective: ROT-4-11 B9

Lesson Plan Reference: ROT-4-11 page 8, 9 and 10
ROT-3-25 page 3

Procedure Reference: EOP-07 page 1

28. Given the following conditions:

- o A reactor trip has occurred from 100% power.
- o Concurrent with the reactor trip, a loss of both Main and Emergency Feedwater has occurred resulting in the PORV lifting and sticking open.

Select the required EOP section to be entered initially for these conditions.

- A. EOP-02, "Vital System Status Verification."
- B. EOP-03, "Inadequate Subcooling Margin."
- C. EOP-04, "Inadequate Heat Transfer."
- D. EOP-07, "Inadequate Core Cooling."

Ans: A

K/A #: 000007G011

Rating: 4.1

Task #: 0000501025

History: MODIFIED BANK

SRO/RO: both

Lesson Plan Objective: ROT-5-96 B1

Lesson Plan Reference: ROT-5-96 page 1

Procedure Reference: EOP-02 page 1

29. A plant startup is in progress; as reactor power was being increased from 10% Rated Thermal Power (RTP) to 15% RTP, Reactor Coolant System (RCS) pressure increased to 2225 psig and then decreased. The following indications are also observed:

- o RCV-14 green indicator light is on
- o RCV-13, Pressurizer Spray Block Valve, red indicator light is on
- o RCV-10, PORV, green indicator light is on
- o RCV-11, PORV Block Valve, red indicator light is on
- o RCS Tave is fluctuating around 580°F
- o RCS pressure is slowly decreasing
- o Subcooling margin is 35° and slowly decreasing
- o Makeup flow is steady

Which ONE of the following describes the cause of the indications and the correct operator response?

- A. Pressure is decreasing due to an overcooling event, all groups of Pressurizer Heaters should be turned on.
- B. Pressure is decreasing due to an overcooling event, the PORV and Spray Block Valves should be closed.
- C. Pressure is decreasing due to RCV-10 or RCV-14 being open, all groups of Pressurizer Heaters should be turned on.
- D. Pressure is decreasing due to RCV-10 or RCV-14 being open, the PORV and Spray Block Valves should be closed.

Ans: D

K/A #: 000008EA101

Rating: 4.2

Task #: 1020401001
0000501026

History: NEW

SRO/RO: both

Lesson Plan Objective: ROT-3-20 B3

Lesson Plan Reference: ROT-3-20 page 13

Procedure Reference: OP-301 page 115

30. Given the following conditions:

- o A small break LOCA has occurred.
- o The reactor has been tripped.
- o 2 Make-Up pumps are running.
- o Subcooling Margin by incore temperatures 35°F
- o RCS pressure 1600 psig
- o Combined flow of Make-Up Pumps 1000 gpm

Based on the above plant conditions which ONE of the following applies?

- A. HPI must be throttled to prevent pump runout.
- B. HPI may be throttled anytime adequate subcooling margin exists based on incores.
- C. HPI may be throttled to prevent exceeding NDT limits.
- D. HPI must be throttled because HPI flow has been 1000 gpm for greater than 20 minutes.

Ans: B

K/A #: 000011EA211

Rating: 3.9

Task #: NTS
(0000501025)

History: BANK; NRC 11-93

SRO/RO: RO

Lesson Plan Objective: ROT-5-96 B4

Lesson Plan Reference: ROT-5-96 page 65

Procedure Reference: EOP-13 page 5

31. Which ONE of the following is the sample point and location for Radiation Monitor Liquid-5 (RM-L5)?

- A. Primary coolant letdown (MU); 119' AB, penetration area.
- B. Primary coolant letdown (MU); 95' AB, penetration area.
- C. Decay Heat Closed Cycle Cooling (DC); 95' AB, seawater room.
- D. Decay Heat Closed Cycle Cooling (DC); 119' AB, penetration area.

Ans: C

K/A #: 073000K101

Rating: 3.6

Task #: 0720101004

History: MODIFIED BANK

SRO/RO: both

Lesson Plan Objective: ROT-4-25 B1 and F2

Lesson Plan Reference: ROT-4-25 page 25

32. A substantial fire has occurred in the Makeup Pump Rooms. Which ONE of the following combinations of detection systems should be in alarm in the control room?

- A. Pyrotronics and Ventilation system detectors
- B. Pyrotronics and Fire-Lite Alarm detection systems
- C. Pyr-a-larm and Ventilation system detectors
- D. Pyr-a-larm and Fire-Lite Alarm detection systems

Ans: A

K/A #: 086000A402

Rating: 3.5

Task #: 0860104003

History: NEW

SRO/RO: both

Lesson Plan Objective: ROT-4-07 G1

Lesson Plan Reference: ROT-4-07 pages 2, 3, 4 and 5

33. A follow-up action in AP-470, Loss of Instrument Air, states:

- 3.12 IF IA leak is between IAPs and first loop isolation valves (IAV-21, 22, 26 and 27), THEN isolate the leak, AND crosstie SA to IA
- 1 Ensure the following are closed:
 - _____ IAV-10 (95' TB near IAV-30)
 - _____ IAV-5 (95' TB E of IAT-1B)
 - _____ IAV-21 (O/H, E of Bus Duct Clr)
 - _____ IAV-22 (O/H, E of Bus Duct Clr)
 - _____ IAV-26 (O/H, S of IAPs)
 - _____ IAV-27 (O/H, S of IAPs)
 - 2 Ensure the following are open:
 - _____ SAV-30 (above IAT-1A)
 - _____ SAV-31 (above IAT-1A)
 - _____ SAV-128 (119' IB above PZR HTR MCC 3A)

Which ONE of the following is the reason for performing this step?

- A. This will allow the Turbine Building Loops to repressurize from the Instrument Air Compressors.
- B. This will allow the Turbine Building Loops to repressurize from the Station Air Compressors.
- C. This will allow the Auxiliary Building Loops to repressurize from the Instrument Air Compressors.
- D. This will allow the Auxiliary Building Loops to repressurize from the Station Air Compressors.

Ans: B

K/A #: 079000K101

Rating: 3.0

Task #: 0780401001

History: NEW

SRO/RO: RO

Lesson Plan Objective: ROT-5-84 B3

Lesson Plan Reference: ROT-5-84 pages 9 and 10

Procedure Reference: AP-470 page 9

34. Step 3.22 of EOP-07, Inadequate Core Cooling, states: Bypass Reactor Coolant Pump (RCP) start permissives AND start all RCPs. Which ONE of the following is the reason for performing this step?

- A. The plant is in Region 4; this is an attempt to move all water trapped in the cold legs to the core.
- B. The plant is in Region 4; this is an attempt to prevent forced two phase flow through the core.
- C. The plant is in Region 3; this is an attempt to move all water trapped in the cold legs to the core.
- D. The plant is in Region 3; this is an attempt to prevent forced two phase flow through the core.

Ans: A

K/A #: 000074EK307

Rating: 4.0

Task #: 0000501021

History: BANK

SRO/RO: both

Lesson Plan Objective: ROT-5-97 B3
ROT-3-25 B3

Lesson Plan Reference: ROT-5-97 page 22
ROT-3-25 page 9

Procedure Reference: EOP-07 pages 20 and 21

35. Which of the following would cause the control board operator to request chemistry to sample for failed fuel?

- A. Power has been stable at 80% RTP for the last 4 hours; RM-L1, letdown monitor, is in warning.
- B. Power has been stable at 80% RTP for the last 4 hours; RM-A7, nuclear sample room monitor, is in warning.
- C. Power decreased rapidly 2 hours ago but is now stable at 55% RTP; RM-L1, letdown monitor, is in warning.
- D. Power decreased rapidly 2 hours ago but is now stable at 55% RTP; RM-A7, nuclear sample room monitor, is in warning.

Ans: A

K/A #: 000076EA104

Rating: 3.2

Task #: 0020101009

History: NEW

SRO/RO: both

Lesson Plan Objective: ROT-5-78 B12

Lesson Plan Reference: ROT-5-78 page 40

Procedure Reference: OP-301 page 114

36. Given the following conditions:

- o SWP-1A has automatically started
- o RCP Motor Cooling Air/Lower Oil Reservoir temperatures:
 - RCP-1A - 135°F/137°F
 - RCP-1B - 130°F/132°F
 - RCP-1C - 138°F/130°F
 - RCP-1D - 128°F/127°F

- o CRDMs temperatures:
 - ROD 2-1 160°F
 - ROD 2-3 165°F
 - ROD 3-4 162°F
 - ROD 3-5 173°F
 - ROD 4-3 180°F
 - ROD 4-7 175°F
 - ROD 5-2 167°F
 - ROD 6-2 153°F
 - ROD 6-5 181°F
 - ROD 7-4 177°F

Which ONE of the following describes the action that should be taken next?

- A. The operator should consult AP-330, Loss of SW.
- B. The operator should ensure that SW raw water is aligned correctly.
- C. The operator should trip the reactor.
- D. The operator should start SWP-1B and trip SWP-1A.

Ans: C

K/A #: 000026G011

Rating: 3.4

Task #: 0080401001

History: NEW

SRO/RO: RO

Lesson Plan Objective: ROT-5-61 B1

Lesson Plan Reference: ROT-5-61 page 1

Procedure Reference: AP-330 page 1

37. RM-G5, Gas Decay Tank area monitor, needs to have its HIGH setpoint adjusted. Which ONE of the following is the method for setpoint adjustment?

- A. By turning the WARNING/HIGH/OPERATE switch to the HIGH position; hold this switch while rotating internal adjustment shaft to alter setpoint; release switch to OPERATE.
- B. By turning the WARNING/HIGH/OPERATE switch to the HIGH position; rotate internal adjustment shaft to alter setpoint; return switch to OPERATE.
- C. By turning the ALARM RESET/OPERATE/CHECK SOURCE switch to the ALARM RESET position; hold this switch while rotating internal adjustment shaft to alter setpoint; release switch to OPERATE.
- D. By turning the ALARM RESET/OPERATE/CHECK SOURCE switch to the ALARM RESET position; rotate internal adjustment shaft to alter setpoint; return switch to OPERATE.

Ans: A

K/A #: 072000A401

Rating: 3.0

Task #: 0720106001

History: NEW

SRO/RO: both

Lesson Plan Objective: ROT-4-25 F2

Lesson Plan Reference: ROT-4-25 pages 8 and 9

38. The following are current plant conditions:

- o An emergency feedwater actuation has occurred.
- o All reactor coolant pumps are secured due to a loss of adequate subcooling margin.
- o The OTSG level setpoint was selected to Inadequate Subcooling level on the PSA/EFIC panel.

Which one of the following will be the steam generator level setpoint after a reactor coolant pump is restarted?

- A. Inadequate Subcooling Margin level is selected manually
- B. Inadequate Subcooling Margin level is selected automatically
- C. Low Level Limits is selected manually
- D. Low Level Limits is selected automatically

Ans: D

K/A #: 061000A303

Rating: 3.9

Task #: 0190101001

History: BANK; ROTs J - T9

SRO/RO: both

Lesson Plan Objective: ROT-4-15 B8

Lesson Plan Reference: ROT-4-15 pages 13 and 18

Procedure Reference: EOP-13 page 7

39. Following a reactor trip initiated by Low RCS Pressure you observe the following parameters:

- o RCS pressure 1810 psig and increasing.
- o RCS Tave 545°F and increasing.
- o OTSG "A" pressure 500 psig and slowly increasing.
- o OTSG "A" level 10 inches
- o OTSG "B" pressure 750 psig and increasing
- o OTSG "B" level 24 inches

Note that the above parameter values were the minimum conditions reached during this transient. Which ONE of the following describes the correct positioning of the Main Steam and Main Feedwater isolation valves?

- A. MSV-411 closed / FWV-36 closed / FWV-31 closed / MSV-413 closed / FWV-33 closed / and FWV-32 closed
- B. MSV-411 open / FWV-36 open / FWV-31 open / MSV-413 open / FWV-33 open / and FWV-32 open
- C. MSV-411 open / FWV-36 open / FWV-31 open / MSV-413 closed / FWV-33 closed / and FWV-32 closed
- D. MSV-411 closed / FWV-36 closed / FWV-31 closed / MSV-413 open / FWV-33 open / and FWV-32 open

Ans: D

K/A #: 059000A412

Rating: 3.4

Task #: 0190101001
0000501028

History: BANK

SRO/RO: RO

Lesson Plan Objective: ROT-4-15 B6

Lesson Plan Reference: ROT-4-15 page 31

Procedure Reference: EOP-5 page 9

40. RCP thrust bearing temperatures on RC-133-TI are as follows:

| RCP-1A | | RCP-1B | | RCP-1C | | RCP-1D | |
|--------|-------|--------|-------|--------|-------|--------|-------|
| UPPER | LOWER | UPPER | LOWER | UPPER | LOWER | UPPER | LOWER |
| 168°F | 110°F | 189°F | 100°F | 251°F | 175°F | 160°F | 112°F |

Assume the thrust bearing temperatures on the affected pump(s) continues to increase.

Based on current plant conditions, which ONE of the following statements is the required operator action?

- A. Start both lift oil pumps on RCP-1C; TRIP RCP-1C.
- B. Start both lift oil pumps on RCP-1B and RCP-1C.
- C. Start both lift oil pumps on RCP-1B and RCP-1C; TRIP RCP-1C.
- D. Start both lift oil pumps on RCP-1B and RCP-1C; TRIP both RCP-1B and RCP-1C.

Ans: C

K/A #: 000015EA208

Rating: 3.4

Task #: 0020101018

History: MODIFIED BANK

SRO/RO: both

Lesson Plan Objective: ROT-4-60 B18

Lesson Plan Reference: ROT-4-60 pages 27 and 32

Procedure Reference: OP-302 page 7

41. During full power operation (98%) a control rod is found to be untrippable. Which ONE of the following actions should be taken?
- A. Verify SDM is $\geq \Delta 1\%$ k/k in 1 hour OR be in MODE 3 in 6 hours.
 - B. Verify SDM is $\geq \Delta 1\%$ k/k in 1 hour AND be in MODE 3 in 6 hours.
 - C. Reduce thermal power to $\leq 60\%$ of the allowable thermal power in 2 hours OR verify SDM is $\geq 1\%$ $\Delta k/k$ in 1 hour.
 - D. Realign control rod to within 6.5% of the group average height in 1 hour AND initiate boration to restore SDM to within limit in 1 hour.

Ans: B

K/A #: 000005EK304

Rating: 3.4

Task #: 1190301015

History: NEW

SRO/RO: both

Lesson Plan Objective: ROT-5-01 B9

Procedure Reference: TS 3.1.4

42. The operating makeup pump (MUP) has tripped as a result of a loss of the 4160 ES bus. A MUP restart is required. Which one of the following is the reason why seal injection must be slowly increased?

- A. Allows time for the pressurizer level control valve to respond to the flow changes and stabilize pressurizer level.
- B. Prevents seal injection piping waterhammer caused by cold water flow into the hot seal injection piping.
- C. Prevents high differential pressure across the seal injection filters caused by rapid flow changes.
- D. Minimizes seal injection water induced thermal stresses to the pump seal package.

Ans: D

K/A #: 000022EK302

Rating: 3.5

Task #: 0640401003

History: BANK; ROTs J - T7

SRO/RO: RO

Lesson Plan Objective: ROT-5-30 B3

Lesson Plan Reference: ROT-5-30 page 16

Procedure Reference: AP-770 page 15

43. Which ONE of the following is the appropriate annotation for chart recorders to enable analysis of transients when unusual or significant events occur?

- A. Record time and operator initials
- B. Record time and event notation
- C. Record date and operator initials
- D. Record date and event notation

Ans. B

K/A #: 194001A106

Rating: 3.4

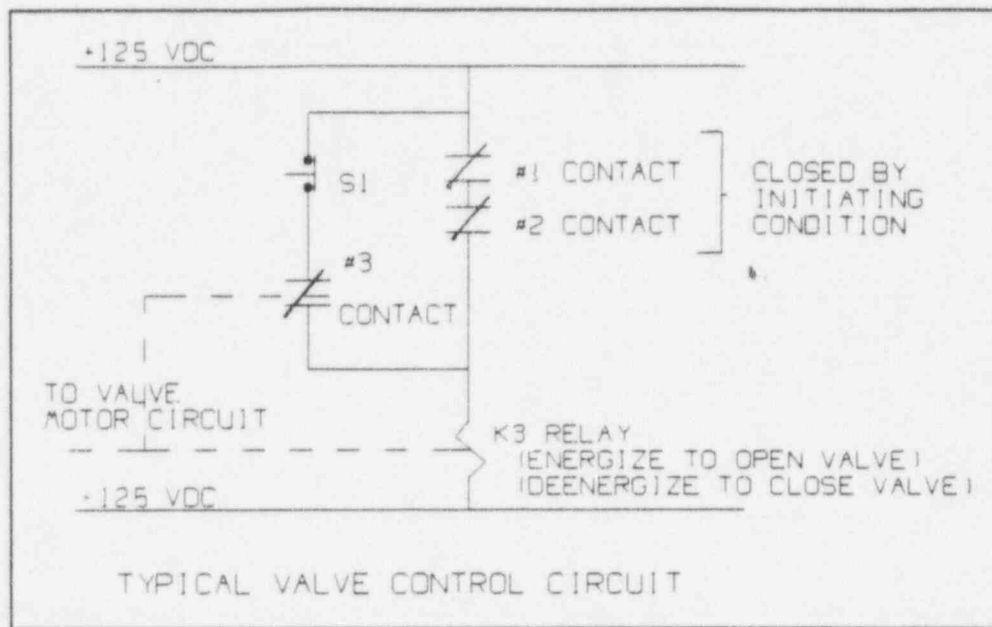
Task #: NTS

History: NEW

SRO/RO: both

Lesson Plan Objective: ROT-5-38 G9

Procedure Reference: OI-05 page 5



Which ONE of the following will close the valve?

- A. Loss of 125 VDC
- B. Both #1 and #2 contacts open
- C. Either #1 or #2 contact opens
- D. Depressing the S1 pushbutton with the initiating condition present

Ans: A

K/A #: 194001A107

Rating: 2.5

Task #: NTS

History: BANK

SRO/RO: both

Lesson Plan Objective: ROT-2-20 G3

Lesson Plan Reference: ROT-2-20 pages 14 and 15

45. During normal operation, power is lost from VBDP-4. Which ONE of the following combinations of Nuclear Instrumentation (NI) would lose power?

- A. Power would be lost to NI's 3 and 6.
- B. Power would be lost to NI's 2 and 5.
- C. Power would be lost to NI's 3 and 5.
- D. Power would be lost to NI's 2 and 6.

Ans: D

K/A #: 015000A201

Rating: 3.5

Task #: 0150101005

History: BANK; ROTs J - T9

SRO/RO: RO

Lesson Plan Objective: ROT-4-10 B3

Lesson Plan Reference: ROT-4-10 page 6

46. Which ONE of the following sets of Makeup Tank pressure and level indications require **NO** operator action under steady state conditions? (See Attachments for curve)

- A. 32 psig and 90 inches
- B. 30 psig and 91 inches
- C. 28 psig and 92 inches
- D. 26 psig and 93 inches

Ans: D

K/A #: 004010K501

Rating: 3.1

Task #: 0040101015

History: BANK; ROTs J - T5

SRO/RO: both

Lesson Plan Objective: ROT-4-52 B24

Lesson Plan Reference: ROT-4-52 page 15

Procedure Reference: OP-402 page 3

47. Assuming the plant was reducing power due to a steam leak inside the containment when a 4 psig Reactor Building Isolation and cooling occurred. Which of the following would be the expected Low Pressure Injection (LPI) system component status 1 minute after 4# was reached?

- A. LPI actuated components would stay in their normal ES standby condition.
- B. LPI actuated components would go to their ES actuated condition.
- C. LPI actuated components excluding LPI pumps would go to their ES actuated condition.
- D. LPI actuated components excluding LPI valves would go to their ES actuated condition.

Ans: B

K/A #: 013000A102

Rating: 3.9

Task #: 0130101001

History: BANK; ROTs J - T8

SRO/RO: both

Lesson Plan Objective: ROT-4-13 B1

Lesson Plan Reference: ROT-4-13 page 35

48. Which ONE of the following signal(s) automatically start a Reactor Building Spray pump?

- A. High Pressure Injection (HPI)
RB pressure 30 psig
- B. Low Pressure Injection (LPI)
RB pressure 30 psig
- C. Reactor Building Isolation and Cooling (RBIC)
RB pressure 30 psig
- D. RB pressure 30 psig only

Ans: A

K/A #: 026A000A301

Rating: 4.3

Task #: 0260101006

History: NEW

SRO/RO: RO

Lesson Plan Objective: ROT-4-62 B6

Lesson Plan Reference: ROT-4-62 pages 1 and 2

Procedure Reference: OP-405 page 3

49. T-incore on SPDS (Safety Parameters Display System) reads 661°F and RCS pressure is slowly increasing. If the subcooling monitor indicate 7° subcooled, which one of the following was the last valve(s) to open?

- A. Pressurizer spray valve 40% setpoint
- B. Pressurizer spray valve 100% setpoint
- C. Pilot-operated relief valve
- D. Pressurizer code safety valves

Ans: C

K/A #: 010000K403

Rating: 3.8

Task #: 0020101009

History: MODIFIED BANK

SRO/RO: both

Lesson Plan Objective: ROT-4-60 B3

Lesson Plan Reference: ROT-4-60 pages 10 and 11

Procedure Reference: OP-305 page 3

50. The makeup system (MU) is in a normal full power lineup when SW is lost due to a system leak. Which ONE of the following is the MU system response and the reason for that response?

- A. The bypass valve for the makeup demineralizers will automatically open to protect the demineralizers from high temperatures.
- B. The filter bypass valves for the makeup prefilters will automatically open to protect the filter from high temperatures.
- C. The letdown isolation valve will automatically close to protect the makeup demineralizers from high temperatures.
- D. The letdown cooler outlet isolation valves will automatically close to protect the makeup filters from high temperatures.

