APPENDIX A

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Inspection Report: 50-445/93-43
50-446/93-43

Licenses: NPF-87
NPF-89

Licensee: TU Electric
Skyway Tower
400 North Olive Street, L.B. 81
Dallas, Texas

Facility Name: Comanche Peak Steam Electric Station, Units 1 and 2

Inspection At: Comanche Peak Steam Electric Station, Units 1 and 2

Inspection Conducted: November 15-19, 1993

Inspectors: Joseph I. Tapia, Chief Examiner, Operations Section
Division of Reactor Safety

Steven L. McCrory, Examiner, Operations Section
Division of Reactor Safety

Ryan E. Lantz, Examiner, Operations Section
Division of Reactor Safety

Accompanying Personnel: Larry Sherfey, Examiner, Contractor
Battelle Pacific NW Labs

Ray Pugh, Examiner, Contractor
Battelle Pacific NW Labs

Approved: John Pellet 12/15/93
John D. Pellet, Chief, Operations Section Date
Division of Reactor Safety

Inspection Summary

Areas Inspected (Units 1 and 2): Routine, announced inspection of the qualifications of applicants for operator licenses at the Comanche Peak Steam Electric Station facility, which included an eligibility determination and administration of comprehensive written and operating examinations. The examination team also observed the performance of on-shift operators and plant conditions incident to the conduct of the applicant evaluations. The examiners used the guidance provided in NUREG-1021, "Operator Licensing

Examiner Standards," Revision 7, Sections 201, 202, 203, 301, 302, 303, 401, 402, and 403, issued January 1993.

Results (Units 1 and 2):

- All seven applicants for reactor operator licenses satisfied the requirements of 10 CFR 55.33(a)(2) (Section 1.6).
- All four applicants for senior reactor operator licenses satisfied the requirements of 10 CFR 55.33(a)(2) (Section 1.6).
- The reference material provided by the training department for examination development was adequate (Section 1.1).
- All applicants passed the written examinations, with scores ranging from a low of 82 percent to a high of 94 percent with averages of 88 percent for reactor operator applicants, 87.25 percent for senior reactor operator applicants, and 87.73 percent overall (Section 1.2).
- The crews examined exhibited generally effective, formal communications, with effective command and control on the part of crew supervision, with noted exceptions (Section 1.3).

Summary of Inspection Findings:

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

Attachments:

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

DETAILS

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

During the inspection, the examiners evaluated the qualifications of 11 license applicants; 7 for reactor operator (RO), and 4 for senior reactor operator (SRO). The inspection assessed the eligibility and administrative and technical competency of the applicants to be issued licenses to operate and direct the operation of the reactivity controls of a commercial nuclear power facility in accordance with 10 CFR 55 and NUREG-1021, "Operator License Examiner Standards," Revision 7, Sections 200 (series), 300 (series), and 400 (series). Further, the inspection included evaluations of facility materials, procedures, and simulation capability used to support development and administration of the examinations. These areas were evaluated using the guidance provided in the areas of NUREG-1021 cited above. Additionally, the examination team also observed the performance of on-shift operators and plant conditions incident to the conduct of the applicant evaluations.

After completion of the evaluations, the examiners determined that all 7 of the applicants for RO licenses and all 4 of the applicants for SRO licenses satisfied the requirements of 10 CFR 55.33(a)(2) and will be issued the appropriate licenses.

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

1.1 Facility Materials Submitted for Examination Development

The chief examiner reviewed the licensee's materials provided for development of the examination, which included station administrative and operating procedures, lesson plans, question banks, simulator scenarios, and job performance measures (JPM). The procedures and lesson plans were adequate. The facility bank of written questions, dynamic simulator scenarios, and JPMs was adequate in scope, depth, and variety. However, some JPMs were not current with the latest procedure revision in the initial submittal.