Ans: C

K/A #: 011000A207

Rating: 3.0

Task #: 0040401001

History: NEW

SRO/RO: both

Lesson Plan Objective: ROT-4-52 B2

Lesson Plan Reference: ROT-4-52 page 28

Procedure Reference: OP-402 page 4

51. The plant is at 60% RTP when the control board operator notices a slow degradation of condenser vacuum. After 10 minutes the following conditions exist:

- o OP-607, Condenser Vacuum Systems, Section 4.5, Loss of Vacuum has been entered.
- o Condenser vacuum is 4" Hg absolute.
- o Condenser ΔT is $\approx 3^\circ F$.
- o "A" Air Removal Pump, ARP-1A has tripped.
- o "B" Air Removal Pump, ARP-1B has failed to auto-start.
- o Turbine Vibration is 2 mils
- o Turbine Eccentricity is 0.5 mils
- o Rotor Position is 3 mils
- o Journal bearing metal temperatures range from 142° to $163^\circ F$
- o Thrust bearing metal temperature is $135^\circ F$

Which ONE of the following describes the status of the secondary plant?

- A. The main turbine should be manually tripped; condenser vacuum is decreasing. (DEGRADING)
- B. The main turbine should be manually tripped; condenser vacuum is stable.
- C. The main turbine is within normal parameters; condenser vacuum is decreasing. (DEGRADING)
- D. The main turbine is within normal parameters; condenser vacuum is stable.

Ans: C

K/A #: 055000K301

Rating: 2.5

Task #: 055040101001

History: MODIFIED BANK

SRO/RO: RO

Lesson Plan Objective: ROT-4-69 B8

Lesson Plan Reference: ROT-4-69 page 60

Procedure Reference: OP-607 pages 3 and 10

52. Reactor Coolant Pressure has decreased to < 1500 psig. If all automatic systems function properly, which ONE of the following describes the condition of the Decay Heat Closed Cycle Cooling Pumps (DCP-1A and DCP-1B) and the DC valves to the Decay Heat Heat Exchanger (DHHEs)?

- A. DCP-1A and DCP-1B auto start with an Engineered Safeguards signal as a Block 2 load and DC valves will automatically control RCS cooldown rate.
- B. DCP-1A and DCP-1B auto start with an Engineered Safeguards signal as a Block 2 load and DC valves are failed to their full cooling flow position.
- C. DCP-1A and DCP-1B auto start with an Engineered Safeguards signal as a Block 6 load and DC valves will automatically control RCS cooldown rate.
- D. DCP-1A and DCP-1B auto start with an Engineered Safeguards signal as a Block 6 load and DC valves are failed to their full cooling flow position.

Ans: D

K/A #: 076000K108

Rating: 3.5

Task #: 0050101023

History: BANK; ROTs : - T5

SRO/RO: both

Lesson Plan Objective: ROT-4-55 B1 and F2

Lesson Plan Reference: ROT-4-55 pages 5 and 24

53. Given the following plant conditions:

| | |
|----------------------|--------------------------|
| Reactor tripped from | 98% RTP |
| RCS Tave | 535°F |
| RCS Pressure | 1550# |
| Pressurizer Level | 55" |
| Subcooling Margin | 65° |
| OTSG Levels A | 50" |
| OTSG Levels B | 20" |
| OTSG Pressure A | 900# |
| OTSG Pressure B | 650# |
| Makeup Flow | 200 gpm |
| Feedwater Flow A | 0.5×10^6 lbm/hr |
| Feedwater Flow B | 1.5×10^6 lbm/hr |
| Megawatts Electric | 0 |

From the indications given, which ONE of the following transients is in progress?

- A. Loss of Coolant Accident (LOCA)
- B. Steam Generator Tube Rupture (SGTR)
- C. Overcooling Event
- D. Undercooling Event

Ans: C

K/A #: 0000040EA203

Rating: 4.6

Task #: 0000501028

History: BANK

SRO/RO: both

Lesson Plan Objective: ROT-3-22 B1

Lesson Plan Reference: ROT-3-22 pages 3 and 4

54. During fuel manipulations in the Reactor Building, damage occurs to a fuel assembly and RM-G16, Reactor Building Fuel Handling Bridge monitor, alarms. Which of the following actions and alarm tones are correct for this situation?

- A. Sound the Reactor Building Evacuation alarm (a steady alarm tone) and make an announcement over the Public Address (PA) system to evacuate the Reactor Building.
- B. Have Health Physics perform a survey and then if required Sound the Reactor Building Evacuation alarm (a steady alarm tone).
- C. Have Health Physics perform a survey and then if required Sound the Reactor Building Evacuation alarm (a pulsed alarm tone).
- D. Sound the Reactor Building Evacuation alarm (a pulsed alarm tone) and make an announcement over the Public Address (PA) system to evacuate the Reactor Building.

Ans: A

K/A #: 103000A204

Rating: 3.6

Task #: 0340101022

History: NEW

SRO/RO: RO

Lesson Plan Objective: ROT-4-26 B1

Lesson Plan Reference: ROT-4-26 page 15
ROT-4-92 page 2

Procedure Reference: FP-203 pages 5 and 6
SP-323 page 3

55. The following plant conditions exist:

- o 37% Rated Thermal Power
- o Condenser vacuum is 23 in-Hg
- o ΔT between condensers is 45°F
- o Generator stator bar discharge temperature is 107°C

Which ONE of the following actions should be taken?

- A. Enter AP-660, Turbine Trip
- B. Enter AP-510, Rapid Power Reduction
- C. Enter EOP-02, Vital System Status Verification
- D. All conditions are within specification; no procedure entry is required

Ans: A

K/A #: 000051EA202

Rating: 3.9

Task #: 0450401001

History: MODIFIED BANK

SRO/RO: both

Lesson Plan Objective: ROT-5-29 B1
ROT-5-96 B1

Lesson Plan Reference: ROT-5-29 page 1
ROT-5-96 page 3

Procedure Reference: AP-660 page 1
EOP-02 page 1

56. Step 3.5 of EOP-12, Station Blackout, directs the operator to "Actuate MS line isolation on both OTSGs".

Which ONE of the following is the reason for this step?

- A. To help control cooldown by minimizing the length of steam line available for steam control problems.
- B. To prevent OTSG dry out due to the loss of main feedwater.
- C. To maintain greater than 100 psig in the OTSGs due to the impact of the loss of power on turbine bypass valves.
- D. To ensure OTSGs are isolated due to the impact of the loss of power on the MS line isolation logic.

Ans: A

K/A #: 000055EK302

Rating: 4.3

Task #: 0000501031

History: BANX; NRC 5-93

SRO/RO: both

Lesson Plan Objective: ROT-5-100 B3

Lesson Plan Reference: ROT-5-100 page 6

Procedure Reference: EOP-12 page 5

57. At 100% RTP a control rod drops into the core. AP-545, Plant Runback, is entered. Follow-up action 3.9 has the operator ensure Tave stabilizes between 577 and 581°F. Which ONE of the following is the reason for this step?

- A. Due to the rapid decrease in reactor power RCS temperature may go outside its normal band; if parameters are outside their band this could be an indication of additional problems.
- B. Due to the rapid decrease in reactor power RCS temperature may go outside its normal band; RCS temperature may increase to unacceptable high readings with the reactivity insertion.
- C. Due to the slow decrease in reactor power RCS temperature may go outside its normal band; if parameters are outside their band this could be an indication of additional problems.
- D. Due to the slow decrease in reactor power RCS temperature may go outside its normal band; RCS temperature may decrease to unacceptable low readings with the reactivity insertion.

Ans: A

K/A #: 000003EA106

Rating: 4.0

Task #: NTS (0010401001)

History: NEW

SRO/RO: RO

Lesson Plan Objective: ROT-5-68 33

Lesson Plan Reference: ROT-5-68 page 7

Procedure Reference: AP-545 page 8

58. Per the Follow-Up Actions of EOP-02, Vital System Status Verification, the operator must ensure that the Turbine Generator output breakers open. Which of the following is the reason for this action?

- A. This prevents damage to the generator voltage regulator from over-ranging.
- B. This prevents damage to the LP turbine from lack of cooling to turbine blading.
- C. This prevents damage to the output breakers from a reverse power condition.
- D. This prevents damage to the generator from becoming motorized.

Ans: B

K/A #: 000007EK301

Rating: 4.0

Task #: 0000501025

History: BANK; ROTs J - T10A

SRO/RO: both

Lesson Plan Objective: ROT-5-96 B3

Lesson Plan Reference: ROT-5-96 page 27

Procedure Reference: EOP-02 page 17

59. What is the BASIS for tripping all Reactor Coolant Pumps (RCPs) within 2 minutes when there is a loss of Subcooling Margin?
- A. This keeps the RCS void fraction less than 70% such that a loss of RCPs would not uncover the core.
 - B. Securing the Reactor Coolant Pumps maintains electrical loading at a minimum, thereby reducing the effects of a potential LOOP.
 - C. This allows the RCS to separate into a steam and water mixture, enhancing steam cooling which allows only high energy steam to escape from the break.
 - D. With the RCPs secured the ΔP across the leak is reduced which prevents the leak size from increasing.

Ans: A

K/A #: 000009EK321

Rating: 4.2

Task #: 0000501026

History: BANK; NRC 11-93; ROTs J - T10A

SRO/RO: both

Lesson Plan Objective: ROT-5-85 B3

Lesson Plan Reference: ROT-5-85 page 4

Procedure Reference: EOP-03 page 3

60. While performing PT-325, Turbine Generator Checks, Section 4.10.1, Overspeed Trip Oil Test Device, the Control Room calls the operators performing the test at the Turbine Pedestal and informs them that several computer points exceed the thrust bearing metal temperature of 225°F. OP-203, Plant Startup, indicates that the Turbine should be tripped to prevent damage to bearing babbitt and turbine damage. An operator at the turbine pedestal is holding the overspeed trip mechanism "Test Handle" in the "TEST" position and the "Trip/Reset Lever" has moved to the "TRIP" position. Which ONE of the following actions would trip the turbine?

- A. Depress the Reactor Trip pushbutton found on the Main Control Board.
- B. Depress the Turbine Trip pushbutton found on the Main Control Board.
- C. Release the overspeed trip mechanism "Test Handle" at the Turbine Pedestal.
- D. Reposition the "Trip/Reset Lever" to reset at the Turbine Pedestal.

Ans: C

K/A #: 000029EA113

Rating: 4.1

Task #: 0450201001
0450401001
0450404001

History: NEW

SRO/RO: RO

Lesson Plan Objective: ROT-4-78 B2 and G3

Lesson Plan Reference: ROT-4-78 pages 16 and 20

Procedure Reference: PT-325 pages 8, 28 and 29
OP-203 page 4

61. Plant heatup and pressurization for a normal startup is in progress. RCS pressure is 1600 psig and the operator has just positioned the HPI 1500 psig Bypass Switches to RESET the bypass.

Which ONE of the following describes the status of the HPI CHANNEL FUNCTION ENABLED green lights and the FUNCTIONAL STATUS of HPI?

- A. The green lights are OUT, but the ES HPI system is fully functional.
- B. The green lights are OUT, and the ES HPI system will NOT function for a pressure decrease below 1500 psig.
- C. The green lights are ON, and the ES HPI system is fully functional.
- D. The green lights are ON, but the ES HPI system will NOT function for a pressure decrease below 1500 psig.

Ans: A

K/A #: 194001A113

Rating: 4.3

Task #: 0130101001

History: BANK; NRC 5-93

SRO/RO: both

Lesson Plan Objective: ROT-4-13 B4

Lesson Plan Reference: ROT-4-13 pages 16 and 17

Procedure Reference: OP-507 page 10

62. A limit and precaution in OP-202, Plant Heatup, states "Ensure chemistry analysis of the RCS shows hydrazine concentration as "less than detectable", prior to placing a makeup demineralizer in service." What is the basis for this?

- A. It prevents the release of undesirable ions from the makeup demineralizers.
- B. It prevents the premature exhaustion of the demineralizer resin.
- C. It prevents the demineralizers from causing a change in RCS pH.
- D. It prevents the release of resin fines into the RCS.

Ans: A

K/A #: 194001A114

Rating: 2.5

Task #: 1150101016

History: BANK; ROTs J - T10A

SRO/RO: both

Lesson Plan Objective: ROT-5-103 B1

Procedure Reference: OP-202 page 7

63. Which ONE of the following would be the correct order of use (by procedure) as a source of emergency feedwater, assuming all sources are available? (First - Second - Third)

- A. Hotwell - Emergency Feed Tank - Condensate Storage Tank.
- B. Emergency Feed Tank - Hotwell - Condensate Storage Tank.
- C. Emergency Feed Tank - Condensate Storage Tank - Hotwell.
- D. Hotwell - Condensate Storage Tank - Emergency Feed Tank.

Ans: C

K/A #: 061000K401

Rating: 3.9

Task #: 0130101001

History: BANK

SRO/RO: RO

Lesson Plan Objective: ROT-4-15 F4

Lesson Plan Reference: ROT-4-15 page 2

Procedure Reference: EOP-09 pages 15 and 23

64. Which ONE of the following describes the source range nuclear instrument response as Reactor Coolant system inventory decreases during a Loss of Coolant Accident (LOCA)?

The detector will:

- A. Increase as reactor vessel level decreases. The count rate will continue to increase as water level continues to decrease.
- B. Decrease as reactor vessel level decreases. The count rate will continue to decrease as water level continues to decrease.
- C. Increase as reactor vessel level decreases. The count rate will reach a maximum level then begin to decrease as water level continues to decrease.
- D. Decrease as reactor vessel level decreases. The count rate will reach a minimum level then begin to increase as water level continues to decrease.

Ans: C

K/A #: 015020K506

Rating: 2.8

Task #: 01150101005

History: BANK

SRO/RO: both

Lesson Plan Objective: ROT-4-10 B13

Lesson Plan Reference: ROT-4-10 page 31

65. The reactor and turbine tripped due to a loss of both 6.9KV busses. Which of the following indications show that natural circulation has been established?

- A. RCS Tcold minus OTSG T_{sat} is 3°F and tracking
- B. Incore temperature is within 20°F of T_{hot}
- C. Core differential temperature is 50°F and increasing
- D. When OTSG pressure is decreased T_{hot}, T_{cold}, and T_{incore} increase

Ans: A

K/A #: 017020K301

Rating: 3.5

Task #: 0000501009

History: BANK; ROTs J - T10A

SRO/RO: both

Lesson Plan Objective: ROT-3-03 B4

Lesson Plan Reference: ROT-3-03 page 5

Procedure Reference: EOP-09 page 7

66. The following plant conditions exist:

- o An Control Room Ventilation Return Duct Radiation Monitor (RM-A5) high radiation (gas) actuation has occurred.
- o AHD-1/1D, AHD-2, and AHD-3, Control Complex Dampers have positioned appropriately.

Which ONE of the following will reposition the Control Complex Dampers?

- A. When the RM-A5 actuation has cleared, the dampers will automatically return to their normal lineup when both of the "HVAC ISOLATE/RESET" switches are selected to "NORM".
- B. The dampers can be controlled manually with the "CNTRL COMPLEX RECIRC DMPR" potentiometer after the "DAMPER OVERRIDE" switch is selected to "ON".
- C. The dampers will automatically return to their normal lineup when the high radiation actuation is bypassed and the "DAMPER OVFERRIDE" switch is selected to "ON".
- D. When the RM-A5 actuation has been bypassed, the dampers can be controlled manually with the "CNTRL COMPLEX RECIRC DMPR" potentiometer.

Ans: B

K/A #: 072000K204

Rating: 3.3

Task #: 0720101002
0880101012

History: MODIFIED BANK

SRO/RO: RO

Lesson Plan Objective: ROT-4-25 B1
ROT-4-87 B1

Lesson Plan Reference: ROT-4-25 pages 15 and 27
ROT-4-87 page 11

Procedure Reference: AP-250 pages 9 and 11

67. During operation at 100% with the "A" Reactor Protection System (RPS) channel in channel bypass, RCS pressure exceeds the RPS high pressure trip setpoint. RPS channels "B" and "D" trip, but RPS channel "C" does not trip due to a failed pressure bistable. Which ONE of the following statements is correct concerning the CRD breaker/electronic trip alignment?

- A. All CRD breakers and electronic trips will open. This will result in a reactor trip.
- B. No CRD breakers or electronic trips will open. This will not result in a reactor trip.
- C. The "B" and "D" breakers and the "F" electronic trip will open. This will not result in a reactor trip.
- D. The "B" and "D" breakers and the "F" electronic trip will open. This will result in a reactor trip.

Ans: A

K/A #: 012000K603

Rating: 3.1

Task #: 0120101005

History: BANK

SRO/RO: both

Lesson Plan Objective: ROT-4-12 B4

Lesson Plan Reference: ROT-4-12 page 49

68. SP-10-MS, Main Steam header pressure selector switch, is selected to "A". The reactor has just tripped. The following control board conditions are noticed:

- o MSV-9 and MSV-10, "A" side Turbine Bypass valves are closed
- o MSV-11 and MSV-14, "B" side Turbine Bypass valves are open
- o SASS MISMATCH is in alarm

Which ONE of the following would explain these conditions?

- A. SASS has transferred SP-10-MS input to the "B" side transmitter; the selected "A" side transmitter has failed midscale.
- B. SASS has transferred SP-10-MS input to the non-selected "A" side transmitter; the selected "A" side transmitter has failed midscale.
- C. SASS has NOT transferred SP-10-MS input; the selected "A" side transmitter has failed midscale.
- D. SASS has NOT transferred SP-10-MS input; the non-selected "A" transmitter has failed midscale.

Ans: C

K/A #: 016000G001

Rating: 3.1

Task #: 0160101010

History: NEW

SRO/RO: both

Lesson Plan Objective: ROT-4-09 B6

Lesson Plan Reference: ROT-4-09 pages 6 and 81

Procedure Reference: OP-501 page 16

69. Which ONE of the following is the power supply and the expected failure position of the EFIC control valves?

- A. DPDP 5A and 5B; Full closed
- B. DPDP 5A and 5B; Full open
- C. ACDP 5A and 5B; Full closed
- D. ACDP 5A and 5B; Full open

Ans: B

K/A #: 063000K302

Rating: 3.5

Task #: 0610101012

History: MODIFIED BANK

SRO/RO: RO

Lesson Plan Objective: ROT-4-15 B1

Lesson Plan Reference: ROT-4-15 page 10

70. When manually transferring a Vital Bus from normal to its alternate power supply, an initial step (before the actual transfer) has the operator verify that the "IN SYNC" lamp is ON, on the Vital Bus Static Transfer Switch (VBXS). Which ONE of the following lists the power supplies that the IN SYNC" lamp on the VBXS is monitoring?

- A. Inverter and normal source AC
- B. Battery and normal source AC
- C. Inverter and alternate source AC
- D. Battery and alternate source AC

Ans: C

K/A #: 000057EA101

Rating: 3.7

Task #: 0620106002

History: NEW

SRO/RO: both

Lesson Plan Objective: ROT-4-91 F2

Lesson Plan Reference: ROT-4-91 page 3

Procedure Reference: OP-703 page 20

71. A step in AP-880, Fire Protection, has the control room operators stop AHF-29A, AHF-29B, AHF-24A and AHF-24B, intermediate building (IB) supply and exhaust fans, if a fire is present in the intermediate building 95' or 119' elevation. Which ONE of the following is the reason for this action?

- A. If the fans are still operating some fire dampers in the IB will not function properly.
- B. If the fans are still operating the sprinkler systems do not work as effectively.
- C. This action will result in the closing of the fan dampers.
- D. The fans' dampers when closed are designed to prevent fire spread to the auxiliary building.

Ans: C

K/A #: 000067EK304

Rating: 3.3/4.1

Task #: 0P60501005

History: NEW

SRO/RO: both

Lesson Plan Objective: ROT-5-69 B3

Lesson Plan Reference: ROT-5-69 page 6

Procedure Reference: AP-880 page 4

72. The following plant conditions exist:

- o A LOCA is in progress
- o RCS pressure is 400 psig
- o 2 High Pressure Injection Pumps are operating
- o 2 Low Pressure Injection Pumps are operating
- o Borated Water Storage Tank level is 13 feet

Which ONE of the following is the correct flow path for core heat removal in accordance with EOP-08, LOCA Cooldown?

- A. Manual alignment of Piggy-back flow through the Makeup Pumps with the Decay Heat pumps taking a suction from the Reactor Building Sump.
- B. Automatic alignment of Piggy-back flow through the Makeup Pumps with the Decay Heat pumps taking a suction from the Reactor Building Sump.
- C. Manual alignment of Piggy-back flow through the Makeup Pumps with the Decay Heat pumps taking a suction from the Borated Water Storage Tank.
- D. Automatic alignment of Piggy-back flow through the Makeup Pumps with the Decay Heat pumps taking a suction from the Borated Water Storage Tank.

Ans: A

K/A #: 005000K408

Rating: 3.1

Task #: 0050501003
(0000501029)

History: NEW

SRO/RO: RO

Lesson Plan Objective: ROT-4-54 B7

Lesson Plan Reference: ROT-4-54 page 21
ROT-5-95 page 18

Procedure Reference: EOP-08 page 19

73. Step 4.1.7 in OP-209, Plant Cooldown, has the operator verify cooldown surveillance is in progress. The details states: refer to SP-422, RC System Heatup/Cooldown Surveillance. Which ONE of the following explains this requirement?

- A. SP-422 records the cooldown temperatures of the Reactor Coolant System to verify that OTSG Tube to Shell ΔT limits are not exceeded; Tensile Stress Limit $< 100^{\circ}\text{F}$ ($T_{\text{shell(avg)}} - T_c$)
- B. SP-422 records the cooldown rates of the Reactor Coolant System to verify that they are maintained within Technical Specification limits; for RCS temperature $> 280^{\circ}\text{F}$ the cooldown rate limit is $\leq 50^{\circ}\text{F}$ in any 1/2 hour period.
- C. SP-422 records the cooldown temperatures of the Reactor Coolant System so that subcooling margin can be verified; for RCS pressure ≤ 1500 to > 250 PSIG subcooling margin should be $\geq 50^{\circ}\text{F}$.
- D. SP-422 records the cooldown rates of the Reactor Coolant System to verify no Low Temperature Overpressure Protection limits are violated; for RCS temperature $\leq 283^{\circ}\text{F}$ LTCPs limits are required.

Ans: B

K/A #: 000025EA101

Rating: 3.6

Task #: 1150101020

History: NEW

SRO/RO: both

Lesson Plan Objective: ROT-5-106 B2

Procedure Reference: OP-209 page 16
SP-422 page 4

74. A reactor startup is in progress. When the reactor is critical at 5000 cps on both source range instruments, NI-2 fails to 0.1 cps. Which ONE of the following is the maximum power allowed under these conditions?

- A. 5 E3 cps
- B. 5 E-3 amps
- C. \leq 5% rated power
- D. 100% rated power (power is not limited by failure)

Ans: D

K/A #: 000032EK301

Rating: 3.6

Task #: 1190301015

History: BANK

SRO/RO: both

Lesson Plan Objective: ROT-4-10 B9

Lesson Plan Reference: ROT-4-10 page 42

Procedure Reference: TS 3.3.9

75. Per the follow-up actions of EOP-06, Steam Generator Tube Rupture, the affected Once Through Steam Generator (OTSG) must be isolated if Borated Water Storage Tank (BWST) level drops $\leq 35'$. This action accounts for applicable instrument errors and

- A. Keeps offsite doses below 10CFR20 limits.
- B. Prevents exceeding secondary plant storage capacity for contaminated liquids.
- C. Leaves sufficient inventory in the BWST to fill the RB sump permitting sump suction to the Decay Heat Pumps.
- D. Keeps the required boric acid fill volume within the capacity of a single Boric Acid Storage Tank.

Ans: C

K/A #: 000038EA201

Rating: 4.1

Task #: 000050122

History: BANK

SRO/RC: RO

Lesson Plan Objective: ROT-5-101 B3

Lesson Plan Reference: ROT-5-101 pages 33 and 46

Procedure Reference: EOP-06 page 33

76. By definition, the MINIMUM emergency classification which should be entered if an event occurs involving an actual or likely major failure of plant functions needed for protection of the public is a/an

- A. Alert
- B. Unusual Event
- C. Site Area Emergency
- D. General Emergency

Ans: C

K/A #: 194001A116

Rating: 3.1

Task #: NTS

History: BANK

SRO/RO: both

Lesson Plan Objective: ROT-5-34 B4

Lesson Plan Reference: TRE-007 page 48

Procedure Reference: EM-202 page 3

77. During a Reactor trip several control rods are not fully inserted. If both of the Boric Acid Pumps (CAP-1A and CAP-1B) are incapable of boric acid injection, which ONE of the following is the appropriate means of "emergency boration"?

- A. Opening the suction valves (MUV-58 and MUV-73) from the Borated Water Storage Tank (BWST) to the Makeup Pumps (MUPs) and diverting letdown flow to a Reactor Coolant Bleed Tank (RCBT).
- B. Gravity drain of the Boric Acid Storage Tanks (BASTs) through the Batch Feed Valve (MUV-103) into the Makeup Tank (MUT) and diverting letdown flow to a Reactor Coolant Bleed Tank (RCBT).
- C. Opening the suction valves (MUV-58 and MUV-73) from the Borated Water Storage Tank (BWST) through the Batch Feed Valve (MUV-103) into the Makeup Tank (MUT).
- D. Gravity drain of the Boric Acid Storage Tanks (BASTs) to the Makeup Pump suction and injecting boric acid with the Makeup Pumps (MUPs).

Ans: A

K/A #: 004010A207

Rating: 3.8

Task #: 0040101015
(0000501025)

History: NEW

SRO/RO: both

Lesson Plan Objective: ROT-4-52 B22

Lesson Plan Reference: ROT-4-52 page 43

Procedure Reference: EOP-02 page 7

78. If the Nuclear Services Intake (CWTS-2) Screen becomes clogged with debris from the intake which ONE of the following Raw Water Pumps (RWP) suction will be affected?

- A. RWP-1, RWP-2A and RWP-3A
- B. RWP-2A and RWP-3A
- C. RWP-1, RWP-2B and RWP-3B
- D. RWP-2B and RWP-3B

Ans: C

K/A #: 075020K301

Rating: 3.4

Task #: 0750104002

History: NEW

SRO/RO: RO

Lesson Plan Objective: ROT-4-75 G2

Lesson Plan Reference: ROT-4-75 pages 5 and 6

79. The following plant conditions exist:

- o A Loss of Coolant Accident (LOCA) is in progress
- o The leak is in the Reactor Building (RB)
- o Reactor Coolant Pressure is 1825 psig
- o RB pressure is 4.3 psig
- o Nuclear Services Closed Cycle Cooling Surge Tank (SWT-1) is in low level alarm

If all plant systems work correctly in automatic, which ONE of the following has occurred?

- A. RB Isolation and Cooling (RBIC) has occurred; all penetrations with the exception of RCP seal cooling, not required for Engineered Safeguards (ES) to the reactor building have been isolated.
- B. RB Isolation and Cooling (RBIC) has occurred; all penetrations not required for operation of Engineered Safeguards (ES) to the reactor building have been isolated.
- C. High Pressure Injection (HPI) has occurred; all penetrations not required for HPI to the reactor building have been isolated by Diverse Containment Isolation.
- D. High Pressure Injection (HPI) has occurred; all penetrations not required for operation of Engineered Safeguards (ES) to the reactor building have been isolated by Diverse Containment Isolation.

Ans: B

K/A #: 022000K403

Rating: 3.6

Task #: 1030401003
0000501029

History: NEW

SRO/RO: both

Lesson Plan Objective: ROT-4-63 B6

Lesson Plan Reference: ROT-4-63 page 14
ROT-4-13 page 11

80. The plant is at 28% FP with the "A" Condensate Pump (CDP-1A) in operation; CDP-1B is red tagged to the Master Mechanic on Duty when the following occurs:

- o Annunciator N-02-01, CDSTE PUMP A TRIP, is in alarm
- o Deaerator level is 13' 7.5"
- o "DEAER LEVEL NORM" light is off on the pump control switch

Which ONE of the following is appropriate to recover condensate flow?

- A. Wait 15 seconds then restart CDP-1A; place the Bailey Control station in auto which will return condensate flow to normal.
- B. Wait 15 seconds then restart CDP-1A; take manual control of CDP-1A Bailey Controller and return condensate flow to normal using the Hand/Auto station.
- C. Take manual control of CDP-1A Bailey Controller and adjust the bias setting; restart CDP-1A; then return condensate flow to normal using the Hand/Auto station.
- D. Take manual control of CDP-1A Bailey Controller and drive demand to "0"; restart CDP-1A; then return condensate flow to normal using the Hand/Auto station.

Ans: D

K/A #: 056000A203

Rating: 2.6

Task #: 0560401003

History: NEW

SRO/RO: both

Lesson Plan Objective: ROT-4-69 B6

Lesson Plan Reference: ROT-4-69 pages 14 and 27

Procedure Reference: AR-602 page 18

81. The berm air compressor, SAP-1D, is supplying instrument and station air. The other berm air compressor, SAP-1C was in LAG and AUTO shutdown. All in-house air compressors (SAP-1A, SAP-1B, IAP-1A and IAP-1B) are in standby. Which ONE of the following are the air compressors that should be running if air pressure falls to 100 psig?

- A. SAP-1D only
- B. SAP-1C and SAP-1D
- C. IAP-1A, IAP-1B, SAP-1C and SAP-1D
- D. IAP-1A, IAP-1B, SAP-1A, SAP-1B, SAP-1C and SAP-1D

Ans: B

K/A #: 078000A301

Rating: 3.1

Task #: 0780104002

History: NEW

SRO/RO: RO

Lesson Plan Objective: ROT-4-81 G2

Lesson Plan Reference: ROT-4-81 page 11

Procedure Reference: OP-411 pages 3 and 4

82. The plant is in MODE 5. A HIGH RADIATION alarm has been received by RM-A1, the containment purge gas monitor. Which ONE of the following automatic actions occurred?

- A. The Containment purge valves close.
- B. The Containment purge valves close and fans trip.
- C. The Containment purge fans trip.
- D. The Containment purge exhaust filters are placed in service.

Ans: A

K/A #: 029000K102

Rating: 3.3

Task #: 01030106004

History: MODIFIED BANK

SRO/RO: both

Lesson Plan Objective: ROT-4-63 F2

Lesson Plan Reference: ROT-4-63 page 30

Procedure Reference: AP-250 page 2

83. During refueling operations a leak occurs in the suction piping of the operating Spent Fuel (SF) pump. A note in AP-1080, Refuel Canal Water Level Decrease, states that leakage from SF suction and discharge piping will stop when level decreases to approximately four feet below normal level. Which ONE of the following is the reason for this note?

- A. Once the lower level is reached the SFP is not capable of overcoming the discharge outlet pressure.
- B. Once the lower level is reached there will be inadequate NPSH for the SFPs.
- C. Four feet is the approximate level decrease that will occur while the pump's leaking suction is being isolated and the other SFP is started.
- D. The SFPs will shutdown automatically when level reaches four feet below normal level.

Ans: B

K/A #: 033000A203

Rating: 3.1

Task #: 0340401001

History: NEW

SRO/RO: both

Lesson Plan Objective: ROT-4-29 B6

Lesson Plan Reference: ROT-4-29 page 14

Procedure Reference: AP-1080 page 11

84. An automatic ES HPI Actuation has occurred and the Nuclear Services closed cycle emergency duty pump, SWP-1A, is out of service. SW header pressure is 110 psig and DECREASING.

Which ONE of the following describes the expected response of the SW system?

- A. The normal duty SW pump will not receive an automatic start signal, but can be restored to service locally.
- B. The normal duty SW pump will receive an auto start signal after 17 seconds and can not be stopped from the control room or locally.
- C. The running normal duty pump will trip 15 seconds after the start of SWP-1B and if re-started from the control room will trip again.
- D. The running normal duty SW pump will remain running and the emergency pump SWP-1B will start if header pressure is not restored in 17 seconds.

Ans: C

K/A #: 008010A301

Rating: 3.2

Task #: 0080106007

History: BANK; ROTs J - T7; NRC 5-93

SRO/RO: RO

Lesson Plan Objective: ROT-4-56 F2

Lesson Plan Reference: ROT-4-56 page 9

Procedure Reference: OP-408 page 3

85. The "Non-safety" transfer switch for the Remote Shutdown Panel is located in which ONE of the following locations?

- A. In a relay cabinet in the "A" ES 4160V switchgear room.
- B. In a relay cabinet in the "B" ES 4160V switchgear room.
- C. On the ES portion of the Main Control Board.
- D. On the "AB" section of the Remote Shutdown Panel.

Ans: D

K/A #: 000068G006

Rating: 4.1

Task #: 1010501001

History: BANK

SRO/RO: both

Lesson Plan Objective: ROT-4-16 B2

Lesson Plan Reference: ROT-4-16 page 1

Procedure Reference: AP-990 page 17

86. During the performance of SP-341, Monthly Containment Isolation Valve Operability Check, one of the manual Leak Rate (LR) containment isolation valves is found open and damaged so that it cannot be closed. Which ONE of the following is the status of containment integrity?

- A. Containment integrity is lost; manual actuation of Reactor Building Isolation and Cooling (RBIC) will restore containment integrity.
- B. Containment integrity is lost; manual isolation of the penetration by the use of another valve if available will restore containment integrity.
- C. Containment integrity has NOT been lost; only Engineered Safeguard system penetrations are included as part of containment integrity.
- D. Containment integrity has NOT been lost; as long as the leak rate piping remains intact containment integrity is maintained.

Ans: B

K/A #: 000069EA202

Rating: 3.9

Task #: 1030401003

History: MODIFIED BANK

SRO/RO: both

Lesson Plan Objective: ROT-4-63 B3 and B6

Lesson Plan Reference: ROT-4-63 page 21

Procedure Reference: SP-341 page 1

87. Which ONE of the following flow paths is a release path for both Laundry and Shower Tanks (WDT-11A and WDT-11B)?

- A. The tanks' fluid is pumped through RM-L2 then WDV-891 and WDV-892 (pneumatic and electric isolation valves) to the Nuclear Services Closed Cycle Cooling seawater system (RW).
- B. The tanks' fluid is pumped through WDV-891 and WDV-892 (electric isolation valves) the RM-L2 to the Nuclear Services Closed Cycle Cooling seawater system (RW).
- C. The tanks' fluid is pumped through RM-L2 then WDV-891 and WDV-892 (manual and electric isolation valves) to the Nuclear Services Closed Cycle Cooling seawater system (RW).
- D. The tanks' fluid is pumped through WDV-891 and WDV-892 (pneumatic isolation valves) then RM-L2 to the Nuclear Services Closed Cycle Cooling seawater system (RW).

Ans: A

K/A #: 000059EA204

Rating: 3.2

Task #: 0680106011

History: NEW

SRO/RO: RO

Lesson Plan Objective: ROT-4-59 F3

Lesson Plan Reference: ROT-4-59 page 6

Procedure Reference: OP-407H pages 15 through 24

88. Which ONE of the following sets of nuclear instrumentation readings indicates that the compensating voltage for the intermediate range channel NI-3 detector has been set to a value higher than required?

- | | | |
|----|--------------------|--|
| A. | NI-1 and 2 NI-3 | 8.0×10^5 cps 2.0×10^{11} amps |
| B. | NI-3 NI-4 | 3.0×10^6 amps 8.0×10^7 amps |
| C. | NI-1 and 2 NI-3 | 3.0×10^4 cps 8.0×10^{11} amps |
| D. | NI-3 NI-4 | 5.0×10^{11} amps not yet on scale |

Ans: A

K/A #: 000033EA201

Rating: 3.0

Task #: 0150101005

History: BANK; ROTs J - T8

SRO/RO: both

Lesson Plan Objective: ROT-4-10 B4

Lesson Plan Reference: ROT-4-10 page 5

89. Given the following plant conditions:

RM-A2, Auxiliary Building Ventilation Exhaust Duct Radiation Monitor is in alarm
RM-A12, Condenser Vacuum Pump Exhaust Gas Radiation Monitor, is in alarm
Reactor coolant system pressure is 2155 psig
Reactor coolant system temperature is 579°F
Makeup to the pressurizer has increased from 60 to 65 gpm
Pressurizer level is slowly decreasing

Which ONE of the following entry conditions has been met?

- A. A Small Break Loss of Coolant Accident (SBLOCA) is in progress, enter EOP-02, Vital System Status Verification.
- B. A Small Break Loss of Coolant Accident (SBLOCA) is in progress, enter EOP-03, Inadequate Subcooling Margin.
- C. A Tube Leak is in progress, enter EOP-02, Vital System Status Verification.
- D. A Tube Leak is in progress, enter EOP-06, Steam Generator Tube Rupture.

Ans: D

K/A #: 000037G011

Rating: 3.9

Task #: 0000501022

History: NEW

SRO/RO: both

Lesson Plan Objective: ROT-5-101 B1

Lesson Plan Reference: ROT-5-101 page 1

Procedure Reference: EOP-06 page 1

90. IN reference to the following excerpt from step 3.2 of EOP-04, Inadequate Heat Transfer:

IF at any time RC PRESS
≥ 2400 psig,
THEN use the PORV to
reduce RC PRESS based on
subcooling margin.

- o IF ASCM does NOT exist,
THEN open PORV to reduce RC PRESS
to ≈1600 psig
- o IF ASCM exists,
THEN open PORV to reduce RC PRESS
until either:
 - o RC PRESS > ASCM curve
 - OR
 - o RC PRESS ≈1600 psig

Which ONE of the following describes the reason for MANUALLY operating the PORV instead of relying on automatic operation?

- A. Manual operation allows the pressure of the RCS to be reduced faster.
- B. Automatic operation would result in more cycles on the PORV which increases the chances of PORV failure.
- C. Automatic operation would result in over pressurization of the Reactor Coolant Drain Tank (RCDT).
- D. Manual operation precludes challenging the safety function of the PORV.

Ans: B

K/A #: 000054EK305

Rating: 4.6

Task #: 0000501027

History: BANK

SRO/RO: both

Lesson Plan Objective: ROT-5-102 B3

Lesson Plan Reference: ROT-5-102 pages 3 and 4

Procedure Reference: EOP-04 page 3

91. During a power increase with all Integrated Control System (ICS) stations in automatic (except the ULD), the "A" main block valve is placed in manual with feedwater demand approximately 40% in both feedwater loops. Both feedwater pumps are running and FWV-28 (crosstie) is closed. Power is then increased until feedwater demand is approximately 60% in both feedwater loops. Which ONE of the following describes feedwater pump control?
- A. Both feedwater pumps will be on delta pressure error control.
 - B. "A" feedwater pump will be on delta pressure error control but "B" feedwater pump will be on flow error control.
 - C. "A" feedwater pump will be on flow error control but "B" feedwater pump will be on delta pressure error control.
 - D. Both feedwater pumps will be on flow error control.

Ans: B

K/A #: 059000K107

Rating: 3.2

Task #: 0410101001

History: BANK

SRO/RO: both

Lesson Plan Objective: ROT-4-14 B1

Lesson Plan Reference: ROT-4-14 pages 34, 35 and 36

92. During a secondary plant release from the Station Drains Tank (SDT-1) an annunciator (H-3-1) comes into alarm indicating that the Liquid Radiation Monitor for Secondary Releases (RM-L7) is in high alarm. Which ONE of the following are the correct actions that should be taken?

- A. Have the building operators ensure that Release Isolation Valve automatically closed; recirculation valve automatically closed; and the Neutralizer Tank Recirculation Pump has tripped.
- B. Have the building operators ensure that Release Isolation Valve automatically closed; recirculation valve automatically closed; and the Neutralizer Tank Recirculation Pump has continued to run.
- C. Have the building operators ensure that Release Isolation Valve automatically closed; recirculation valve automatically opened; and the Neutralizer Tank Recirculation Pump has tripped.
- D. Have the building operators ensure that Release Isolation Valve automatically closed; recirculation valve automatically opened; and the Neutralizer Tank Recirculation Pump has continued to run.

Ans: D

K/A #: 068000A204

Rating: 3.3

Task #: 1210104007

History: NEW

SRO/RO: both

Lesson Plan Objective: ROT-4-83 G14

Lesson Plan Reference: ROT-4-83 page 40
ROT-4-25 page 28

Procedure Reference: AR-403 page 98

93. The Auxiliary Building Exhaust Duct Radiation Monitor (RM-A3) and the Auxiliary Building Ventilation Exhaust Duct Radiation Monitor (RM-A2) have reached their high radiation alarm. Which ONE of the following are the interlock actions that the control board operators can directly verify IN THE CONTROL ROOM for RM-A2 and RM-A3?

A. The following fans trip if operating: AHF-10, Fuel Handling Area Supply Fan; AHF-11A and AHF-11B, Auxiliary Building Supply Fans; AHF-9A and AHF-9B, Penetration Cooling Fans; AHF-34A, Hot Machine Shop Weld Hood Exhaust Fan; AHF-30, Chemistry Lab Supply Fan.

B. The following fans trip if operating: AHF-10, Fuel Handling Area Supply Fan; AHF-11A and AHF-11B, Auxiliary Building Supply Fans; AHF-9A and AHF-9B, Penetration Cooling Fans; AHF-34A, Hot Machine Shop Weld Hood Exhaust Fan; AHF-30, Chemistry Lab Supply Fan.

The following valves close if open: WDV-439, Waste Gas Decay Tank Common Outlet Isolation Valve.

C. The following fans trip if operating: AHF-10, Fuel Handling Area Supply Fan; AHF-11A and AHF-11B, Auxiliary Building Supply Fans; AHF-9A and AHF-9B, Penetration Cooling Fans; AHF-34A, Hot Machine Shop Weld Hood Exhaust Fan; AHF-30, Chemistry Lab Supply Fan.

The following valves close if open: WDV-436, WDV-437, and WDV-438, Waste Gas Decay Tank Outlet Isolation Valves.

D. The following fans trip if operating: AHF-10, Fuel Handling Area Supply Fan; AHF-11A and AHF-11B, Auxiliary Building Supply Fans; AHF-9A and AHF-9B, Penetration Cooling Fans; AHF-34A, Hot Machine Shop Weld Hood Exhaust Fan; AHF-30, Chemistry Lab Supply Fan.

The following dampers close if open: AHD-29 and AHD-36, Waste Gas Decay Tank Area Supply and Exhaust Dampers.

Ans: A

K/A #: 071000K305

Rating: 3.2

Task #: 0720401001

History: NEW

SRO/RO: both

Lesson Plan Objective: ROT-4-25 B6

Lesson Plan Reference: ROT-4-25 page 26

Procedure Reference: AP-250 pages 1 and 2

94. The radiation monitor at the Reactor Coolant Bleed Tank Area, RM-G8, has gone into warning in the Control Room. Besides the low level warning amber alarm light being ON what other indication at the local alarm/readout unit will the Auxiliary Building Operator have that RM-G8 is in warning?

- A. An elevated meter reading; a red alarm light will be on; an audible alarm will be sounding.
- B. An elevated meter reading; an audible alarm will be sounding.
- C. An elevated meter reading; a red alarm light will be on.
- D. An elevated meter reading.

Ans: D

K/A #: 000061EA201

Rating: 3.5

Task #: 0720106001

History: MODIFIED BANK

SRO/RO: both

Lesson Plan Objective: ROT-4-25 F2

Lesson Plan Reference: ROT-4-25 pages 5 and 33

95. The plant has been in a Station Blackout for approximately one hour. Annunciator P-5-1, Inverter A Failure, has come into alarm. Per the Annunciator Response the indicated condition is a "loss of inverter AC input < 365 VAC and a loss of DC input < 105 VDC". Which ONE of the following is the reason for this alarm?

- A. The inverter has lost its AC power supply due to failure of the static transfer and its DC power supply due to battery depletion.
- B. The inverter has lost its AC power supply due to the Station Blackout and its DC power supply when the static transfer switch failed.
- C. The inverter has lost its AC power supply due to the Station Blackout and its DC power supply due to battery depletion.
- D. The inverter has lost its AC power supply and DC power supply due to the Station Blackout.

Ans: C

K/A #: 000058G005

Rating: 3.3

Task #: NTS
0630406003
(0630406001)

History: NEW

SRO/RO: both

Lesson Plan Objective: ROT-4-64 B2 and F6

Lesson Plan Reference: ROT-4-64 page 8
ROT-4-91 page 2

Procedure Reference: AR-701 page 59

96. Which ONE of the following sets of plant conditions would require entry into EOP-07, Inadequate Core Cooling?

- A. Core Exit Thermocouples average = 645°F
Reactor coolant system pressure = 1965 psig
- B. Core Exit Thermocouples average = 615°F
Reactor coolant system pressure = 1875 psig
- C. Core Exit Thermocouples average = 635°F
Reactor coolant system pressure = 1705 psig
- D. Core Exit Thermocouples average = 605°F
Reactor coolant system pressure = 1615 psig

Ans: C

K/A #: 000074EA201

Rating: 4.6

Task #: 0000501021

History: BANK

SRO/RO: both

Lesson Plan Objective: ROT-5-97 B1

Lesson Plan Reference: ROT-5-97 page 1

Procedure Reference: EOP-07 page 1

97. The following conditions exist:

- o Tcold and OTSG Tsat are diverging
- o Incores are increasing
- o Pressurizer level is increasing

Which ONE of the following is the probable cause for these conditions?