1.2 Written Examinations

The chief examiner developed comprehensive written RO and SRO examinations in accordance with the guidelines of NUREG-1021, Revision 7, Section 401. The RO and SRO examinations each consisted of 100 multiple choice questions. During the week of November 8, 1993, members of the facility operations and training departments, under the provisions of NUREG-1021, which require execution of a non-disclosure security agreement, reviewed the examinations. The NRC considers the pre-administration review of the examination by the facility as part of the examination development process. Therefore, the specific comments resulting from that review are not reported or otherwise retained. The chief

examiner incorporated the facility review comments and administered the examinations to the licensee applicants on November 15, 1993.

The chief examiner provided the facility training staff with a copy of the "as administered" written examination and answer key along with the preadministration review comments on November 15, 1993, immediately following the completion of the examination by the applicants. The facility took that opportunity to further review and comment on the written examination and provided written comments on November 24, 1993. The facility's post-examination review comments are contained in Attachment 4.

After careful evaluation of the facility post-examination review comments, the chief examiner accepted all the facility recommendations for the reasons given. Four questions on the RO examination and two questions on the SRO examination had an additional correct answer as recommended by the facility. The chief examiner made the appropriate revisions to the examination keys.

Overall, applicants performed well on the written examinations. Scores ranged from a low of 82 percent to a high of 94 percent with averages of 88 percent for reactor operator applicants, 87.25 for senior reactor operator applicants, and 87.73 percent overall. All applicants passed the written examination.

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

Common questions (SRO/RO): 41/42, 53/54, 58/59, 86/87, 91/92, 93/94
Questions on the RO examination: 39
Questions on the SRO examination: 1, 16, 37, 39, 68, 69, 84, 85, 88, 93

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

1.3 Operating Examinations

The examiners developed comprehensive operating examinations in accordance with the guidelines of NUREG-1021, Revision 7, Section 301. The operating examinations consisted of two parts, a dynamic simulator scenario portion and a control room/plant walkthrough portion. The examiners previewed and validated the various portions of the operating examinations onsite on November 8 through 9, 1993, with the assistance of facility training personnel under security agreement. The examination team administered the operating examinations during the week of November 15, 1993.

1.3.1 Dynamic Simulator Scenarios

The examination team evaluated four crews (two consisting of two SRO instant applicants and one RO applicant rotating through three positions, one of two RO applicants and an SRO surrogate, and one of three RO applicants and an SRO surrogate) on two to three scenarios (depending on crew composition) using the Comanche Peak plant-specific simulation facility. The examiners compared applicants' actual performance during the scenarios with expected performance in accordance with the requirements of NUREG-1021, Revision 7, Section 303, to evaluate applicants' competency on this portion of the operating examinations.

The examination team noted that communications among crew members were generally effective and formal, but with minor instances of open-ended, incomplete, and informal communication practices noted. Additionally, the examination team concluded that the crews displayed effective command and control attributes. Crew briefings by the SRO were generally good, however, not always conducted in some crews.

During a scenario involving an anticipated transient without scram (ATWAS), a course of action which would have potentially mitigated the casualty in progress was discussed by the crew; however, because of a procedural weakness, the SRO did not direct that the action be taken in a timely fashion. This procedural weakness was noted in Procedure FRS-0.1A, Rev. 6, "Response to Nuclear Power Generation/ATWT." Step 1 of this procedure requires verification of a Reactor Trip; however, in the "response not obtained" section of Step 1, the procedure does not direct the reader to dispatch personnel to locally trip the reactor by opening the reactor trip and bypass breakers or the rod drive motor-generator set breakers. This action is not required until Step 5 in the procedure. This procedure weakness led to inconsistent response by different crews. The weakness did not change the outcome of the scenario; however, it may have permitted avoidable plant degradation for different plant conditions. For this reason, the inspectors considered this procedural weakness an area for further review for potential enhancement to the procedure.

No generic weaknesses were noted during the conduct of the dynamic simulator examinations. After a pre-exit meeting with the training department, the licensee informed the inspectors that the delay in directing personnel to locally trip the reactor had been noted and was to be reviewed in the context of adequacy of procedural step sequence.

All of the applicants passed this portion of the operating examination.

1.3.2 Walkthrough Examinations

The examination team evaluated each of the RO and instant SRO applicants using ten JPMs relating to tasks within the scope of potential duties of a licensed RO or SRO (which included non-licensed operator tasks outside the control room). The applicants performed some of the tasks in the simulation facility in the dynamic mode. They simulated (through discussions) the remainder of

the tasks in the plant integrated control room and at local operating stations throughout the plant. Immediately following the performance of each task, the examiners asked pre-scripted questions relating to the system involved in the task. The questions solicited "short-answer" responses and permitted the applicants to use operationally controlled references to aid in their responses, unless specifically annotated to require response from memory. The examiners combined the applicants' task performance and question responses in accordance with the guidelines of NUREG-1021, Revision 7, Section 303, to evaluate performance on this portion of the operating examination.

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

1.4 Observations

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

- Material condition of the plant was affected by the Unit 1 outage in a manner that called for additional attention. Piles of tools were noted to be stored under stairwells. A large number of hoses were seen throughout the plant. There was no positive control of the required tools for emergency boration to assure that they would not be removed from the location where they are required.

- Control room communications were mixed with examples of open-ended, incomplete, and informal communications noted.

- A more aggressive Unit identifier scheme would facilitate more rapid verification of plant location.

1.5 Simulator Fidelity

During the preparation and conduct of the operating examinations, the examination team observed no discrepancies in simulator fidelity.

1.6 Conclusions

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

In general, the examination team concluded that:

- Individual applicants and crews performed well. Communications were generally effective; however, senior operator direction and command presence of one crew was affected by strict procedural adherence.

- The facility material adequately supported the examination development and administration.

ATTACHMENT 1

1 PERSONS CONTACTED

1.1 Licensee Personnel

*J. Donahue, Manager of Operations
*S. Falley, Licensed & Nonlicensed Training Supervisor
*D. McIntire, Licensed Operator Instructor
*P. Presby, Licensed Program Coordinator
*E. Schmidt, Operations Training Manager

1.2 NRC Personnel

K. Erickson, Contractor, Pacific Northwest Laboratories
J. Pellet, Chief, Operations Section

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

*Denotes personnel that attended the exit meeting.

2 EXIT MEETING

An exit meeting was conducted on November 19, 1993. During this meeting, the examiners reviewed the scope and generic findings of the inspection. The examiners did not disclose preliminary results of individual evaluations since they are subject to change during the final review and approval process. The licensee did not identify as proprietary any information provided to, or reviewed by, the examiner. The licensee did not state any position on the findings presented during the exit meeting.

ATTACHMENT 2

SIMULATION FACILITY REPORT

Facility Licensee: Comanche Peak, Units 1 and 2

Facility Docket: 50-445, 50-446

Operating Tests Administered at: Comanche Peak

Operating Tests Administered on: November 15 - 19, 1993

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

During the dynamic operation of the simulator in support of the operating tests, no previously unidentified simulator fidelity problems were observed.

ATTACHMENT 4

TU ELECTRIC

Log # TXX-93406
File # 10305

November 24, 1993

William J. Cahill, Jr.
Group Vice President

U. S. Nuclear Regulatory Commission, Region IV
Attn: Mr. John Pellet
611 Ryan Plaza Dr. Suite 400
Arlington, Texas 76011

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION (CPSES)
DOCKET NOS. 50-445 AND 50-446
TRANSMITTAL OF POST EXAMINATION REVIEW COMMENTS

REF: NRC written examination administered to licensed operator candidates at CPSES during the week of November 15, 1993

Dear Mr. Pellet:

TU Electric hereby provides comments with respect to the above referenced examination. The specific comments, supporting information and references are provided in the attachment to this letter.

If there are any questions regarding these comments, please contact Mr. Eric Schmitt at (817) 897-5703.

Sincerely,

William J. Cahill, Jr.