- A. Loss of all feedwater; HPI/PORV cooling not established.
- B. Pressurizer steam space leak; HPI has not been initiated.
- C. Inadvertent ES actuation; full HPI actuation.
- D. Inadvertent deboration at power; ICS in full automatic.

Ans: A

K/A #: 035000K301

Rating: 4.4

Task #: 0000501027

History: NEW

SRO/RO: both

Lesson Plan Objective: ROT-3-23 B1

Lesson Plan Reference: ROT-3-23 page 3

98. During a unit startup, the following conditions exist:

- o Turbine header pressure set point is 885 psig.
- o Turbine header pressure is 880 psig and increasing.
- o Turbine is in operator auto with the generator output breakers closed and a megawatt output of 150 megawatts (17% ULD output).
- o Reactor power is 17%
- o All bypass valves are closed

If the turbine header pressure continues to increase, the bypass valves should begin to open when header pressure exceeds:

- A. 885 psig
- B. 935 psig
- C. 1010 psig
- D. 1025 psig

Ans: B

K/A #: 039000K408

Rating: 3.3

Task #: 0390104002

History: BANK

SRO/RO: both

Lesson Plan Objective: ROT-4-66 G5

Lesson Plan Reference: ROT-4-66 page 6

99. To energize the "A" 480V ES bus from the "B" 480V ES bus, breakers 3391 and 3390 must be closed. Which ONE of the following is the interlock and the reason for the interlock associated with these breakers?

- A. Breaker 3311, "A" 480V ES feeder breaker has to be open; to prevent paralleling the EDG's through a crosstie.
- B. Breaker 3209, "A" diesel breaker has to be open; to prevent paralleling the EDG's through a crosstie.
- C. Breaker 3310, "B" 480V ES feeder breaker has to be open; to prevent paralleling the EDG's through a crosstie.
- D. Breaker 3220, "B" diesel breaker has to be open; to prevent paralleling the EDG's through a crosstie.

Ans: A

K/A #: 062000A206

Rating: 3.4

Task #: 0620101004

History: BANK

SRO/RO: both

Lesson Plan Objective: ROT-4-90 B1

Lesson Plan Reference: ROT-4-90 pages 8, 12 and 23

100. The "B" Emergency Diesel Generator (EDG-1B) is running supplying its associated 4160 ES bus in parallel with the grid for surveillance testing. The control room operator takes the "EXC VOLT ADJ DIESEL GENERATOR B" rheostat to the raise position. Which ONE of the following would be the expected response of the diesel generator indications?

- A. EDG-1B output Kilowatts (KW) increase.
- B. EDG-1B output frequency (HTZ) increase.
- C. EDG-1B output reactive load (MVAR) increase.
- D. EDG-1B output speed (RPM) increase.

Ans: C

K/A #: 064000A401

Rating: 4.0

Task #: 0640101004

History: BANK

SRO/RO: both

Lesson Plan Objective: ROT-4-06 B2

Lesson Plan Reference: ROT-4-06 pages 15 and 16

Procedure Reference: SP-354B page 25

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WRITE I.D. NUMBER HERE

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| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

EXAMPLE:

WRITE I.D. NUMBER HERE

MARK I.D. NUMBER HERE

PART 1
CODE I.D. NUMBER AT LEFT BY FILLING IN THE APPROPRIATE BOXES ACCORDING TO THE EXAMPLE.

IMPORTANT

USE NO. 2 PENCIL ONLY

- MAKE **DARK** MARKS
- EXAMPLE: A B C D E
- ERASE **COMPLETELY** TO CHANGE

NAME Ro key

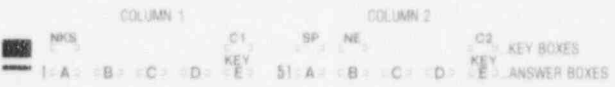
SUBJECT Ro

HOUR _____ DATE 3-22-96

KEY MARKING INSTRUCTIONS

This form is used for:
a) Program Key
b) Test Answer Sheet

When used as Program Key, you can control the results depending on which Key Boxes are marked.



Marking a Key Box or Combination of Key Boxes produces the following scoring and error marking results:

| | |
|------------------|--|
| NKS | No score printed on Key |
| C1 KEY | Prints score and error marks for column 1 |
| C1 KEY NE | Prints score for column 1 with no error marks |
| C2 KEY | Prints score and error marks for column 2 |
| C2 KEY NE | Prints score for column 2 with no error marks |
| C1 C2 KEY KEY | Prints total score and error marks for columns 1 and 2 |
| C1 C2 KEY KEY NE | Prints total score for columns 1 and 2 with no error marks |
| C1 C2 KEY KEY SP | Prints separate scores for columns 1 and 2 with no error marks |

After marking the appropriate Key Boxes, mark correct answers on your program key.

| | | | | | | | |
|----|---------------------------------------|---------------------------------------|---------------------------------------|--------------|--------------|-----|---------------------------------------|
| | NKS | | C1 KEY | | SP NE | | C2 KEY |
| 1 | A | B | <input checked="" type="checkbox"/> C | D | E | 51 | A |
| 2 | A | B | <input checked="" type="checkbox"/> C | D | E | 52 | A |
| 3 | <input checked="" type="checkbox"/> A | B | <input checked="" type="checkbox"/> C | D | E | 53 | A |
| 4 | A | B | <input checked="" type="checkbox"/> C | D | E | 54 | <input checked="" type="checkbox"/> A |
| 5 | A | B | <input checked="" type="checkbox"/> C | D | E | 55 | <input checked="" type="checkbox"/> B |
| 6 | A | B | <input checked="" type="checkbox"/> C | D | E | 56 | <input checked="" type="checkbox"/> B |
| 7 | A | <input checked="" type="checkbox"/> B | <input checked="" type="checkbox"/> C | D | E | 57 | <input checked="" type="checkbox"/> B |
| 8 | <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> B | <input checked="" type="checkbox"/> C | D | E | 58 | A |
| 9 | A | B | <input checked="" type="checkbox"/> C | D | E | 59 | <input checked="" type="checkbox"/> B |
| 10 | A | <input checked="" type="checkbox"/> B | <input checked="" type="checkbox"/> C | D | E | 60 | A |
| 11 | A | B | <input checked="" type="checkbox"/> C | D | E | 61 | <input checked="" type="checkbox"/> B |
| 12 | A | B | <input checked="" type="checkbox"/> C | D | E | 62 | <input checked="" type="checkbox"/> B |
| 13 | <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> B | <input checked="" type="checkbox"/> C | D | E | 63 | A |
| 14 | A | <input checked="" type="checkbox"/> B | <input checked="" type="checkbox"/> C | D | E | 64 | A |
| 15 | A | B | <input checked="" type="checkbox"/> C | D | E | 65 | <input checked="" type="checkbox"/> B |
| 16 | A | B | <input checked="" type="checkbox"/> C | D | E | 66 | A |
| 17 | A | B | <input checked="" type="checkbox"/> C | D | E | 67 | <input checked="" type="checkbox"/> B |
| 18 | A | <input checked="" type="checkbox"/> B | <input checked="" type="checkbox"/> C | D | E | 68 | A |
| 19 | A | B | C | D | E | 69 | A |
| 20 | A | B | <input checked="" type="checkbox"/> C | D | E | 70 | A |
| 21 | A | B | <input checked="" type="checkbox"/> C | D | E | 71 | A |
| 22 | A | <input checked="" type="checkbox"/> B | <input checked="" type="checkbox"/> C | D | E | 72 | <input checked="" type="checkbox"/> B |
| 23 | A | B | <input checked="" type="checkbox"/> C | D | E | 73 | A |
| 24 | A | B | <input checked="" type="checkbox"/> C | D | E | 74 | A |
| 25 | A | <input checked="" type="checkbox"/> B | <input checked="" type="checkbox"/> C | D | E | 75 | A |
| 26 | A | B | <input checked="" type="checkbox"/> C | D | E | 76 | A |
| 27 | A | B | <input checked="" type="checkbox"/> C | D | E | 77 | <input checked="" type="checkbox"/> B |
| 28 | <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> B | <input checked="" type="checkbox"/> C | D | E | 78 | A |
| 29 | A | B | <input checked="" type="checkbox"/> C | D | E | 79 | A |
| 30 | A | <input checked="" type="checkbox"/> B | <input checked="" type="checkbox"/> C | D | E | 80 | A |
| 31 | A | B | <input checked="" type="checkbox"/> C | D | E | 81 | A |
| 32 | <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> B | <input checked="" type="checkbox"/> C | D | E | 82 | <input checked="" type="checkbox"/> B |
| 33 | A | <input checked="" type="checkbox"/> B | <input checked="" type="checkbox"/> C | D | E | 83 | A |
| 34 | <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> B | <input checked="" type="checkbox"/> C | D | E | 84 | A |
| 35 | <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> B | <input checked="" type="checkbox"/> C | D | E | 85 | A |
| 36 | A | B | <input checked="" type="checkbox"/> C | D | E | 86 | A |
| 37 | <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> B | <input checked="" type="checkbox"/> C | D | E | 87 | <input checked="" type="checkbox"/> B |
| 38 | A | B | <input checked="" type="checkbox"/> C | D | E | 88 | <input checked="" type="checkbox"/> B |
| 39 | A | B | <input checked="" type="checkbox"/> C | D | E | 89 | A |
| 40 | A | B | <input checked="" type="checkbox"/> C | D | E | 90 | A |
| 41 | A | <input checked="" type="checkbox"/> B | <input checked="" type="checkbox"/> C | D | E | 91 | A |
| 42 | A | B | <input checked="" type="checkbox"/> C | D | E | 92 | A |
| 43 | A | <input checked="" type="checkbox"/> B | <input checked="" type="checkbox"/> C | D | E | 93 | <input checked="" type="checkbox"/> B |
| 44 | <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> B | <input checked="" type="checkbox"/> C | D | E | 94 | A |
| 45 | A | B | <input checked="" type="checkbox"/> C | D | E | 95 | A |
| 46 | A | B | <input checked="" type="checkbox"/> C | D | E | 96 | A |
| 47 | A | <input checked="" type="checkbox"/> B | <input checked="" type="checkbox"/> C | D | E | 97 | <input checked="" type="checkbox"/> B |
| 48 | <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> B | <input checked="" type="checkbox"/> C | D | E | 98 | A |
| 49 | A | B | <input checked="" type="checkbox"/> C | D | E | 99 | <input checked="" type="checkbox"/> B |
| 50 | A | B | <input checked="" type="checkbox"/> C | D | E | 100 | A |

KEY 4/11/96

Deleted 4/11/96

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(T) (F)



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PART 2
CODE I.D. NUMBER AT LEFT BY FILLING IN
THE APPROPRIATE BOXES ACCORDING TO
THE EXAMPLE.

FEED THIS DIRECTION

| | NKS | C1 KEY | SP | NE | C2 KEY |
|-----|-----|-----------|----|----|-----------|
| 101 | A | B | C | D | E |
| 102 | A | B | C | D | E |
| 103 | A | B | C | D | E |
| 104 | A | B | C | D | E |
| 105 | A | B | C | D | E |
| 106 | A | B | C | D | E |
| 107 | A | B | C | D | E |
| 108 | A | B | C | D | E |
| 109 | A | B | C | D | E |
| 110 | A | B | C | D | E |
| 111 | A | B | C | D | E |
| 112 | A | B | C | D | E |
| 113 | A | B | C | D | E |
| 114 | A | B | C | D | E |
| 115 | A | B | C | D | E |
| 116 | A | B | C | D | E |
| 117 | A | B | C | D | E |
| 118 | A | B | C | D | E |
| 119 | A | B | C | D | E |
| 120 | A | B | C | D | E |
| 121 | A | B | C | D | E |
| 122 | A | B | C | D | E |
| 123 | A | B | C | D | E |
| 124 | A | B | C | D | E |
| 125 | A | B | C | D | E |
| 126 | A | B | C | D | E |
| 127 | A | B | C | D | E |
| 128 | A | B | C | D | E |
| 129 | A | B | C | D | E |
| 130 | A | B | C | D | E |
| 131 | A | B | C | D | E |
| 132 | A | B | C | D | E |
| 133 | A | B | C | D | E |
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| 135 | A | B | C | D | E |
| 136 | A | B | C | D | E |
| 137 | A | B | C | D | E |
| 138 | A | B | C | D | E |
| 139 | A | B | C | D | E |
| 140 | A | B | C | D | E |
| 141 | A | B | C | D | E |
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| 195 | A | B | C | D | E |
| 196 | A | B | C | D | E |
| 197 | A | B | C | D | E |
| 198 | A | B | C | D | E |
| 199 | A | B | C | D | E |
| 200 | A | B | C | D | E |

Please refer to key
marking instructions
on front.

(T) (F) (T) (F)

ORIGINAL

Master 96-300 CR

U.S. NUCLEAR REGULATORY COMMISSION
SITE-SPECIFIC
WRITTEN EXAMINATION ANSWER KEY

APPLICANT INFORMATION

| | |
|--------------------|--------------------------------|
| Name: | Region: II |
| Date: | Facility/Unit: Crystal River 3 |
| License Level: SRO | Reactor Typs: PWR - B&W 177 |

INSTRUCTIONS

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

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

Applicant's Signature

RESULTS

| | | |
|-------------------|--------|--------|
| Examination Value | 100.00 | Points |
| Applicant's Score | _____ | Points |
| Applicant's Grade | _____ | % |

ORIGINAL

NRC RULES AND GUIDELINES FOR LICENSE EXAMINATIONS

During the administration of this examination the following rules apply:

1. Cheating on the examination will result in a denial of your application and could result in more severe penalties.
2. After you complete the examination, sign the statement on the cover sheet (in black ink) indicating that the work is your own and you have not received or given assistance in completing the examination.
3. To pass the examination, you must achieve a grade of 80% or greater.
4. All questions will be worth one (1) point.
5. There is a time limit of 4 hours for completing the examination.
6. Use only dark pencil to ensure legible copies.
7. Print your name in the blank provided on the examination cover sheet and the answer sheet.
8. Mark your answers on the answer sheet provided and do not leave any question blank.
9. If the intent of a question is unclear, ask question of the examiner only.
10. Restroom trips are permitted, but only one applicant at a time will be allowed to leave. Avoid all contact with anyone outside the examination room to eliminate even the appearance or possibility of cheating.
11. When you complete the examination, assemble a package including the examination questions, examination aids, and answer sheets and give it to the examiner or proctor. Remember to sign the statement on the examination cover sheet.
12. After you have turned in your examination, leave the examination area as defined by the examiner.

1. A maintenance worker enters the Reactor Building to perform a job. The worker's initial exposure history for the current year is as follows:

TEDE = 3.0 Rem
Extremities = 26.5 Rem
Eye = 13.8 Rem
All NRC forms are complete

During the performance of this job he receives the following doses:

Chest TLD = 0.5 Rem
Hand TLD = 17.0 Rem
Head TLD = 3.0 Rem

Which ONE of the following statements is correct concerning his exposure status AFTER the above exposure?

- A. The worker has exceeded the federal exposure limit for extremities only.
- B. The worker has exceeded the federal exposure limit for extremities and the eye.
- C. The worker has exceeded the federal exposure limit for the eye only.
- D. The worker has NOT exceeded any federal exposure limit.

Ans: C

K/A #: 194001K103

Rating: 3.4

Task #: NTS (ACAD 93-009)

History: NEW

SRO/RO: both

Lesson Plan Objective: ROT-5-43 B3 (GT-001 #13 Rad. Worker Trng.)

Lesson Plan Reference: ROT-5-43 page 3

Procedure Reference: HPP-300 page 4

2. Both AH-648-CE and AH-649-CE (Chlorine detectors) have exceeded their actuation setpoint for high chlorine concentration. Toxic Gas Actuation has occurred. If all system components have operated normally, which of the following describes Control Complex configuration?
- A. The Controlled Access Area Exhaust Fans (AHF-20A/20B) will trip in slow speed and the Control Complex Relief Fans (AHF-21A/B) will be tripped.
 - B. The Control Complex Normal Duty Supply Fans (AHF-17A/B) will trip and the Control Complex Emergency Duty Supply Fans (AHF-18A/B) will auto start.
 - C. The Control Complex Normal Duty Supply Fan (AHF-17A/B) will be running and the Control Complex Return Fan (AHF-19A/B) will be running.
 - D. The selected Control Access Area Exhaust Fan (AHF-20A/B) will be running in fast speed and the Control Complex Relief Fans (AHF-21A/B) will be running.

Ans: C

K/A #: 194001K111

Rating: 3.4

Task #: 0880401001

History: MODIFIED BANK

SRO/RO: both

Lesson Plan Objective: ROT-4-87 B6

Lesson Plan Reference: ROT-4-87 pages 2, 3, 4, 5, 6 and 7

Procedure Reference: AP-513 page 3

3. The seat of SFV-100, inlet to the Spent Fuel Demineralizer, needs to be repaired during Mode 1. Which ONE of the following applications from CP-115, Nuclear Plant Tags and Tagging Orders, should be used?
- A. Block Tagout; the valve is manually isolated using red tags on upstream and downstream valves. Adjoining piping to the valve is drained and vented.
 - B. Clearance; the valve is manually isolated using red tags on upstream and downstream valves. Adjoining piping to the valve is drained and vented.
 - C. Block Tagout; the valve is isolated using red tags on upstream and downstream power operated valves. Adjoining piping to the valve is drained and vented.
 - D. Clearance; the valve is isolated using red tags on upstream and downstream power operated valves. Adjoining piping to the valve is drained and vented.

Ans: B

K/A #: 194001K102

Rating: 4.1

Task #: NTS

History: NEW

SRO/RO: SRO

Lesson Plan Objective: ROT-5-40 B2 (ST-002 #1)

Procedure Reference: CP-115 page 2, 3, and 5

4. Which ONE of the following describes the power supplies to the Control Rod Drive System? (Assume normal line-up.)

- A. 480 VAC Plant Auxiliary Bus, through "A" CRD breaker.
480 VAC Plant Auxiliary Bus, through "B" CRD breaker.
- B. 480 VAC Reactor Auxiliary Bus "3A", through "A" CRD breaker.
480 VAC Reactor Auxiliary Bus "3B", through "B" CRD breaker.
- C. 480 VAC Plant Auxiliary Bus, through "A" CRD breaker.
480 VAC Reactor Auxiliary Bus "3B", through "B" CRD breaker.
- D. 480 VAC Reactor Auxiliary Bus "3A", through "A" CRD breaker.
480 VAC Plant Auxiliary Bus, through "B" CRD breaker.

Ans: D

K/A #: 001000K202

Rating: 3.7

Task #: 0010101001

History: BANK; NRC 5-93

SRO/RO: both

Lesson Plan Objective: ROT-4-28 B2

Lesson Plan Reference: ROT-4-28 page 2

Procedure Reference: OP-700A pages 16 and 23

5. Technical Specification 3.4.1, RCS Pressure, Temperature, and Flow Departure from Nucleate Boiling (DNB) limits, requires verification of RCS total flow every 12 hours. The surveillance requirement for RCS total flow is $\geq 139.7 \text{ E6 lb/hr}$ with four RCPs operating or $\geq 104.4 \text{ E6 lb/hr}$ with three RCPs operating. Which ONE of the following is the procedure and location where RCS total flow is read to meet this surveillance?

- A. SP-225, Reactor Coolant Flow Measurement at Hot Full Power; Main Control Board ICS section
- B. SP-225, Reactor Coolant Flow Measurement at Hot Full Power; Main Control Board PSA section
- C. SP-300, Operating Daily Log Surveillance; Main Control Board ICS section
- D. SP-300, Operating Daily Log Surveillance; Main Control Board PSA section

Ans: C

K/A #: 003000A304

Rating: 3.6

Task #: 0160101002

History: NEW

SRG, NO: both

Lesson Plan Objective: ROT-4-09 B1
ROT-5-01 B3

Lesson Plan Reference: ROT-4-09 page 39
ROT-4-60 page 21
ROT-5-01 page 1

Procedure Reference: SP-300 page 28

6. Given the following information, from the PI panel and the computer for API and RPI:

| Control Rod | RPI (PI panel) | RPI (Computer) | API (PI panel) | API (Computer) |
|-------------|----------------|----------------|----------------|----------------|
| 7-1 | 92 | 92.475 | 93 | 90.021 |
| 7-2 | 93 | 92.023 | 90 | 93.789 |
| 7-3 | 90 | 89.987 | 90 | 90.987 |
| 7-4 | 93 | 92.895 | 93 | 92.245 |
| 7-5 | 93 | 92.067 | 94 | 94.997 |
| 7-6 | 91 | 92.357 | 92 | 91.778 |
| 7-7 | 91 | 91.027 | 92 | 93.525 |
| 7-8 | 92 | 90.842 | 92 | 93.642 |

Which ONE of the following evaluates the rod position indication with regard to Technical Specifications?

- A. All rods meet Technical Specification position indication tolerances.
- B. ONE rod only does NOT meet Technical Specification position indication tolerances.
- C. TWO rods only do NOT meet Technical Specification position indication tolerances.
- D. THREE rods do NOT meet Technical Specification position indication tolerances.

Ans: C

K/A #: 014000G005

Rating: 3.7

Task #: 3410103037

History: BANK

SRO/RO: SRO

Lesson Plan Objective: ROT-4-28 A1

Lesson Plan Reference: ROT-4-28 page 56

Procedure Reference: TS 3.1.7 and COLR

7. During "Emergency Boration" besides the red light indicating CAV-60 is open which ONE of the following would verify the valve is open?

- A. Batch Controller readout, on the Control Board, PSA panel.
- B. Flow instrument, at the Boric Acid Pumps, Auxiliary Building.
- C. Flow instrument, next to MUV-24, on the Control Board ES panel "A".
- D. Batch Controller readout, on its Local Panel, Auxiliary Building.

Ans: B

K/A #: 000024EA104

Rating: 3.7

Task #: 0090101002 (0000501025)
0090106001

History: NEW

SRO/RO: both

Lesson Plan Objective: ROT-4-58 B1, B3 and F2

Lesson Plan Reference: ROT-4-58 page 4 and 5

Procedure Reference: OP-403B page 13

8. The plant has lost all Nuclear Services Closed Cycle Cooling (SW) for 10 minutes. AP-330, Loss of Nuclear Service Cooling has been entered. A step in the procedure states:

IF SW flow is lost to the RCPs,
THEN perform the following details.