By: J S Marshall
J. S. Marshall
Generic Licensing Manager

TDB:tg
Enclosure

c - ~~Mr. D. L. Milhoan, Region IV~~
Mr. L. A. Yandell, Region IV
Resident Inspectors, CPSES

ENCLOSURE TO TXX-93406

RO QUESTION: 10
SRO QUESTION: None

QUESTION:

Which one of the following would require declaring entry into a one hour action statement for minimum number of "Operable Boron Injection Flow Paths" or "Borated Water Sources" for Unit 2 in Mode 1?

a. Both centrifugal charging pumps declared inoperable
b. Boron concentration in the RWST samples to be 2155 ppm
c. One centrifugal and the positive displacement charging pump are declared inoperable
d. Indicated level in the refueling water storage tank reads 92%

EXPECTED RESPONSE: d

EXAM REFERENCE(S): ABN-107, Rev. 2
TS 3/4.1.2

RECOMMENDED ACTION: Accept a or d as correct

JUSTIFICATION:

Declaring both CCPs inoperable requires entry into TS 3.0.3 because the ACTION of TS 3/4.1.2.4 cannot be satisfied. Entry into TS 3.0.3 requires intiation of action within one hour to place the unit in at least HOT STANDBY within the next 6 hours. TS 3/4.1.2.6, ACTION b, also requires that the tank be restored to OPERABLE within one hour or be in at least HOT STANDBY within the next 6 hours. Both answers 'a' and 'd' require one hour actions.

JUSTIFICATION REFERENCE(S): TS 3.0.3
TS 3/4.1.2.4
TS 3/4.1.2.6

CHARGING PUMPS - OPERATING

LIMITING CONDITION FOR OPERATION

3.1.2.4 At least two centrifugal charging pumps shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3*, and 4* **.

ACTION:

With only one charging pump OPERABLE, restore at least two charging pumps to OPERABLE status within 72 hours or be in at least HOT STANDBY and borated to a SHUTDOWN MARGIN equivalent to at least 1.3% $\Delta k/k$ at 200°F within the next 6 hours; restore at least two charging pumps to OPERABLE status within the next 7 days or be in COLD SHUTDOWN within the next 30 hours. 5

SURVEILLANCE REQUIREMENTS

4.1.2.4.1 The required centrifugal charging pump(s) shall be demonstrated OPERABLE by testing pursuant to Specification 4.0.5.

4.1.2.4.2 The required positive displacement charging pump shall be demonstrated OPERABLE by testing pursuant to Specification 4.1.2.2.c.

4.1.2.4.3 Whenever the temperature of one or more of the Reactor Coolant System (RCS) cold legs is less than or equal to 350°F, a maximum of two charging pumps shall be OPERABLE, except when Specification 3.4.8.3 is not applicable.

When required, one charging pump shall be demonstrated inoperable# at least once per 31 days by verifying that the motor circuit breakers are secured in the open position.

*The provisions of Specifications 3.0.4 and 4.0.4 are not applicable for entry into MODES 3 and 4 for the charging pump declared inoperable pursuant to Specification 3.1.2.4 provided the charging pump is restored to OPERABLE status within 4 hours after entering MODE 3 or prior to the temperature of one or more of the RCS cold legs exceeding 375 °F, whichever comes first.

**In MODE 4 the positive displacement pump may be used in lieu of one of the required centrifugal charging pumps.

#An inoperable pump may be energized for testing provided the discharge of the pump has been isolated from the RCS by a closed isolation valve(s) with power removed from the valve operator(s) or by a manual isolation valve(s) secured in the closed position.

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

3/4.0 APPLICABILITY

LIMITING CONDITION FOR OPERATION

3.0.1 Compliance with the Limiting Conditions for Operation contained in the succeeding specifications is required during the OPERATIONAL MODES or other conditions specified therein; except that upon failure to meet the Limiting Conditions for Operation, the associated ACTION requirements shall be met.

3.0.2 Noncompliance with a specification shall exist when the requirements of the Limiting Condition for Operation and associated ACTION requirements are not met within the specified time intervals. If the Limiting Condition for Operation is restored prior to expiration of the specified time intervals, completion of the ACTION requirements is not required.

3.0.3 When a Limiting Condition for Operation is not met, except as provided in the associated ACTION requirements, within 1 hour action shall be initiated to place the unit in a MODE in which the specification does not apply by placing it, as applicable, in:

a. At least HOT STANDBY within the next 6 hours,
b. At least HOT SHUTDOWN within the following 6 hours, and
c. At least COLD SHUTDOWN within the subsequent 24 hours.

Where corrective measures are completed that permit operation under the ACTION requirements, the action may be taken in accordance with the specified time limits as measured from the time of failure to meet the Limiting Condition for Operation. Exceptions to these requirements are stated in the individual specifications.

This specification is not applicable in MODE 5 or 6.

3.0.4 Entry into an OPERATIONAL MODE or other specified condition shall not be made when the conditions for the Limiting Conditions for Operation are not met and the associated ACTION requires a shutdown if they are not met within a specified time interval. Entry into an OPERATIONAL MODE or specified condition may be made in accordance with ACTION requirements when conformance to them permits continued operation of the facility for an unlimited period of time. This provision shall not prevent passage through or to OPERATIONAL MODES as required to comply with ACTION requirements. Exceptions to these requirements are stated in the individual specifications.

BORATED WATER SOURCES - OPERATING

LIMITING CONDITION FOR OPERATION

3.1.2.6 As a minimum, the following borated water source(s) shall be OPERABLE as required by Specification 3.1.2.2:

a. A boric acid storage tank with:

1) A minimum indicated borated water level of 50%,
2) A minimum boron concentration of 7000 ppm, and
3) A minimum solution temperature of 65°F.

b. The refueling water storage tank (RWST) with:

1) A minimum indicated borated water level of 95%,
2) A boron concentration between 2400 ppm for Unit 1 (2000 ppm for Unit 2) and 2600 ppm for Unit 1 (2200 ppm for Unit 2), 19/5
3) A minimum solution temperature of 40°F, and
4) A maximum solution temperature of 120°F.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

a. With the boric acid storage tank inoperable and being used as one of the above required borated water sources, restore the tank to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and borated to a SHUTDOWN MARGIN equivalent to at least 1.3% Δ k/k at 200°F; restore the boric acid storage tank to OPERABLE status within the next 7 days or be in COLD SHUTDOWN within the next 30 hours. 5

b. With the RWST inoperable, restore the tank to OPERABLE status within 1 hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

RO QUESTION: 12
SRO QUESTION: None

QUESTION:

Given the following:
- A spent fuel assembly is being raised from its slot in the storage pool for return to the reactor.
- Gas bubbles are coming to the surface of the pool.
- Radiation levels in the Spent Fuel Pool area are increasing.

Which one of the following is required of personnel in the Fuel Handling Building?

a. Notify the control room to sound the Radiological Emergency Alarm
b. Immediately evacuate all personnel from the Fuel Handling Building
c. Notify the Fuel Handling Supervisor, then quickly replace the damaged fuel assembly in its storage location
d. Move the fuel assembly into the RCB and notify the control room to initiate containment isolation

EXPECTED RESPONSE: b

EXAM REFERENCE(S): ABN-908, Rev. 2

RECOMMENDED ACTION: Accept b or c as correct

JUSTIFICATION:

ABN-908, step 3.3.b, directs evacuation of the Fuel Building. Step 3.4.d directs the Fuel Handling Supervisor or his designee in the Fuel Building to ensure that all fuel assemblies are stored in a secured position. Since the damaged assembly is being raised from its slot in the storage pool, the Fuel Handling Supervisor, after being notified of the event, would be expected to ensure that the damaged assembly was immediately lowered back into its storage location prior to fuel handling personnel evacuating the building. Other personnel would be immediately evacuated, making answers 'b' and 'c' both correct.