Continue in this procedure.

- 1 ___ Note the time that SW flow to the RCPs was lost: _____

IF SW flow is lost for 5 min.
THEN perform the following:

- 2 ___ Ensure the Rx is tripped.
3 ___ Start the RCP AC oil lift pumps.
4 ___ Stop all RCPs.
5 ___ Isolate SW to the RCPs by closing the following valves:

| | |
|--------------|--------------|
| o ___ SWV-80 | o ___ SWV-84 |
| o ___ SWV-79 | o ___ SWV-83 |
| o ___ SWV-82 | o ___ SWV-86 |
| o ___ SWV-81 | o ___ SWV-85 |

- 6 ___ Ensure EFP-2 starts.
7 ___ Place EFP-1 in "PULL TO LOCK".

Which ONE of the following explains why this step is performed?

- A. Failure to perform this step can lead to damage in the Reactor Coolant (RC) pump and/or motor.
B. Failure to perform this step can lead to flow balance problems and damage in other SW cooled components.
C. This step ensures that cooling water is available to equipment required for natural circulation.
D. This step isolates SW water to the thermal barrier preventing possible loss of RCS inventory to the system.

Ans: A

K/A #: 000026EK303

Rating: 4.2

Task #: 0080401001

History: NEW

SRO/RO: both

Lesson Plan Objective: ROT-5-61 B3

Lesson Plan Reference: ROT-5-61 page 10

Procedure Reference: AP-330 page 9

9. Following a reactor trip, an immediate action directs the control board operator to push the turbine trip pushbutton. Which of the following is the correct immediate action for the throttle valves and governor valves not closing?

- A. Reduce governor valve position using the position limiter.
- B. Send someone to trip the turbine at the turbine pedestal.
- C. Close governor valves using "GV"/"Fast" pushbutton.
- D. Close the Main Steam Isolation Valves.

Ans: D

K/A #: 000029EK306

Rating: 4.3

Task #: 3440403001

History: NEW

SRO/RO: SRO

Lesson Plan Objective: ROT-5-96 A2

Lesson Plan Reference: ROT-5-96 pages 7 and 8

Procedure Reference: EOP-02 page 5

10. A Radiation Work Permit specifies protective measures, and which ONE of the following.

- A. Directions for the pre-job briefing including members to be present and equipment to be used.
- B. Special instructions required to perform work safely in a radiological environment.
- C. Locations of radiological safe areas, outside of a work area that are accessible.
- D. Reportable events requiring immediate and four (4) hour NRC notification.

Ans: B

K/A #: 194001K104

Rating: 3.5

Task #: NTS (ACAD 93-009)

History: NEW

SRO/RO: both

Lesson Plan Objective: ROT-5-43 B8

Lesson Plan Reference: ROT-5-43 page 8

Procedure Reference: RSP-101 page 4

11. Which ONE of the following should be performed to protect plant personnel from possible flashover or explosion?

- A. An announcement should be made over the public address system when operating 480 volt switchgear.
- B. No painting or other maintenance activities should be performed on vital buses when operating 120 volt switchgear.
- C. The battery rooms should be evacuated when battery testing is being performed.
- D. Personnel should be verified to be clear of affected areas prior to operating 4160 volt switchgear.

Ans: D

K/A #: 194001K107

Rating: 3.7

Task #: 0620101004

History: NEW

SRO/RO: both

Lesson Plan Objective: ROT-4-89 B2

Lesson Plan Reference: ROT-4-89 page 12

Procedure Reference: OP-703 page 5

12. Given the following conditions:

- o A reactor heat-up/startup is in progress.
- o The plant is in Mode 2.

Which ONE of the following is the MINIMUM number of Licensed Reactor Operators (ROs) and Licensed Senior Reactor Operators (SROs) and their required location for the above conditions in accordance with AI-500?

- A. 2 SROs, both inside the control room; 2 ROs, both inside the control room, one located at the main control board.
- B. 2 SROs, both inside the control room; 2 ROs, both inside the control room, both located at the main control board.
- C. 1 SRO inside the control room; 2 ROs, both inside the control room, one located at the main control board.
- D. 1 SRO inside the control room; 2 ROs, both inside the control room, both located at the main control board.

Ans: D

K/A #: 194001A103

Rating: 3.4

Task #: 1190301015

History: BANK; NRC 11-93

SRO/RO: SRO

Lesson Plan Objective: ROT-5-38 B1

Procedure Reference: AI-500 page 11

13. The plant is at 100% FP when a Reactor Building Isolation and Cooling actuation occurs. Which ONE of the following combinations would be the indications found at RC-001-LIC, "MUY-31 PZR LEVEL CONTROL" and MUY-24-FI "RC MAKEUP FLOW" after 10 minutes, if the operator made no adjustments to the pressurizer level setpoint?

- A. RC-001-LIC indicates 100% demand; MUY-24-FI indicates no flow.
- B. RC-001-LIC indicates 0% demand; MUY-24-FI indicates no flow.
- C. RC-001-LIC indicates 100% demand; MUY-24-FI indicates flow.
- D. RC-001-LIC indicates 0% demand; MUY-24-FI indicates flow.

Ans: ~~A~~ B ~~11/11/96~~

K/A #: 004000K302

Rating: 4.1

Task #: 0040101015

History: MODIFIED BANK

SRO/RO: both

Lesson Plan Objective: ROT-4-52 B14
ROT-4-60 B8

Lesson Plan Reference: ROT-4-52 page 3

14. Given the following conditions:

- o Reactor is tripped
- o LOCA in progress
- o RCS pressure 1400 psig
- o Reactor building pressure 5 psig
- o Annunciator alarm, A-02-01, Diverse Containment Isolation A.

Which ONE of the following is the resulting positions of the following valves: Letdown Cooler Outlet Valves (MUV-40, MUV-41 and MUV-505) and Decay Heat Isolation to Reactor Coolant System Valves (DHV-5 and DHV-6) if all automatic functions perform as designed?

- A. MUV-40, MUV-41, MUV-505, DHV-5 and DHV-6 are all closed.
- B. MUV-40, MUV-41, MUV-505, DHV-5 and DHV-6 are all open.
- C. MUV-40, MUV-41 and MUV-505 are open; DHV-5 and DHV-6 are closed.
- D. MUV-40, MUV-41 and MUV-505 are closed; DHV-5 and DHV-6 are open.

Ans: D

K/A #: 013000G012

Rating: 3.9

Task #: 0130101001

History: MODIFIED BANK

SRO/RO: both

Lesson Plan Objective: ROT-4-13 B6

Lesson Plan Reference: ROT-4-13 pages 40, 58 and 59

Procedure Reference: AR-301 page 8
EOP-02 page 23

15. The Electric Shop calls to state the completion and results of SP-521, Quarterly Battery Check. The Electric Shop reports that all sections were completed satisfactorily. They did however find corrosion at 3 terminals and 2 connectors on the "A" battery. Further testing of these batteries showed all other parameters met the surveillance requirements. Which ONE of the following statements is correct?

- A. The "A" battery is inoperable and must be restored to operable in 2 hours.
- B. The "A" battery is inoperable but no action statement is entered as the "B" battery is operable.
- C. The "A" battery is operable but the "A" action must be entered until the corrosion is cleaned off.
- D. The "A" battery is operable and no action statement is entered.

Ans: D

K/A #: 063000G011

Rating: 3.7

Task #: NTS (3410103036)

History: NEW

SRO/RO: SRO

Lesson Plan Objective: ROT-4-64 B3

Lesson Plan Reference: ROT-4-64 page 11

Procedure Reference: TS 3.8.4

16. The Main Fuel Handling Bridge Operator is in the Reactor Building moving fuel with the Main Fuel Handling Bridge, FHCR-1. The hoist is lowering a fuel assembly into the core. When the fuel assembly is 4 feet from the bottom of the core (verified by "ZZ" tape reading) the hoist stops movement. Which ONE of the following is the reason that the downward motion stops?

- A. The hoist motor reached overheat warning.
- B. The hoist entered the Slow Zone. *
- C. The pneumatic pressure is 125 psi.
- D. The Fuel Grapple Underload is reached.

Ans: D

K/A #: 000036EK302

Rating: 3.6

Task #: NTS (0340101003)

History: MODIFIED BANK

SRO/RO: both

Lesson Plan Objective: ROT-4-26 F2

Lesson Plan Reference: ROT-4-26 page 5

Procedure Reference: FP-601A page 5
PT-670 page 3

17. While operating at full power all Off-Site power is lost, the "A" Diesel is inoperable due to routine maintenance and the "B" Diesel fails to energize its bus. Reactor Coolant pressure is 1735 psig and temperature is 555°F. The operators in the Control Room enter EOP-12, Station Blackout. What is the level requirement for the Steam Generator?

- A. ≈93% High Range
- B. ≈89% High Range
- C. ≈63% High Range
- D. ≈24 inches Low Range

Ans: C

K/A #: 000056EA288

Rating: 4.2

Task #: 0000501031

History: MODIFIED BANK

SRO/RO: both

Lesson Plan Objective: ROT-5-100 B4

Lesson Plan Reference: ROT-5-100 page 3

Procedure Reference: EOP-12 page 3

18. Given the following conditions about the pressurizer (PZR):

- o RC-1-LT reads 26 inches
- o RC-3-LT reads 30 inches
- o Annunciator I-08-01, PRESSURIZER LEVEL LOW

Which ONE of the following is the response to these conditions?

- A. There will be a loss of all PZR heater control.
- B. There will be a loss of PZR level control.
- C. There will be a loss of control for the PZR spray valve.
- D. There will be a loss of control for the PORV.

Ans: A

K/A #: 000028EA201

Rating: 3.6

Task #: 0020101009

History: MODIFIED BANK

SRO/RO: SRO

Lesson Plan Objective: ROT-4-60 B8

Lesson Plan Reference: ROT-4-60 page 8

Procedure Reference: OP-305 page 3

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4/11/96

19. Which ONE of the following lists the locations of the connections to the RCS for the High Pressure Injection lines, Low Pressure Injection lines and Core Flood lines (respectively)?

- A. Reactor Coolant Pump's suction lines; connected through Core Flood; direct connection to the Reactor Vessel.
- B. Reactor Coolant Pump's discharge lines; connected through Core Flood; direct connection to the Reactor Vessel.
- C. Reactor Coolant Pump's suction lines; direct connection to the Reactor Vessel; connected through Low Pressure Injection.
- D. Reactor Coolant Pump's discharge lines; connected through Core Flood; direct connection to the Reactor Vessel.

Ans: B

K/A #: 002000K108

Rating: 3.7

Task #: 0020101009

History: MODIFIED BANK

SRO/RO: both

Lesson Plan Objective: ROT-4-60 B2

Lesson Plan Reference: ROT-4-60 page 51

20. The following was the plant status at 1205:

- o Reactor Coolant System (RCS) pressure is 2155 psig.
- o Reactor Building (RB) pressure is 0.5 psig.
- o MUP-1A is running and ES selected.
- o MUP-1B is not running and powered from the "A" ES 4160V bus
- o MUP-1C is not running and is ES selected.

At 1210 RCS pressure is 1490 psig and RB pressure is 3.5 psig. Select the mode of operation for the Make-up pumps if no operator action has been taken.

- A. MUP-1A is running
MUP-1B is running
MUP-1C is running
- B. MUP-1A is running
MUP-1B is running
MUP-1C is off
- C. MUP-1A is running
MUP-1B is off
MUP-1C is off
- D. MUP-1A is running
MUP-1B is off
MUP-1C is running

Ans: D

K/A #: 006020A301

Rating: 4.3

Task #: 0130101001

History: BANK; NRC 11-93

SRO/RO: both

Lesson Plan Objective: ROT-4-13 B6

Lesson Plan Reference: ROT-4-13 pages 7 and 57

Procedure Reference: EOP-02 page 23

21. The containment H₂ monitor has been placed in service and has a reading of 3.7%. Which ONE of the following is correct concerning this reading?

- A. 3.7% H₂ is below the maximum allowable concentration for the RB as well as the flammable limit.
- B. 3.7% H₂ is above the maximum allowable concentration for the RB but is below the flammable limit.
- C. 3.7% H₂ is above both the maximum allowable concentration for the RB and the flammable limit.
- D. 3.7% H₂ is above both the maximum allowable concentration for the RB and the flammable/explosive limit.

Ans: B

K/A #: 028000K501

Rating: 3.6

Task #: 3440403001

History: NEW

SRO/RO: SRO

Lesson Plan Objective: ROT-5-97 A1
ROT-2-30 B2
ROT 4-63 B2

Lesson Plan Reference: ROT-5-97 page 24

22. Assume that the plant is at 40% power and the Integrated Control System (ICS) is in "Auto" when the main turbine trips. The ICS should runback to a ULD output of _____% at a rate of _____%/min.

- A. 15%, 30%/min
- B. 15%, 20%/min
- C. 20%, 30%/min
- D. 20%, 20%/min

Ans: B

K/A #: 045000K412

Rating: 3.6

Task #: 0410101001

History: MODIFIED BANK

SRO/RO: both

Lesson Plan Objective: ROT-4-14 B1

Lesson Plan Reference: ROT-4-14 page 73

Procedure Reference: AP-660 page 5

23. Given the following conditions:

- o The plant is at 100% power
- o The Nuclear Services Closed Cycle Cooling tank (SWT-1) is at 6.5 feet and decreasing a 1 foot/minute
- o WTP-6A and 6B, demineralized water pumps, have tripped and will not start.

Which ONE of the following actions can be performed to aid in maintaining inventory in the surge tank?

- A. Lineup Demineralized Water (DW) through both the manual fill valve and the normal fill valve for SWT-1.
- B. Lineup Decay Heat Closed Cycle Cooling (DC) and back flow water into the SW system.
- C. Lineup Domestic Water (DO) system supplied to the RWP flush pumps through cross connect to the SWT-1 normal fill valve.
- D. Lineup Fire Service (FS) water by connecting hose between Fire Service and Nuclear Services (SW).

Ans: D

K/A #: 076000A201

Rating: 3.7

Task #: 0080401001

History: BANK

SRO/RO: both

Lesson Plan Objective: ROT-4-56 B6

Lesson Plan Reference: ROT-4-56 page 32

Procedure Reference: AP-330 page 5

24. With the reactor critical in the source range, an Integrated Control System (ICS) failure causes all the Turbine Bypass Valves to fail open. Which ONE of the following describes what will happen to reactor coolant temperature and reactor power?

- A. Tave would decrease and reactor power would be between 10% and 15%.
- B. Tave would increase and reactor power would be between 10% and 15%.
- C. Tave would decrease and reactor power would be between 3.5% and 7%.
- D. Tave would increase and reactor power would be between 3.5% and 7%.

Ans: A

K/A #: 041020K409

Rating: 3.3

Task #: 0410101001

History: BANK

SRO/RO: SRO

Lesson Plan Objective: ROT-4-14 B1

Lesson Plan Reference: ROT-4-14 pages 18 and 19
R T-4-66 pages 6 and 7

25. Installed CARDOX (Carbon Dioxide) System protects fire hazard areas where a water based system could permanently damage the equipment. Which ONE of the following combinations of hazards use CARDOX?

- A. Both Main Feedwater Pumps and the Hydrogen Seal Oil Unit
- B. Both Main Feedwater Pumps and the Main Turbine bearings
- C. Both ES 4160V Switchgear rooms and the Hydrogen Seal Oil Unit
- D. Both ES 4160V Switchgear rooms and the Main Turbine bearings

Ans: B

K/A #: 194001K116

Rating: 4.2

Task #: 0860104003

History: NEW

SRO/RO: both

Lesson Plan Objective: ROT-4-07 G12

Lesson Plan Reference: ROT-4-07 page 17

26. Which ONE of the following describes an evolution that requires step-by-step performance with Working or Controlled Copy of the procedure in hand?

- A. Priming a Drain Trap (OP-606, Auxiliary Steam System)
- B. Recirculation of a Reactor Coolant Bleed Tank (OP-407G, Operation of the Reactor Coolant Bleed Tanks)
- C. Alternating Decay Heat Trains (OP-404, Decay Heat Removal System)
- D. Intake screen cleaning (OP-604, Circulating Water System)

Ans: C

K/A #: 194001A102

Rating: 3.9

Task #: NTS

History: NEW

SRO/RO: both

Lesson Plan Objective: ROT-5-77 G4

Procedural Reference: AI-400E pages 5 and 6
OI-09 pages 2 and 3

27. Assume a turbine startup is in progress with an initial HP turbine first stage metal temperature of 250°F. Using the TURBINE ROLLUP CURVE (see attachments) determine what the maximum load is after sixty (60) minutes. Assume that load will be held at 20% for an extended period.

- A. ≈2% load
- B. ≈5% load
- C. ≈9% load
- D. ≈18% load

Ans: D

K/A #: 194001A108

Rating: 3.1

Task #: 0450101002

History: BANK

SRO/RO: SRO

Lesson Plan Objective: ROT-4-78 B3

Lesson Plan Reference: ROT-4-78 pages 11 and 12

Procedural Reference: OP-203 page 32

28. Given the following conditions:

- o A reactor trip has occurred from 100% power.
- o Concurrent with the reactor trip, a loss of both Main and Emergency Feedwater has occurred resulting in the PORV lifting and sticking open.

Select the required EOP section to be entered initially for these conditions.

- A. EOP-02, "Vital System Status Verification."
- B. EOP-03, "Inadequate Subcooling Margin."
- C. EOP-04, "Inadequate Heat Transfer."
- D. EOP-07, "Inadequate Core Cooling."

Ans: A

K/A #: 000007G011

Rating: 4.3

Task #: 0000501025

History: MODIFIED BANK

SRO/RO: both

Lesson Plan Objective: ROT-5-96 B1

Lesson Plan Reference: ROT-5-96 page 1

Procedure Reference: EOP-02 page 1

29. A plant startup is in progress; as reactor power was being increased from 10% Rated Thermal Power (RTP) to 15% RTP, Reactor Coolant System (RCS) pressure increased to 2225 psig and then decreased. The following indications are also observed:

- o RCV-14 green indicator light is on
- o RCV-13, Pressurizer Spray Block Valve, red indicator light is on
- o RCV-10, PORV, green indicator light is on
- o RCV-11, PORV Block Valve, red indicator light is on
- o RCS Tave is fluctuating around 580°F
- o RCS pressure is slowly decreasing
- o Subcooling margin is 35° and slowly decreasing
- o Makeup flow is steady

Which ONE of the following describes the cause of the indications and the correct operator response?

- A. Pressure is decreasing due to an overcooling event, all groups of Pressurizer Heaters should be turned on.
- B. Pressure is decreasing due to an overcooling event, the PORV and Spray Block Valves should be closed.
- C. Pressure is decreasing due to RCV-10 or RCV-14 being open, all groups of Pressurizer Heaters should be turned on.
- D. Pressure is decreasing due to RCV-10 or RCV-14 being open, the PORV and Spray Block Valves should be closed.

Ans: D

K/A #: 000008EA101

Rating: 4.0

Task #: 1020401001
0000501026

History: NEW

SRO/RO: both

Lesson Plan Objective: ROT-3-20 B3

Lesson Plan Reference: ROT-3-20 page 13

Procedure Reference: OP-301 page 115

30. Surveillance Requirement 3.3.9.1 requires a channel check to be performed on the source range instrumentation every 12 hours. This channel check is performed every shift on SP-301. If If NI-1 reads 62 cps, which ONE of the following readings would require contacting reactor engineering?

- A. NI-2 at 12 cps
- B. NI-2 at 27 cps
- C. NI-2 at 93 cps
- D. NI-2 at 276 cps

Ans: A

K/A #: 000032EA207

Rating: 3.4

Task #: 1190301015

History: NEW

SRO/RO: SRO

Lesson Plan Objective: ROT-4-10 B9

Lesson Plan Reference: ROT-4-10 page 42

Procedure Reference: SP-301 pages 17 and 22

31. Which ONE of the following is the sample point and location for Radiation Monitor Liquid-5 (RM-L5)?

- A. Primary coolant letdown (MU); 119' AB, penetration area.
- B. Primary coolant letdown (MU); 95' AB, penetration area.
- C. Decay Heat Closed Cycle Cooling (DC); 95' AB, seawater room.
- D. Decay Heat Closed Cycle Cooling (DC); 119' AB, penetration area.

Ans: C

K/A #: 073000K101

Rating: 3.6

Task #: 0720101004

History: MODIFIED BANK

SR0/RO: both

Lesson Plan Objective: ROT-4-25 B1 and F2

Lesson Plan Reference: ROT-4-25 page 25

32. A substantial fire has occurred in the Makeup Pump Rooms. Which ONE of the following combinations of detection systems should be in alarm in the control room?

- A. Pyrotronics and Ventilation system detectors
- B. Pyrotronics and Fire-Lite Alarm detection systems
- C. Pyr-a-larm and Ventilation system detectors
- D. Pyr-a-larm and Fire-Lite Alarm detection systems

Ans: A

K/A #: 086000A402

Rating: 3.5

Task #: 0860104003

History: NEW

SRO/RO: both

Lesson Plan Objective: ROT-4-07 G1

Lesson Plan Reference: ROT-4-07 pages 2 3, 4 and 5

33. As the SRO in the reactor building (RB) you witness the following:

- o The Main Fuel Handling Bridge Operator is lifting a fuel assembly from the core into the mast.
- o As the fuel assembly is being lifted the mast comes in contact with a bowed assembly adjacent to the one being lifted.
- o The bowed assembly falls over knocking down two other fuel assemblies with it.
- o Large quantities of bubbles are seen coming from the bottom of the core.

Choose the REQUIRED immediate actions to be taken by the Refueling Operators.

- A. Place the fuel assembly being lifted back into the core and evacuate the RB.
- B. Place the fuel assembly being lifted back into the core and evacuate the bridge.
- C. Leave the fuel assembly being lifted in the mast and evacuate the RB.
- D. Leave the fuel assembly being lifted in the mast and evacuate the bridge.

Ans: C

K/A #: 103000A204

Rating: 3.6

Task #: 0340101022

History: NEW

SRO/RO: SRO

Lesson Plan Objective: ROT-4-26 B1

Lesson Plan Reference: ROT-4-26 page 15

Procedure Reference: FP-203 pages 5 and 6

34. Step 3.22 of EOP-07, Inadequate Core Cooling, states: Bypass Reactor Coolant Pump (RCP) start permissives AND start all RCPs. Which ONE of the following is the reason for performing this step?

- A. The plant is in Region 4; this is an attempt to move all water trapped in the cold legs to the core.
- B. The plant is in Region 4; this is an attempt to prevent forced two phase flow through the core.
- C. The plant is in Region 3; this is an attempt to move all water trapped in the cold legs to the core.
- D. The plant is in Region 3; this is an attempt to prevent forced two phase flow through the core.

Ans: A

K/A #: 000074EK307

Rating: 4.4

Task #: 0000501021

History: BANK

SRO/RO: both

Lesson Plan Objective: ROT-5-97 B3
ROT-3-25 B3

Lesson Plan Reference: ROT-5-97 page 22
ROT-3-25 page 9

Procedure Reference: EOP-07 pages 20 and 21

35. Which of the following would cause the control board operator to request chemistry to sample for failed fuel?

- A. Power has been stable at 80% RTP for the last 4 hours; RM-L1, letdown monitor, is in warning.
- B. Power has been stable at 80% RTP for the last 4 hours; RM-A7, nuclear sample room monitor, is in warning.
- C. Power decreased rapidly 2 hours ago but is now stable at 55% RTP; RM-L1, letdown monitor, is in warning.
- D. Power decreased rapidly 2 hours ago but is now stable at 55% RTP; RM-A7, nuclear sample room monitor, is in warning.

Ans: A

K/A #: 000076EA104

Rating: 3.4

Task #: 0020101009

History: NEW

SRO/RO: both

Lesson Plan Objective: ROT-5-78 B12

Lesson Plan Reference: ROT-5-78 page 40

Procedure Reference: OP-301 page 114

36. During Mode 5 the "B" train is out-of-service service. All SP-301, Shutdown Daily Surveillance Log, readings are within their normal band. The electricians discover that the auctioneer circuit for the "A" Inverter cannot perform its function. Which ONE of the following is operability status of "A" vital bus?
- A. The "A" vital bus is operable because both AC and DC inputs to the inverter are within their normal band.
 - B. The "A" vital bus is operable because the vital bus is being supplied from the inverter.
 - C. The "A" vital bus is available, NOT operable because the auctioneer cannot switch the inverter to the DC supply.
 - D. The "A" vital bus is available, NOT operable because the auctioneer cannot switch to the static switch backup AC supply.

Ans: C

K/A #: 000057G004

Rating: 3.7

Task #: 3410103037

History: NEW

SRO/RO: SRO

Lesson Plan Objective: ROT-4-91 A1

Lesson Plan Reference: ROT-4-91 page 11

Procedure Reference: TS B 3.8.8

37. RM-G5, Gas Decay Tank area monitor, needs to have its HIGH setpoint adjusted. Which ONE of the following is the method for setpoint adjustment?

- A. By turning the WARNING/HIGH/OPERATE switch to the HIGH position; hold this switch while rotating internal adjustment shaft to alter setpoint; release switch to OPERATE.
- B. By turning the WARNING/HIGH/OPERATE switch to the HIGH position; rotate internal adjustment shaft to alter setpoint; return switch to OPERATE.
- C. By turning the ALARM RESET/OPERATE/CHECK SOURCE switch to the ALARM RESET position; hold this switch while rotating internal adjustment shaft to alter setpoint; release switch to OPERATE.
- D. By turning the ALARM RESET/OPERATE/CHECK SOURCE switch to the ALARM RESET position; rotate internal adjustment shaft to alter setpoint; return switch to OPERATE.

Ans: A

K/A #: 072000A401

Rating: 3.3

Task #: 0720106001

History: NEW

SRO/RO: both

Lesson Plan Objective: ROT-4-25 F2

Lesson Plan Reference: ROT-4-25 pages 8 and 9

38. The following are current plant conditions:

- o An emergency feedwater actuation has occurred.
- o All reactor coolant pumps are secured due to a loss of adequate subcooling margin.
- o The OTSG level setpoint was selected to Inadequate Subcooling level on the PSA/EFIC panel.

Which one of the following will be the steam generator level setpoint after a reactor coolant pump is restarted?

- A. Inadequate Subcooling Margin level is selected manually
- B. Inadequate Subcooling Margin level is selected automatically
- C. Low Level Limits is selected manually
- D. Low Level Limits is selected automatically

Ans: D

K/A #: 061000A303

Rating: 3.9

Task #: 0190101001

History: BANK; ROTs J - T9

SRO/RO: both

Lesson Plan Objective: ROT-4-15 B8

Lesson Plan Reference: ROT-4-15 pages 13 and 18

Procedure Reference: EOP-13 page 7

39. EOP-08, LOCA Cooldown, step 3.67 states: WHEN Reactor Building (RB) PRESS is < 10 psig and NOT rising, THEN ensure RB spray is stopped. Which ONE of the following is the reason that Building Spray can be stopped?

- A. The remaining heat load within the RB will be removed by the Low Pressure Injection (LPI) system.
- B. The excess pressure in the RB will be reduced by the RB Purge system.
- C. The remaining heat load within the RB will be removed by the Post Accident Long Term Cooling and ambient losses.
- D. The excess pressure in the RB will be removed by the RB fans.

Ans: D

K/A #: 026020A203

Rating: 3.7

Task #: 3340403001

History: NEW

SRO/RO: SRO

Lesson Plan Objective: ROT-5-95 A2

Lesson Plan Reference: ROT-5-95 page 54

Procedure Reference: EOP-8 page 55

40. RCP thrust bearing temperatures on RC-133-TI are as follows:

| RCP-1A | | RCP-1B | | RCP-1C | | RCP-1D | |
|--------|-------|--------|-------|--------|-------|--------|-------|
| UPPER | LOWER | UPPER | LOWER | UPPER | LOWER | UPPER | LOWER |
| 168°F | 110°F | 189°F | 100°F | 251°F | 175°F | 160°F | 112°F |

Assume the thrust bearing temperatures on the affected pump(s) continues to increase.

Based on current plant conditions, which ONE of the following statements is the required operator action?

- A. Start both lift oil pumps on RCP-1C; TRIP RCP-1C.
- B. Start both lift oil pumps on RCP-1B and RCP-1C.
- C. Start both lift oil pumps on RCP-1B and RCP-1C; TRIP RCP-1C.
- D. Start both lift oil pumps on RCP-1B and RCP-1C; TRIP both RCP-1B and RCP-1C.

Ans: C

K/A #: 000015EA208

Rating: 3.4

Task #: 0020101018

History: MODIFIED BANK

SRO/RO: both

Lesson Plan Objective: ROT-4-60 B18

Lesson Plan Reference: ROT-4-60 pages 27 and 32

Procedure Reference: OP-302 page 7

41. During full power operation (98%) a control rod is found to be untrippable. Which ONE of the following actions should be taken?
- A. Verify SDM is $\geq \Delta 1\%$ k/k in 1 hour OR be in MODE 3 in 6 hours.
 - B. Verify SDM is $\geq \Delta 1\%$ k/k in 1 hour AND be in MODE 3 in 6 hours.
 - C. Reduce thermal power to $\leq 60\%$ of the allowable thermal power in 2 hours OR verify SDM is $\geq 1\%$ Δ k/k in 1 hour.
 - D. Realign control rod to within 6.5% of the group average height in 1 hour AND initiate boration to restore SDM to within limit in 1 hour.

Ans: B

K/A #: 000005EK304

Rating: 4.1

Task #: 1190301015

History: NEW

SRO/RO: both

Lesson Plan Objective: ROT-5-01 B9

Procedure Reference: TS 3.1.4

42. Given the following conditions:

- o The reactor has tripped from 100% power.
- o The Subcooling Margin is 0°F.
- o RCPs are off.
- o No HPI is available.
- o RCS pressure is 785 psig.
- o Thot is 518°F.
- o Tcold is 516°F.
- o OTSG pressure is 770 psig.

Select the mode of RCS cooling occurring for the present conditions.

- A. Single phase Natural Circulation
- B. Forced convection
- C. Boiler-condenser Natural Circulation
- D. Free convection

Ans: C

K/A #: 000011EK101

Rating: 4.4

Task #: 0000501009

History: BANK; NRC 11-93

SRO/RO: SRO

Lesson Plan Objective: ROT-3-03 B5

Lesson Plan Reference: ROT-3-03 pages 7 and 8

43. Which ONE of the following is the appropriate annotation for chart recorders to enable analysis of transients when unusual or significant events occur?

- A. Record time and operator initials
- B. Record time and event notation
- C. Record date and operator initials
- D. Record date and event notation

Ans: B

K/A #: 194001A106

Rating: 3.4

Task #: NTS

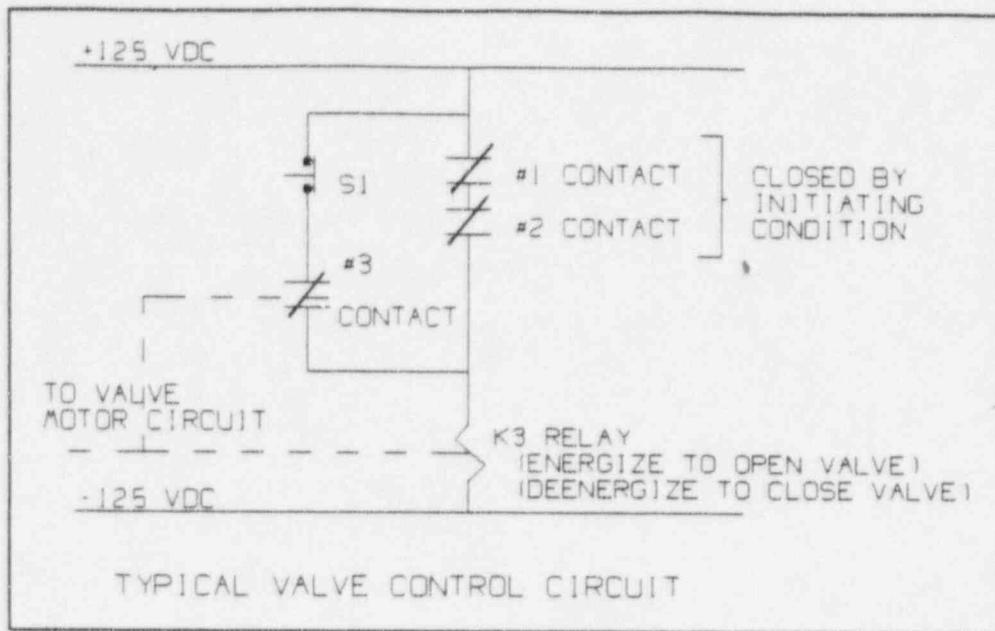
History: NEW

SRO/RO: both

Lesson Plan Objective: ROT-5-38 G9

Procedure Reference: OI-05 page 5

44.



Which ONE of the following will close the valve?

- A. Loss of 125 VDC
- B. Both #1 and #2 contacts open
- C. Either #1 or #2 contact opens
- D. Depressing the S1 pushbutton with the initiating condition present

Ans: A

K/A #: 194001A107

Rating: 2.5

Task #: NTS

History: BANK

SRO/RO: both

Lesson Plan Objective: ROT-2-20 G3

Lesson Plan Reference: ROT-2-20 pages 14 and 15

45. A building operator calls the control room with the following information concerning the unexpected trip of RWP-1:

- o RWP-1 has a dropped target on its breaker
- o The target reads INST. OVERCURRENT

Which ONE of the following is the appropriate guidance to reclose the breaker?

- A. The target may be reset and breaker closure attempted one time.
- B. The target may be reset and the breaker closed repeatedly to verify the relay.
- C. The target may NOT be reset unless the initiating cause is known and the overcurrent has cleared.
- D. The target may NOT be reset until the switchgear room has been cleared of all personnel.

Ans: C

K/A #: 194001A112
194991K107

Rating: 4.1/3.7

Task #: 0620101004

History: NEW

SRO/RO: SRO

Lesson Plan Objective: ROT-4-89 B1, G6 and G7

Lesson Plan Reference: ROT-4-89 page 11

Procedure Reference: OI-02 page 4
OP-703 page 8

46. Which ONE of the following sets of Makeup Tank pressure and level indications require **NO** operator actions under steady state conditions? (See attachments for curve)

- A. 32 psig and 90 inches
- B. 30 psig and 91 inches
- C. 28 psig and 92 inches
- D. 26 psig and 93 inches

Ans: D

K/A #: 004010K501

Rating: 3.2

Task #: 0040101015

History: BANK; ROTs J - T5

SRO/RO: both

Lesson Plan Objective: ROT-4-52 B24

Lesson Plan Reference: ROT-4-52 page 15

Procedure Reference: OP-402 page 3

47. Assuming the plant was reducing power due to a steam leak inside the containment when a 4 psig Reactor Building Isolation and cooling occurred. Which of the following would be the expected Low Pressure Injection (LPI) system component status 1 minute after 4# was reached?

- A. LPI actuated components would stay in their normal ES standby condition.
- B. LPI actuated components would go to their ES actuated condition.
- C. LPI actuated components excluding LPI pumps would go to their ES actuated condition.
- D. LPI actuated components excluding LPI valves would go to their ES actuated condition.

Ans: B

K/A #: 013000A102

Rating: 4.2

Task #: 0130101001

History: BANK; ROTs J - T8

SRO/RO: both

Lesson Plan Objective: ROT-4-13 B1

Lesson Plan Reference: ROT-4-13 page 35

48. Which ONE of the following describes the Sensotec Load Cell overload setpoint and its basis for FHCR-3, Spent Fuel Handling Bridge?

- A. \approx 2800/2700 pounds (heavy/lite); to provide electrical overload protection for the fuel hoist motor
- B. \approx 2800/2700 pounds (heavy/lite); to limit the amount of withdrawal force on the fuel assembly
- C. \approx 3200/3100 pounds (heavy/lite); to provide electrical overload protection for the fuel hoist motor
- D. \approx 3200/3100 pounds (heavy/lite); to limit the amount of withdrawal force on the fuel assembly

Ans: B

K/A #: 034000A101

Rating: 3.2

Task #: 0340106001

History: MODIFIED BANK

SRO/RO: SRO

Lesson Plan Objective: ROT-4-26 F2

Lesson Plan Reference: ROT-4-26 page 10

Procedure Reference: FP-203 page 7
PT-671 page 1

49. T-incore on SPDS (Safety Parameters Display System) reads 661°F and RCS pressure is slowly increasing. If the subcooling monitor indicate 7° subcooled, which one of the following was the last valve(s) to open?

- A. Pressurizer spray valve 40% setpoint
- B. Pressurizer spray valve 100% setpoint
- C. Pilot-operated relief valve
- D. Pressurizer code safety valves

Ans: C

K/A #: 010000K403

Rating: 4.1

Task #: 0020101009

History: MODIFIED BANK

SRO/RO: both

Lesson Plan Objective: ROT-4-60 B3

Lesson Plan Reference: ROT-4-60 pages 10 and 11

Procedure Reference: OP-305 page 3

50. The makeup system (MU) is in a normal full power lineup when SW is lost due to a system leak. Which ONE of the following is the MU system response and the reason for that response?

- A. The bypass valve for the makeup demineralizers will automatically open to protect the demineralizers from high temperatures.
- B. The filter bypass valves for the makeup prefilters will automatically open to protect the filter from high temperatures.
- C. The letdown isolation valve will automatically close to protect the makeup demineralizers from high temperatures.
- D. The letdown cooler outlet isolation valves will automatically close to protect the makeup filters from high temperatures.

Ans: C

K/A #: 011000A207

Rating: 3.0

Task #: 0040401001

History: NEW

SRO/RO: both

Lesson Plan Objective: ROT-4-52 B2

Lesson Plan Reference: ROT-4-52 page 28

Procedure Reference: OP-402 page 4

51. The control board operator notices the following indications on the control board:

- o Tave is stable at 579°F
- o Reactor power is steady at 98% RTP
- o Control Rod Group 7 are continuously moving outward

Which ONE of the following is the possible cause of the rod motion?
(SASS is out-of-service)

- A. RCS dilution.
- B. Selected Tcold fails high.
- C. The gain for NI-5 and NI-6 is adjusted down.
- D. Feedwater demand signal fails low.

Ans: C

K/A #: 000001G005

Rating: 3.6

Task #: 0010401003

History: NEW

SRO/RO: SRO

Lesson Plan Objective: ROT-5-67 B1

Lesson Plan Reference: ROT-5-67 pages 1, 2 and 5

Procedure Reference: AP-525 page 1

52. Reactor Coolant Pressure has decreased to < 1500 psig. If all automatic systems function properly, which ONE of the following describes the condition of the Decay Heat Closed Cycle Cooling Pumps (DCP-1A and DCP-1B) and the DC valves to the Decay Heat Heat Exchanger (DHHEs)?

- A. DCP-1A and DCP-1B auto start with an Engineered Safeguards signal as a Block 2 load and DC valves will automatically control RCS cooldown rate.
- B. DCP-1A and DCP-1B auto start with an Engineered Safeguards signal as a Block 2 load and DC valves are failed to their full cooling flow position.
- C. DCP-1A and DCP-1B auto start with an Engineered Safeguards signal as a Block 6 load and DC valves will automatically control RCS cooldown rate.
- D. DCP-1A and DCP-1B auto start with an Engineered Safeguards signal as a Block 6 load and DC valves are failed to their full cooling flow position.

Ans: D

K/A #: 076000K108

Rating: 3.5

Task #: 0050101023

History: BANK; ROTs J - T5

SRO/RO: both

Lesson Plan Objective: ROT-4-55 B1 and F2

Lesson Plan Reference: ROT-4-55 pages 5 and 24

53. Given the following plant conditions:

| | |
|----------------------|--------------------------|
| Reactor tripped from | 98% RTP |
| RCS Tave | 535°F |
| RCS Pressure | 1550# |
| Pressurizer Level | 55" |
| Subcooling Margin | 65° |
| OTSG Levels A | 50" |
| OTSG Levels B | 20" |
| OTSG Pressure A | 900# |
| OTSG Pressure B | 650# |
| Makeup Flow | 200 gpm |
| Feedwater Flow A | 0.5×10^6 lbm/hr |
| Feedwater Flow B | 1.5×10^6 lbm/hr |
| Megawatts Electric | 0 |

From the indications given, which ONE of the following transients is in progress?

- A. Loss of Coolant Accident (LOCA)
- B. Steam Generator Tube Rupture (SGTR)
- C. Overcooling Event
- D. Undercooling Event

Ans: C

K/A #: 0000040EA203

Rating: 4.7

Task #: 0000501028

History: BANK

SRO/RO: both

Lesson Plan Objective: ROT-3-22 B1

Lesson Plan Reference: ROT-3-22 pages 3 and 4

54. Given the following conditions:

- o The plant is in MODE 3
- o SP-102, Control Rod Drop Time Tests, are in progress
- o Rod 5-3 has a drop time of 1.78 seconds

Which ONE of the following power levels is the highest power allowed for the above conditions?

- A. Mode 1, 60% allowable thermal power
- B. Mode 2, 5% rated thermal power
- C. Mode 2, at criticality
- D. Mode 3

Ans: D

K/A #: 000005EA203

Rating: 4.4

Task #: 3410103036

History: MODIFIED BANK

SRO/RO: SRO

Lesson Plan Objective: ROT-5-01 Ai

Procedure Reference: SP-102 page 2
TS 3.1.4

55. The following plant conditions exist:

- o 37% Rated Thermal Power
- o Condenser vacuum is 23 in-Hg
- o ΔT between condensers is 45°F
- o Generator stator bar discharge temperature is 107°C

Which ONE of the following actions should be taken?

- A. Enter AP-660, Turbine Trip
- B. Enter AP-510, Rapid Power Reduction
- C. Enter EOP-02, Vital System Status Verification
- D. All conditions are within specification; no procedure entry is required

Ans: A

K/A #: 000051EA202

Rating: 4.1

Task #: 0450401001

History: MODIFIED BANK

SR0/RO: both

Lesson Plan Objective: ROT-5-29 B1
ROT-5-96 B1

Lesson Plan Reference: ROT-5-29 page 1
ROT-5-96 page 3

Procedure Reference: AP-660 page 1
EOP-02 page 1

56. Step 3.5 of EOP-12, Station Blackout, directs the operator to "Actuate MS line isolation on both OTSGs".

Which ONE of the following is the reason for this step?

- A. To help control cooldown by minimizing the length of steam line available for steam control problems.
- B. To prevent OTSG dry out due to the loss of main feedwater.
- C. To maintain greater than 100 psig in the OTSGs due to the impact of the loss of power on turbine bypass valves.
- D. To ensure OTSGs are isolated due to the impact of the loss of power on the MS line isolation logic.

Ans: A

K/A #: 000055EK302

Rating: 4.6

Task #: 0000501031

History: BANK; NRC 5-93

SRO/RO: both

Lesson Plan Objective: ROT-5-100 B3

Lesson Plan Reference: ROT-5-100 page 6

Procedure Reference: EOP-12 page 5

57. During a liquid release, the control board operator receives an RM-L2 trip on valid high radiation. Which ONE of the following combinations of actions must be performed by operations?
- A. The Auxiliary Building Operator must be notified to ensure that the release isolation valve (SDV-90) has automatically closed; the same Liquid Radwaste Release Permit (LRWRP) will apply when the release is restarted.
 - B. The Auxiliary Building Operator must be notified to ensure that the release isolation valves (WDV-891 and WDV-892) have automatically closed; the same Liquid Radwaste Release Permit (LRWRP) will apply when the release is restarted.
 - C. The Auxiliary Building Operator must be notified to ensure that the release isolation valve (SDV-90) has automatically closed; the Liquid Radwaste Release Permit (LRWRP) will be closed out.
 - D. The Auxiliary Building Operator must be notified to ensure that the release isolation valves (WDV-891 and WDV-892) have automatically closed; the Liquid Radwaste Release Permit (LRWRP) will be closed out.

Ans: D

K/A #: 000059EA205

Rating: 3.9

Task #: 3440403001

History: NEW

SRO/RO: SRO

Lesson Plan Objective: ROT-5-48 A7

Lesson Plan Reference: ROT-5-48 page 17
ROT-4-25 page 28

Procedure Reference: OP-407A page 4

58. Per the Follow-Up Actions of EOP-02, Vital System Status Verification, the operator must ensure that the Turbine Generator output breakers open. Which of the following is the reason for this action?
- A. This prevents damage to the generator voltage regulator from over-ranging.
 - B. This prevents damage to the LP turbine from lack of cooling to turbine blading.
 - C. This prevents damage to the output breakers from a reverse power condition.
 - D. This prevents damage to the generator from becoming motorized.

Ans: B

K/A #: 000007EK301

Rating: 4.6

Task #: 0000501025

History: BANK; ROTs J - T10A

SRO/RO: both

Lesson Plan Objective: ROT-5-96 B3

Lesson Plan Reference: ROT-5-96 page 27

Procedure Reference: EOP-02 page 17

59. What is the BASIS for tripping all Reactor Coolant Pumps (RCPs) within 2 minutes when there is a Loss of Subcooling Margin?
- A. This keeps the RCS void fraction less than 70% such that a loss of RCPs would not uncover the core.
 - B. Securing the Reactor Coolant Pumps maintains electrical loading at a minimum, thereby reducing the effects of a potential LOOP.
 - C. This allows the RCS to separate into a steam and water mixture, enhancing steam cooling which allows only high energy steam to escape from the break.
 - D. With the RCPs secured the ΔP across the leak is reduced which prevents the leak size from increasing.

Ans: A

K/A #: 000009EK321

Rating: 4.5

Task #: 0000501026

History: BANK; NRC 11-93; ROTs J - T10A

SRO/RO: both

Lesson Plan Objective: ROT-5-85 B3

Lesson Plan Reference: ROT-5-85 page 4

Procedure Reference: EOP-03 page 3

60. Which ONE of the following combinations of Core Outlet Pressure and Reactor Outlet Temperature has the most limiting technical specification action?

- A. 2300 psig; 630°F
- B. 2200 psig; 625°F
- C. 2100 psig; 620°F
- D. 2000 psig; 615°F

Ans: D

K/A #: 000027EA204

Rating: 4.3

Task #: 3410103036

History: BANK

SRO/RO: SRO

Lesson Plan Objective: ROT-5-01 A1

Procedure Reference: TS 2.1.1

61. Plant heatup and pressurization for a normal startup is in progress. RCS pressure is 1600 psig and the operator has just positioned the HPI 1500 psig Bypass Switches to RESET the bypass.

Which ONE of the following describes the status of the HPI CHANNEL FUNCTION ENABLED green lights and the FUNCTIONAL STATUS of HPI?

- A. The green lights are OUT, but the ES HPI system is fully functional.
- B. The green lights are OUT, and the ES HPI system will NOT function for a pressure decrease below 1500 psig.
- C. The green lights are ON, and the ES HPI system is fully functional.
- D. The green lights are ON, but the ES HPI system will NOT function for a pressure decrease below 1500 psig.

Ans: A

K/A #: 194001A113

Rating: 4.1

Task #: 0130101001

History: BANK; NRC 5-93

SRO/RO: both

Lesson Plan Objective: ROT-4-13 B4

Lesson Plan Reference: ROT-4-13 pages 16 and 17

Procedure Reference: OP-507 page 10

62. A limit and precaution in OP-202, Plant Heatup, states "Ensure chemistry analysis of the RCS shows hydrazine concentration as "less than detectable", prior to placing a makeup demineralizer in service." What is the basis for this?

- A. It prevents the release of undesirable ions from the makeup demineralizers.
- B. It prevents the premature exhaustion of the demineralizer resin.
- C. It prevents the demineralizers from causing a change in RCS pH.
- D. It prevents the release of resin fines into the RCS.

Ans: A

K/A #: 194001A114

Rating: 2.9

Task #: 1150101016

History: BANK; ROTs J - T10A

SRO/RO: both

Lesson Plan Objective: ROT-5-103 B1

Procedure Reference: OP-202 page 7

63. The gate between the Spent Fuel pools has been dropped while moving it into position causing a large leaking gash in the bottom of the "A" pool. The crew sees that the standard means of fill is not keeping up with the leak. The Auxiliary Building operator wants to run a fire service hose on the Spent Fuel floor to the pool and start filling with Fire Service water. What is the minimum level of approval and when can it be authorized?

- A. Prior to the evolution starting; by an SRO.
- B. After the evolution has started; by an SRO.
- C. Prior to the evolution starting; by an RO.
- D. After the evolution has started; by an RO.

Ans: A

K/A #: 194001A112

Rating: 4.1

Task #: NTS (3440403001)

History: NEW

SRO/RO: SRO

Lesson Plan Objective: ROT-5-107 B1
ROT-5-42 B3

Lesson Plan Reference: ROT-5-42 pages 16 and 17

Procedure Reference: AI-505 page 4

64. Which ONE of the following describes the source range nuclear instrument response as Reactor Coolant system inventory decreases during a Loss of Coolant Accident (LOCA)?

The detector will:

- A. Increase as reactor vessel level decreases. The count rate will continue to increase as water level continues to decrease.
- B. Decrease as reactor vessel level decreases. The count rate will continue to decrease as water level continues to decrease.
- C. Increase as reactor vessel level decreases. The count rate will reach a maximum level then begin to decrease as water level continues to decrease.
- D. Decrease as reactor vessel level decreases. The count rate will reach a minimum level then begin to increase as water level continues to decrease.

Ans: C

K/A #: 015020K506

Rating: 3.1

Task #: 01150101005

History: BANK

SRO/RO: both

Lesson Plan Objective: ROT-4-10 B13

Lesson Plan Reference: ROT-4-10 page 31

65. The reactor and turbine tripped due to a loss of both 6.9KV busses. Which of the following indications show that natural circulation has been established?

- A. RCS Tcold minus OTSG Tsat is 3°F and tracking
- B. Incore temperature is within 20°F of Thot
- C. Core differential temperature is 50°F and increasing
- D. When OTSG pressure is decreased Thot, Tcold, and Tincore increase

Ans: A

K/A #: 017020K301

Rating: 3.7

Task #: 0000501009

History: BANK; ROTs J - T10A

SRO/RO: both

Lesson Plan Objective: ROT-3-03 B4

Lesson Plan Reference: ROT-3-03 page 5

Procedure Reference: EOP-09 page 7

66. After a control rod has dropped in the core and AP-545, Plant Runback, is entered. Which ONE of the following describes the reason for the immediate actions in this procedure?

- A. ICS hand auto stations in manual may cause the runback to NOT occur. It is the responsibility of the operator to trip the plant if ICS functions are NOT occurring.
- B. ICS hand auto stations may malfunction causing the runback to exceed its limit. It is the responsibility of the operator to return ICS functions to automatic.
- C. ICS hand auto stations in manual may cause the runback to NOT occur. It is the responsibility of the operator to perform ICS functions which are NOT automatically occurring.
- D. ICS hand auto stations may malfunction causing the runback to exceed its limit. It is the responsibility of the operator to trip the plant if ICS functions fail.

Ans: C

K/A #: 000003EK302

Rating: 3.7

Task #: 3440403001

History: NEW

SRO/RO: SRO

Lesson Plan Objective: ROT-5-68 A1

Lesson Plan Reference: ROT-5-68 pages 3 and 4

Procedure Reference: AP-545 page 3

67. During operation at 100% with the "A" Reactor Protection System (RPS) channel in channel bypass, RCS pressure exceeds the RPS high pressure trip setpoint. RPS channels "B" and "D" trip, but RPS channel "C" does not trip due to a failed pressure bistable. Which ONE of the following statements is correct concerning the CRD breaker/electronic trip alignment?

- A. All CRD breakers and electronic trips will open. This will result in a reactor trip.
- B. No CRD breakers or electronic trips will open. This will not result in a reactor trip.
- C. The "B" and "D" breakers and the "F" electronic trip will open. This will not result in a reactor trip.
- D. The "B" and "D" breakers and the "F" electronic trip will open. This will result in a reactor trip.

Ans: A

K/A #: 012000K603

Rating: 3.5

Task #: 0120101005

History: BANK

SRO/RO: both

Lesson Plan Objective: ROT-4-12 B4

Lesson Plan Reference: ROT-4-12 page 49

68. SP-10-MS, Main Steam header pressure selector switch, is selected to "A". The reactor has just tripped. The following control board conditions are noticed:

- o MSV-9 and MSV-10, "A" side Turbine Bypass valves are closed
- o MSV-11 and MSV-14, "B" side Turbine Bypass valves are open
- o SASS MISMATCH is in alarm

Which ONE of the following would explain these conditions?

- A. SASS has transferred SP-10-MS input to the "B" side transmitter; the selected "A" side transmitter has failed midscale.
- B. SASS has transferred SP-10-MS input to the non-selected "A" side transmitter; the selected "A" side transmitter has failed midscale.
- C. SASS has NOT transferred SP-10-MS input; the selected "A" side transmitter has failed midscale.
- D. SASS has NOT transferred SP-10-MS input; the non-selected "A" transmitter has failed midscale.

Ans: C

K/A #: 016000G001

Rating: 3.1

Task #: 0160101010

History: NEW

Ans: A

K/A #: 016000G001

Rating: 3.4

Task #: 0160101010

History: BANK; ROTs J -T8

SRO/RO: both

Lesson Plan Objective: ROT-4-09 B6

Lesson Plan Reference: ROT-4-09 pages 6 and 81

Procedure Reference: OP-501 page 16

69. Given the following conditions:

- o RCS pressure is 2155 psig
- o NI-5 reads 46%
- o NI-6 reads 47%
- o NI-7 reads 45%
- o NI-8 reads 46%
- o Total Feedwater flow is 1.0×10^6 lbm/hr)

Which ONE of the following would be the expected response of the main turbine, emergency feedwater and the reactor?

- A. The reactor and the main turbine are tripped; emergency feedwater has actuated.
- B. The reactor is NOT tripped; the main turbine is tripped; emergency feedwater has actuated.
- C. The reactor is NOT tripped; the main turbine is tripped; emergency feedwater has NOT actuated.
- D. The reactor and the main turbine are NOT tripped; emergency feedwater has NOT actuated.

Ans: ~~B~~ A *11/11/96*

K/A #: 000029EA201

Rating: 4.7

Task #: 0120101015

History: BANK

SRO/RO: SRO

Lesson Plan Objective: ROT-4-12 B5

Lesson Plan Reference: ROT-4-12 page 46

70. When manually transferring a Vital Bus from normal to its alternate power supply, an initial step (before the actual transfer) has the operator verify that the "IN SYNC" lamp is ON, on the Vital Bus Static Transfer Switch (VBXS). Which ONE of the following lists the power supplies that the IN SYNC" lamp on the VBXS is monitoring?

- A. Inverter and normal source AC
- B. Battery and normal source AC
- C. Inverter and alternate source AC
- D. Battery and alternate source AC

Ans: C

K/A #: 000057EA101

Rating: 3.7

Task #: 0620106002

History: NEW

SRO/RO: both

Lesson Plan Objective: ROT-4-91 F2

Lesson Plan Reference: ROT-4-91 page 3

Procedure Reference: OP-703 page 20

71. A step in AP-880, Fire Protection, has the control room operators stop AHF-29A, AHF-29B, AHF-24A and AHF-24B, intermediate building (IB) supply and exhaust fans, if a fire is present in the intermediate building 95' or 119' elevation. Which ONE of the following is the reason for this action?

- A. If the fans are still operating some fire dampers in the IB will not function properly.
- B. If the fans are still operating the sprinkler systems do not work as effectively.
- C. This action will result in the closing of the fan dampers.
- D. The fans' dampers when closed are designed to prevent fire spread to the auxiliary building.

Ans: C

K/A #: 000067EK304

Rating: 3.3/4.1

Task #: 0860501005

History: NEW

SRO/RO: both

Lesson Plan Objective: ROT-5-69 B3

Lesson Plan Reference: ROT-5-69 page 6

Procedure Reference: AP-880 page 4

72. Given the following sequence of events:

- o At 1400 the plant is at 100% FP
- o At 1402 a station blackout occurs
- o EOP-12, Station Blackout is entered
- o At 1402 an ALERT, emergency classification is entered

Which ONE of the following delineates the notification requirements for the CR-3 NRC Resident, Plant personnel, and State Warning Point Tallahassee (SWPT)?

- A. Notify the CR-3 NRC Resident Inspector and Plant personnel within 15 minutes; notify State Warning Point Tallahassee as soon as possible
- B. Notify the CR-3 NRC Resident Inspector and Plant personnel as soon as possible; notify State Warning Point Tallahassee within 15 minutes
- C. Notify the CR-3 NRC Resident Inspector and Plant personnel in less than one (1) hour; notify State Warning Point Tallahassee within 15 minutes
- D. Notify the CR-3 NRC Resident Inspector and Plant personnel within 15 minutes; notify State Warning Point Tallahassee in less than one (1) hour

Ans: B

K/A #: 000055G002

Rating: 4.1

Task #: 3440403006

History: MODIFIED BANK

SRO/RO: SRO

Lesson Plan Objective: ROT-5-34 A4

Lesson Plan Reference: TRE-007 page 40

73. Step 4.1.7 in OP-209, Plant Cooldown, has the operator verify cooldown surveillance is in progress. The details states: refer to SP-422, RC System Heatup/Cooldown Surveillance. Which ONE of the following explains this requirement?

- A. SP-422 records the cooldown temperatures of the Reactor Coolant System to verify that OTSG Tube to Shell ΔT limits are not exceeded; Tensile Stress Limit $< 100^\circ\text{F}$ ($T_{\text{shell(avg)}} - T_c$)
- B. SP-422 records the cooldown rates of the Reactor Coolant System to verify that they are maintained within Technical Specification limits; for RCS temperature $> 280^\circ\text{F}$ the cooldown rate limit is $\leq 50^\circ\text{F}$ in any 1/2 hour period.
- C. SP-422 records the cooldown temperatures of the Reactor Coolant System so that subcooling margin can be verified; for RCS pressure ≤ 1500 to > 250 PSIG subcooling margin should be $\geq 50^\circ\text{F}$.
- D. SP-422 records the cooldown rates of the Reactor Coolant System to verify no Low Temperature Overpressure Protection limits are violated; for RCS temperature $\leq 283^\circ\text{F}$ LTOPs limits are required.

Ans: B

K/A #: 000025EA101

Rating: 3.7

Task #: 1150101020

History: NEW

SRO/RO: both

Lesson Plan Objective: ROT-5-106 B2

Procedure Reference: OP-209 page 16
SP-422 page 4

74. A reactor startup is in progress. When the reactor is critical at 5000 cps on both source range instruments, NI-2 fails to 0.1 cps. Which ONE of the following is the maximum power allowed under these conditions?

- A. 5 E3 cps
- B. 5 E-3 amps
- C. \leq 5% rated power
- D. 100% rated power (power is not limited by failure)

Ans: D

K/A #: 000032EK301

Rating: 3.6

Task #: 1190301015

History: BANK

SRO/RO: both

Lesson Plan Objective: ROT-4-10 B9

Lesson Plan Reference: ROT-4-10 page 42

Procedure Reference: TS 3.3.9

75. The following plant conditions exist:

- o Power is 99% RTP
- o RCS Thot is 602°F
- o Pressurizer level is 220"
- o MUT level is 73"
- o All RCPs are operating
- o RCS flow is 160×10^6 lbm/hr
- o RCS pressure is 1927 psig
- o Electrical output is 860 MWe
- o Power factor is 0.98
- o Control Rod group 7 is at 98% withdrawn

Which ONE of the following actions should be taken?

- A. No action should be taken; all parameters are within limits.
- B. Restore DNB limits within 2 hours.
- C. Decrease var loading.
- D. Trip the reactor.

Ans: D

K/A #: 000007EA202

Rating: 4.6

Task #: 3440403001

History: NEW

SRO/RO: SRO

Lesson Plan Objective: ROT-5-96 A1
ROT-5-107 B2

Lesson Plan Reference: ROT-5-96 page 1

Procedure Reference: EOP-02 page 1
AI-505 page 19

76. By definition, the MINIMUM emergency classification which should be entered if an event occurs involving an actual or likely major failure of plant functions needed for protection of the public is a/an

- A. Alert
- B. Unusual Event
- C. Site Area Emergency
- D. General Emergency

Ans: C

K/A #: 194001A116

Rating: 4.4

Task #: NTS

History: BANK

SRO/RO: both

Lesson Plan Objective: ROT-5-34 B4

Lesson Plan Reference: TRE-007 page 48

Procedure Reference: EM-202 page 3

77. During a Reactor trip several control rods are not fully inserted. If both of the Boric Acid Pumps (CAP-1A and CAP-1B) are incapable of boric acid injection, which ONE of the following is the appropriate means of "emergency boration"?
- A. Opening the suction valves (MUV-58 and MUV-73) from the Borated Water Storage Tank (BWST) to the Makeup Pumps (MUPs) and diverting letdown flow to a Reactor Coolant Bleed Tank (RCBT).
 - B. Gravity drain of the Boric Acid Storage Tanks (BASTs) through the Batch Feed Valve (MUV-103) into the Makeup Tank (MUT) and diverting letdown flow to a Reactor Coolant Bleed Tank (RCBT).
 - C. Opening the suction valves (MUV-58 and MUV-73) from the Borated Water Storage Tank (BWST) through the Batch Feed Valve (MUV-103) into the Makeup Tank (MUT).
 - D. Gravity drain of the Boric Acid Storage Tanks (BASTs) to the Makeup Pump suction and injecting boric acid with the Makeup Pumps (MUPs).

Ans: A

K/A #: 004010A207

Rating: 3.9

Task #: 0040101015
(0000501025)

History: NEW

SRO/RO: both

Lesson Plan Objective: ROT-4-52 B22

Lesson Plan Reference: ROT-4-52 page 43

Procedure Reference: EOP-02 page 7

78. Which ONE of the following SPDS combinations of for Thot, Tcold, OTSG level and pressurizer level would represent 100% RTP?

- A. 618°F, 555°F, 250 inches, 220 inches
- B. 604°F, 555°F, 250 inches, 320 inches
- C. 618°F, 555°F, 88%, 320 inches
- D. 604°F, 555°F, 88%, 220 inches

Ans: D

K/A #: 194001A115

Rating: 3.4

Task #: 1020101001

History: NEW

SRO/RO: SRO

Lesson Plan Objective: ROT-4-51 B10

Lesson Plan Reference: ROT-4-51 page 7

79. The following plant conditions exist:

- o A Loss of Coolant Accident (LOCA) is in progress
- o The leak is in the Reactor Building (RB)
- o Reactor Coolant Pressure is 1825 psig
- o RB pressure is 4.3 psig
- o Nuclear Services Closed Cycle Cooling Surge Tank (SWT-1) is in low level alarm

If all plant systems work correctly in automatic, which ONE of the following has occurred?

- A. RB Isolation and Cooling (RBIC) has occurred; all penetrations with the exception of RCP seal cooling, not required for Engineered Safeguards (ES) to the reactor building have been isolated.
- B. RB Isolation and Cooling (RBIC) has occurred; all penetrations not required for operation of Engineered Safeguards (ES) to the reactor building have been isolated.
- C. High Pressure Injection (HPI) has occurred; all penetrations not required for HPI to the reactor building have been isolated by Diverse Containment Isolation.
- D. High Pressure Injection (HPI) has occurred; all penetrations not required for operation of Engineered Safeguards (ES) to the reactor building have been isolated by Diverse Containment Isolation.

Ans: B

K/A #: 022000K403

Rating: 4.0

Task #: 1030401003
0000501029

History: NEW

SRO/RO: both

Lesson Plan Objective: ROT-4-63 B6

Lesson Plan Reference: ROT-4-63 page 14
ROT 4-13 page 11

80. The plant is at 28% FP with the "A" Condensate Pump (CDP-1A) in operation; CDP-1B is red tagged to the Master Mechanic on Duty when the following occurs:

- o Annunciator N-02-01, CDSTE PUMP A TRIP, is in alarm
- o Deaerator level is 13' 7.5"
- o "DEAER LEVEL NORM" light is off on the pump control switch

Which ONE of the following is appropriate to recover condensate flow?

- A. Wait 15 seconds then restart CDP-1A; place the Bailey Control station in auto which will return condensate flow to normal.
- B. Wait 15 seconds then restart CDP-1A; take manual control of CDP-1A Bailey Controller and return condensate flow to normal using the Hand/Auto station.
- C. Take manual control of CDP-1A Bailey Controller and adjust the bias setting; restart CDP-1A; then return condensate flow to normal using the Hand/Auto station.
- D. Take manual control of CDP-1A Bailey Controller and drive demand to "0"; restart CDP-1A; then return condensate flow to normal using the Hand/Auto station.

Ans: D

K/A #: 056000A203

Rating: 2.8

Task #: 0560401003

History: NEW

SRO/RO: both

Lesson Plan Objective: ROT-4-69 B6

Lesson Plan Reference: ROT-4-69 pages 14 and 27

Procedure Reference: AR-602 page 18

81. The plant is at 100% FP. Which ONE of the following statements describes the required actions if Reactor Coolant System (RCS) activity is analyzed to be 65 $\mu\text{ci/gm}$ DE (Dose Equivalent) I-131?
- A. Operation may continue for up to 48 hours provided that operation under these circumstances shall not exceed 10% of the unit's total yearly operating time.
 - B. Operation may continue if reactor power is reduced to less than or equal to 78% FP within 48 hours.
 - C. Actions must be taken to reduce activity to less than 50 $\mu\text{ci/gm}$ DE I-131 within 48 hours or the unit must be placed in at least Hot Standby with Tave less than 500°F within the next 6 hours.
 - D. The unit must be placed in at least Hot Standby with Tave less than 500°F within 6 hours.

Ans: D

K/A #: 000076G003

Rating: 3.7

Task #: 3410103036

History: BANK

SRO/RO: SRO

Lesson Plan Objective: ROT-5-01 A1

Procedure Reference: TS 3.4.15

82. The plant is in MODE 5. A HIGH RADIATION alarm has been received by RM-A1, the containment purge gas monitor. Which ONE of the following automatic actions occurred?

- A. The Containment purge valves close.
- B. The Containment purge valves close and fans trip.
- C. The Containment purge fans trip.
- D. The Containment purge exhaust filters are placed in service.

Ans: A

K/A #: 029000K102

Rating: 3.6

Task #: 01030106004

History: MODIFIED BANK

SRO/RO: both

Lesson Plan Objective: ROT-4-63 F2

Lesson Plan Reference: ROT-4-63 page 30

Procedure Reference: AP-250 page 2

83. During refueling operations a leak occurs in the suction piping of the operating Spent Fuel (SF) pump. A note in AP-1080, Refuel Canal Water Level Decrease, states that leakage from SF suction and discharge piping will stop when level decreases to approximately four feet below normal level. Which ONE of the following is the reason for this note?

- A. Once the lower level is reached the SFP is not capable of overcoming the discharge outlet pressure.
- B. Once the lower level is reached there will be inadequate NPSH for the SFPs.
- C. Four feet is the approximate level decrease that will occur while the pump's leaking suction is being isolated and the other SFP is started.
- D. The SFPs will shutdown automatically when level reaches four feet below normal level.

Ans: B

K/A #: 033000A203

Rating: 3.5

Task #: 0340401001

History: NEW

SRO/RO: both

Lesson Plan Objective: ROT-4-29 B6

Lesson Plan Reference: ROT-4-29 page 14

Procedure Reference: AP-1080 page 11

84. Current plant conditions are as follows:

- o RCS pressure is 1000 psig and slowly decreasing
- o RCS temperature (incores) is 900°F and slowly increasing
- o Containment temperature is 210°F and steady
- o RB pressure is 32 psig and slowly increasing
- o RM-G29 is 18,000 R/hr
- o RM-G30 is 21,000 R/hr
- o MUP-1A and MUP-1B are running
- o No DHP is running
- o EFP-1 and EFP-2 are running
- o Both BSPs are off
- o A release is underway
- o No offsite dose estimates are available

Determine the correct Protective Action Recommendations for the conditions listed above.

- A. No Protective Action Recommendations as these conditions are only a Site Area Emergency.
- B. 0-2 miles, Evacuate 360°; 2-5 miles, Evacuate downwind sectors and shelter remaining sectors; 5-10 miles, Shelter downwind sectors
- C. 0-2 miles, Evacuate 360°; 2-5 miles, Evacuate 360°; 5-10 miles, Shelter 360°
- D. 0-2 miles, Evacuate 360°; 2-5 miles, Evacuate 360°; 5-10 miles, Evacuate downwind sectors and shelter remaining sectors

Ans: C

K/A #: 000060EK301

Rating: 4.2

Task #: 3440403004

History: BANK

SRO/RO: SRO

Lesson Plan Objective: ROT-4-34 A1

Procedure Reference: EM-202 page 48

85. The "Non-safety" transfer switch for the Remote Shutdown Panel is located in which ONE of the following locations?

- A. In a relay cabinet in the "A" ES 4160V switchgear room.
- B. In a relay cabinet in the "B" ES 4160V switchgear room.
- C. On the ES portion of the Main Control Board.
- D. On the "AB" section of the Remote Shutdown Panel.

Ans: D

K/A #: 000068G006

Rating: 4.3

Task #: 1010501001

History: BANK

SRO/RO: both

Lesson Plan Objective: ROT-4-16 B2

Lesson Plan Reference: ROT-4-16 page 1

Procedure Reference: AP-990 page 17

36. During the performance of SP-341, Monthly Containment Isolation Valve Operability Check, one of the manual Leak Rate (LR) containment isolation valves is found open and damaged so that it cannot be closed. Which ONE of the following is the status of containment integrity?
- A. Containment integrity is lost; manual actuation of Reactor Building Isolation and Cooling (RBIC) will restore containment integrity.
 - B. Containment integrity is lost; manual isolation of the penetration by the use of another valve if available will restore containment integrity.
 - C. Containment integrity has NOT been lost; only Engineered Safeguard system penetrations are included as part of containment integrity.
 - D. Containment integrity has NOT been lost; as long as the leak rate piping remains intact containment integrity is maintained.

Ans: B

K/A #: 000069EA202

Rating: 4.4

Task #: 1030401003

History: MODIFIED BANK

SRO/RO: both

Lesson Plan Objective: ROT-4-63 B3 and B6

Lesson Plan Reference: ROT-4-63 page 21

Procedure Reference: SP-341 page 1

87. Step 3.17 in AP-470, Loss of Instrument Air, states: Ensure both Spent Fuel Pit Supply air handling units (AHF-23A and AHF-23B) are stopped. Which ONE of the following is the reason for this action?

- A. These fans are NOT required in any emergency situation and should be secured to preserve air pressure. They can be returned to service when air pressure is restored.
- B. These fans are NOT required in any emergency situation. The AB exhaust fan dampers have tripped their respective fans. To preserve a negative pressure in the AB, the fans must be secured.
- C. The dampers associated with these fans will fail closed on the loss of air pressure. To prevent fan damage, the fans should be secured until air pressure is restored.
- D. The dampers associated with these fans will fail closed on the loss of air pressure. To prevent duct work damage, the fans should be secured until air pressure is restored.

Ans: C

K/A #: 000065EK308

Rating: 3.9

Task #: 3440403001

History: NEW

SRO/RO: SRO

Lesson Plan Objective: ROT-5-84 A2

Lesson Plan Reference: ROT-5-84 pages 18 and 20

Procedure Reference: AP-470 page 12

88. Which ONE of the following sets of nuclear instrumentation readings indicates that the compensating voltage for the intermediate range channel NI-3 detector has been set to a value higher than required?

- | | | |
|----|--------------------|---|
| A. | NI-1 and 2 NI-3 | 8.0×10^5 cps 2.0×10^{-11} amps |
| B. | NI-3 NI-4 | 3.0×10^6 amps 8.0×10^{-7} amps |
| C. | NI-1 and 2 NI-3 | 3.0×10^4 cps 8.0×10^{-11} amps |
| D. | NI-3 NI-4 | 5.0×10^{-11} amps not yet on scale |

Ans: A

K/A #: 000033EA201

Rating: 3.5

Task #: 0150101005

History: BANK; ROTs J - T8

SRO/RO: both

Lesson Plan Objective: ROT-4-10 B4

Lesson Plan Reference: ROT-4-10 page 5

89. Given the following plant conditions:

RM-A2, Auxiliary Building Ventilation Exhaust Duct Radiation Monitor is in alarm
RM-A12, Condenser Vacuum Pump Exhaust Gas Radiation Monitor, is in alarm
Reactor coolant system pressure is 2155 psig
Reactor coolant system temperature is 579°F
Makeup to the pressurizer has increased from 60 to 65 gpm
Pressurizer level is slowly decreasing

Which ONE of the following entry conditions has been met?

- A. A Small Break Loss of Coolant Accident (SBLOCA) is in progress, enter EOP-02, Vital System Status Verification.
- B. A Small Break Loss of Coolant Accident (SBLOCA) is in progress, enter EOP-03, Inadequate Subcooling Margin.
- C. A Tube Leak is in progress, enter EOP-02, Vital System Status Verification.
- D. A Tube Leak is in progress, enter EOP-06, Steam Generator Tube Rupture.

Ans: D

K/A #: 000037G011

Rating: 4.1

Task #: 0000501022

History: NEW

SRO/RO: both

Lesson Plan Objective: ROT-5-101 B1

Lesson Plan Reference: ROT-5-101 page 1

Procedure Reference: EOP-06 page 1

90. IN reference to the following excerpt from step 3.2 of EOP-04, Inadequate Heat Transfer:

IF at any time RC PRESS \geq 2400 psig, THEN use the PORV to reduce RC PRESS based on subcooling margin.

- o IF ASCM does NOT exist, THEN open PORV to reduce RC PRESS to \approx 1600 psig
- o IF ASCM exists, THEN open PORV to reduce RC PRESS until either:
 - o RC PRESS $>$ ASCM curve
 - OR
 - o RC PRESS \approx 1600 psig

Which ONE of the following describes the reason for MANUALLY operating the PORV instead of relying on automatic operation?

- A. Manual operation allows the pressure of the RCS to be reduced faster.
- B. Automatic operation would result in more cycles on the PORV which increases the chances of PORV failure.
- C. Automatic operation would result in over pressurization of the Reactor Coolant Drain Tank (RCDT).
- D. Manual operation precludes challenging the safety function of the PORV.

Ans: B

K/A #: 000054EK305

Rating: 4.7

Task #: 0000501027

History: BANK

SRO/RO: both

Lesson Plan Objective: ROT-5-102 B3

Lesson Plan Reference: ROT-5-102 pages 3 and 4

Procedure Reference: EOP-04 page 3

91. During a power increase with all Integrated Control System (ICS) stations in automatic (except the ULD), the "A" main block valve is placed in manual with feedwater demand approximately 40% in both feedwater loops. Both feedwater pumps are running and FWV-28 (crosstie) is closed. Power is then increased until feedwater demand is approximately 60% in both feedwater loops. Which ONE of the following describes feedwater pump control?

- A. Both feedwater pumps will be on delta pressure error control.
- B. "A" feedwater pump will be on delta pressure error control but "B" feedwater pump will be on flow error control.
- C. "A" feedwater pump will be on flow error control but "B" feedwater pump will be on delta pressure error control.
- D. Both feedwater pumps will be on flow error control.

Ans: B

K/A #: 059000K107

Rating: 3.2

Task #: 0410101001

History: BANK

SRO/RO: both

Lesson Plan Objective: ROT-4-14 B1

Lesson Plan Reference: ROT-4-14 pages 34, 35 and 36

92. During a secondary plant release from the Station Drains Tank (SDT-1) an annunciator (H-3-1) comes into alarm indicating that the Liquid Radiation Monitor for Secondary Releases (RM-L7) is in high alarm. Which ONE of the following are the correct actions that should be taken?

- A. Have the building operators ensure that Release Isolation Valve automatically closed; recirculation valve automatically closed; and the Neutralizer Tank Recirculation Pump has tripped.
- B. Have the building operators ensure that Release Isolation Valve automatically closed; recirculation valve automatically closed; and the Neutralizer Tank Recirculation Pump has continued to run.
- C. Have the building operators ensure that Release Isolation Valve automatically closed; recirculation valve automatically opened; and the Neutralizer Tank Recirculation Pump has tripped.
- D. Have the building operators ensure that Release Isolation Valve automatically closed; recirculation valve automatically opened; and the Neutralizer Tank Recirculation Pump has continued to run.

Ans: D

K/A #: 068000A204

Rating: 3.3

Task #: 1210104007

History: NEW

SRO/RO: both

Lesson Plan Objective: ROT-4-83 G14

Lesson Plan Reference: ROT-4-83 page 40
ROT-4-25 page 28

Procedure Reference: AR-403 page 98

93. The Auxiliary Building Exhaust Duct Radiation Monitor (RM-A3) and the Auxiliary Building Ventilation Exhaust Duct Radiation Monitor (RM-A2) have reached their high radiation alarm. Which ONE of the following are the interlock actions that the control board operators can directly verify IN THE CONTROL ROOM for RM-A2 and RM-A3?

A. The following fans trip if operating: AHF-10, Fuel Handling Area Supply Fan; AHF-11A and AHF-11B, Auxiliary Building Supply Fans; AHF-9A and AHF-9B, Penetration Cooling Fans; AHF-34A, Hot Machine Shop Weld Hood Exhaust Fan; AHF-30, Chemistry Lab Supply Fan.

B. The following fans trip if operating: AHF-10, Fuel Handling Area Supply Fan; AHF-11A and AHF-11B, Auxiliary Building Supply Fans; AHF-9A and AHF-9B, Penetration Cooling Fans; AHF-34A, Hot Machine Shop Weld Hood Exhaust Fan; AHF-30, Chemistry Lab Supply Fan.

The following valves close if open: WDV-439, Waste Gas Decay Tank Common Outlet Isolation Valve.

C. The following fans trip if operating: AHF-10, Fuel Handling Area Supply Fan; AHF-11A and AHF-11B, Auxiliary Building Supply Fans; AHF-9A and AHF-9B, Penetration Cooling Fans; AHF-34A, Hot Machine Shop Weld Hood Exhaust Fan; AHF-30, Chemistry Lab Supply Fan.

The following valves close if open: WDV-436, WDV-437, and WDV-438, Waste Gas Decay Tank Outlet Isolation Valves.

D. The following fans trip if operating: AHF-10, Fuel Handling Area Supply Fan; AHF-11A and AHF-11B, Auxiliary Building Supply Fans; AHF-9A and AHF-9B, Penetration Cooling Fans; AHF-34A, Hot Machine Shop Weld Hood Exhaust Fan; AHF-30, Chemistry Lab Supply Fan.

The following dampers close if open: AHD-29 and AHD-36, Waste Gas Decay Tank Area Supply and Exhaust Dampers.

Ans: A

K/A #: 071000K305

Rating: 3.3

Task #: 0720401001

History: NEW

SRO/RO: both

Lesson Plan Objective: ROT-4-25 B6

Lesson Plan Reference: ROT-4-25 page 26

Procedure Reference: AP-250 pages 1 and 2

94. The radiation monitor at the Reactor Coolant Bleed Tank Area, RM-G8, has gone into warning in the Control Room. Besides the low level warning amber alarm light being ON what other indication at the local alarm/readout unit will the Auxiliary Building Operator have that RM-G8 is in warning?

- A. An elevated meter reading; a red alarm light will be on; an audible alarm will be sounding.
- B. An elevated meter reading; an audible alarm will be sounding.
- C. An elevated meter reading; a red alarm light will be on.
- D. An elevated meter reading.

Ans: D

K/A #: 000061EA201

Rating: 3.7

Task #: 0720106001

History: MODIFIED BANK

SRO/RO: both

Lesson Plan Objective: ROT-4-25 F2

Lesson Plan Reference: ROT-4-25 pages 5 and 33

95. The plant has been in a Station Blackout for approximately one hour. Annunciator P-5-1, Inverter A Failure, has come into alarm. Per the Annunciator Response the indicated condition is a "loss of inverter AC input < 365 VAC and a loss of DC input < 105 VDC". Which ONE of the following is the reason for this alarm?

- A. The inverter has lost its AC power supply due to failure of the static transfer and its DC power supply due to battery depletion.
- B. The inverter has lost its AC power supply due to the Station Blackout and its DC power supply when the static transfer switch failed.
- C. The inverter has lost its AC power supply due to the Station Blackout and its DC power supply due to battery depletion.
- D. The inverter has lost its AC power supply and DC power supply due to the Station Blackout.

Ans: C

K/A #: 000058G005

Rating: 3.4

Task #: NTS
0630406003
(0630406001)

History: NEW

SRO/RO: both

Lesson Plan Objective: ROT-4-64 B2 and F6

Lesson Plan Reference: ROT-4-64 page 8
ROT-4-91 page 2

Procedure Reference: AR-701 page 59

96. Which ONE of the following sets of plant conditions would require entry into EOP-07, Inadequate Core Cooling?

- A. Core Exit Thermocouples average = 645°F
Reactor coolant system pressure = 1965 psig
- B. Core Exit Thermocouples average = 615°F
Reactor coolant system pressure = 1875 psig
- C. Core Exit Thermocouples average = 635°F
Reactor coolant system pressure = 1705 psig
- D. Core Exit Thermocouples average = 605°F
Reactor coolant system pressure = 1615 psig

Ans: C

K/A #: 000074EA201

Rating: 4.9

Task #: 0000501021

History: BANK

SRO/RO: both

Lesson Plan Objective: ROT-5-97 B1

Lesson Plan Reference: ROT-5-97 page 1

Procedure Reference: EOP-07 page 1

97. The following conditions exist:

- o Tcold and OTSG Tsat are diverging
- o Incores are increasing
- o Pressurizer level is increasing

Which ONE of the following is the probable cause for these conditions?

- A. Loss of all feedwater; HPI/PORV cooling not established.
- B. Pressurizer steam space leak; HPI has not been initiated.
- C. Inadvertent ES actuation; full HPI actuation.
- D. Inadvertent deboration at power; ICS in full automatic.

Ans: A

K/A #: 035000K301

Rating: 4.6

Task #: 0000501027

History: NEW

SRO/RO: both

Lesson Plan Objective: ROT-3-23 B1

Lesson Plan Reference: ROT-3-23 page 3

98. During a unit startup, the following conditions exist:

- o Turbine header pressure set point is 885 psig.
- o Turbine header pressure is 880 psig and increasing.
- o Turbine is in operator auto with the generator output breakers closed and a megawatt output of 150 megawatts (17% ULD output).
- o Reactor power is 17%
- o All bypass valves are closed

If the turbine header pressure continues to increase, the bypass valves should begin to open when header pressure exceeds:

- A. 885 psig
- B. 935 psig
- C. 1010 psig
- D. 1025 psig

Ans: B

K/A #: 039000K408

Rating: 3.4

Task #: 0390104002

History: BANK

SRO/RO: both

Lesson Plan Objective: ROT-4-66 G5

Lesson Plan Reference: ROT-4-66 page 6

99. To energize the "A" 480V ES bus from the "B" 480V ES bus, breakers 3391 and 3390 must be closed. Which ONE of the following is the interlock and the reason for the interlock associated with these breakers?

- A. Breaker 3311, "A" 480V ES feeder breaker has to be open; to prevent paralleling the EDG's through a crosstie.
- B. Breaker 3209, "A" diesel breaker has to be open; to prevent paralleling the EDG's through a crosstie.
- C. Breaker 3310, "B" 480V ES feeder breaker has to be open; to prevent paralleling the EDG's through a crosstie.
- D. Breaker 3220, "B" diesel breaker has to be open; to prevent paralleling the EDG's through a crosstie.

Ans: A

K/A #: 062000A206

Rating: 3.4

Task #: 0620101004

History: BANK

SRO/RO: both

Lesson Plan Objective: ROT-4-90 B1

Lesson Plan Reference: ROT-4-90 pages 8, 12 and 23

100. The "B" Emergency Diesel Generator (EDG-1B) is running supplying its associated 4160 ES bus in parallel with the grid for surveillance testing. The control room operator takes the "EXC VOLT ADJ DIESEL GENERATOR B" rheostat to the raise position. Which ONE of the following would be the expected response of the diesel generator indications?

- A. EDG-1B output Kilowatts (KW) increase.
- B. EDG-1B output frequency (HTZ) increase.
- C. EDG-1B output reactive load (MVAR) increase.
- D. EDG-1B output speed (RPM) increase.

Ans: C

K/A #: 064000A401

Rating: 4.0

Task #: 0640101004

History: BANK

SRO/RO: both

Lesson Plan Objective: ROT-4-06 B2

Lesson Plan Reference: ROT-4-06 pages 15 and 16

Procedure Reference: SP-354B page 25

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

WRITE I.D. NUMBER HERE

MARK I.D. NUMBER HERE

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

EXAMPLE:

WRITE I.D. NUMBER HERE

MARK I.D. NUMBER HERE

PART 1
 CODE I.D. NUMBER AT LEFT BY FILLING IN THE APPROPRIATE BOXES ACCORDING TO THE EXAMPLE.

IMPORTANT

USE NO. 2 PENCIL ONLY

- MAKE **DARK** MARKS
- EXAMPLE: A B C D E
- ERASE **COMPLETELY** TO CHANGE

NAME SRO Key

SUBJECT SRO

HOUR _____ DATE 3-22-96

KEY MARKING INSTRUCTIONS

This form is used for:
 a) Program Key
 b) Test Answer Sheet

When used as Program Key, you can control the results depending on which Key Boxes are marked.



Marking a Key Box or Combination of Key Boxes produces the following scoring and error marking results:

| | |
|------------------|--|
| NKS | No score printed on Key |
| C1 KEY | Prints score and error marks for column 1 |
| C1 KEY NE | Prints score for column 1 with no error marks |
| C2 KEY | Prints score and error marks for column 2 |
| C2 KEY NE | Prints score for column 2 with no error marks |
| C1 C2 KEY KEY | Prints total score and error marks for columns 1 and 2 |
| C1 C2 KEY KEY NE | Prints total score for columns 1 and 2 with no error marks |
| C1 C2 KEY KEY SP | Prints separate scores for columns 1 and 2 with no error marks |

After marking the appropriate Key Boxes, mark correct answers on your program key.

| NKS | C1 KEY | SP | NE | C2 KEY |
|-----|-----------|-----|-----------|--------|
| 1 | A B C D E | 51 | A B C D E | |
| 2 | A B C D E | 52 | A B C D E | |
| 3 | A B C D E | 53 | A B C D E | |
| 4 | A B C D E | 54 | A B C D E | |
| 5 | A B C D E | 55 | A B C D E | |
| 6 | A B C D E | 56 | A B C D E | |
| 7 | A B C D E | 57 | A B C D E | |
| 8 | A B C D E | 58 | A B C D E | |
| 9 | A B C D E | 59 | A B C D E | |
| 10 | A B C D E | 60 | A B C D E | |
| 11 | A B C D E | 61 | A B C D E | |
| 12 | A B C D E | 62 | A B C D E | |
| 13 | A B C D E | 63 | A B C D E | |
| 14 | A B C D E | 64 | A B C D E | |
| 15 | A B C D E | 65 | A B C D E | |
| 16 | A B C D E | 66 | A B C D E | |
| 17 | A B C D E | 67 | A B C D E | |
| 18 | A B C D E | 68 | A B C D E | |
| 19 | A B C D E | 69 | A B C D E | |
| 20 | A B C D E | 70 | A B C D E | |
| 21 | A B C D E | 71 | A B C D E | |
| 22 | A B C D E | 72 | A B C D E | |
| 23 | A B C D E | 73 | A B C D E | |
| 24 | A B C D E | 74 | A B C D E | |
| 25 | A B C D E | 75 | A B C D E | |
| 26 | A B C D E | 76 | A B C D E | |
| 27 | A B C D E | 77 | A B C D E | |
| 28 | A B C D E | 78 | A B C D E | |
| 29 | A B C D E | 79 | A B C D E | |
| 30 | A B C D E | 80 | A B C D E | |
| 31 | A B C D E | 81 | A B C D E | |
| 32 | A B C D E | 82 | A B C D E | |
| 33 | A B C D E | 83 | A B C D E | |
| 34 | A B C D E | 84 | A B C D E | |
| 35 | A B C D E | 85 | A B C D E | |
| 36 | A B C D E | 86 | A B C D E | |
| 37 | A B C D E | 87 | A B C D E | |
| 38 | A B C D E | 88 | A B C D E | |
| 39 | A B C D E | 89 | A B C D E | |
| 40 | A B C D E | 90 | A B C D E | |
| 41 | A B C D E | 91 | A B C D E | |
| 42 | A B C D E | 92 | A B C D E | |
| 43 | A B C D E | 93 | A B C D E | |
| 44 | A B C D E | 94 | A B C D E | |
| 45 | A B C D E | 95 | A B C D E | |
| 46 | A B C D E | 96 | A B C D E | |
| 47 | A B C D E | 97 | A B C D E | |
| 48 | A B C D E | 98 | A B C D E | |
| 49 | A B C D E | 99 | A B C D E | |
| 50 | A B C D E | 100 | A B C D E | |

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Handwritten notes:
 13: SRO Key
 19: Deleted
 20: SRO