JUSTIFICATION REFERENCE(S): ABN-908, Rev 2, Section 3.0

3.0 Fuel Handling Accident in the Fuel Building Involving Spent Fuel

3.1 Symptoms

a. Annunciator Alarms

None

b. Plant Indications

- Fuel Building Radiation Monitor Alarm on the PC-11 (DRMS) (1)
  - FBV-088 FB VENT EXH (XRE5700)
  - SFP-001 LRAM SFP 2 E. WALL (XRE6272)
  - SFP-002 LRAM SFP 2 N. WALL (XRE6273)
  - SFP-003 LRAM SFP 1 E. WALL (XRE6274)
  - SFP-004 LRAM SFP 1 S. WALL (XRE6275) (1)
- Verbal report of a damaged fuel assembly by fuel handling personnel.

3.2 Automatic Actions

None

3.3 Initial Operator Actions

a. Notify the Shift Supervisor of the incident and location.

b. Evacuate the Fuel Building as follows: (4)

1) Announce the Fuel Building evacuation over the Gai-tronics.

Example Announcement:

THIS IS NOT A DRILL.
ATTENTION ALL PERSONNEL IN THE FUEL BUILDING.
EVACUATE THE FUEL BUILDING.
PROCEED INTO THE AUXILIARY BUILDING CORRIDOR.
THIS IS NOT A DRILL.

(2)

2) Sound the Radiological Emergency Alarm.

3) Repeat the announcement.

2-2-93

c. Ensure one spent fuel pool exhaust fan is running for the affected spent fuel pool.

1) SFP No. 1

- o X-HS-5731, SFP EXH FAN 33
- o X-HS-5733, SFP EXH FAN 34

2) SFP No. 2

- o X-HS-5727, SFP EXH FN 35
- o X-HS-5729, SFP EXH FN 36

3.4 Subsequent Operator Actions

a. Refer to EPP-201.

b. Notify Radiation Protection of the incident AND ensure all personnel who were in Fuel Building are being surveyed for possible contamination.

NOTE: Access to Fuel Building shall require Shift Supervisor authorization. Security should ensure all personnel have exited Fuel Building.

c. Direct Security to establish control points (Roll-up door and security card reader) to control access to Fuel Building.

NOTE: Personnel exiting Fuel Building should proceed NO further into Auxiliary Building than security control points, UNTIL personnel accountability AND radiological monitoring is accomplished by Security and Radiation Protection.

d. The Fuel Handling Supervisor or his designee in Fuel Building should ensure following as conditions allow, while taking appropriate precautions for any high radiation:

- o Inform personnel exiting Fuel Building to assemble at East North-South Corridor.
- o Ensure that all fuel assemblies are stored in secured position.
- o Ensure upender is in horizontal position.
- o Ensure all personnel are exiting the Fuel Building to Auxiliary Building control points.
- o Ensure all AB 810 and 860 doors including roll-up door and track-way roll-up doors - CLOSED
- o Notify Control Room when Fuel Building has been evacuated AND building integrity is established.

RO QUESTION: 32
SRO QUESTION: 31

QUESTION:

Which one of the following is a proper method for verifying the position of a valve that is required to be in a locked throttled position?

a. The valve should be moved slightly in the open direction and then back to its original position.
b. The valve should not be moved; the presence of the locking device assures proper position.
c. The valve should be moved slightly in the closed direction and then back to its original position.
d. The valve should not be moved; the position is verified by observing the valve stem position.

EXPECTED RESPONSE: d

EXAM REFERENCE(S): STA-694, Rev. 1

RECOMMENDED ACTION: Accept b or d as correct

JUSTIFICATION:

Step 1.12 of Attachment 8B states that valve lineups should be verified by ensuring the locking or sealing device is properly installed. Step 1.14 of the same attachment indicates that valve checklists for all locked throttled valves that have not been operated are completed by ensuring that the locking device is properly installed. Per step 3.5 of the same attachment, visual verification using valve stem position should be used to verify position of throttled or locked throttled valves during the initial positioning of the valve. Once the valve is locked in place, verification of the proper installation of the locking device is all that is required. Since the question stem does not indicate whether this is the initial positioning of the valve or a subsequent verification of valve position, both responses 'b' and 'd' are correct.

JUSTIFICATION REFERENCE(S): STA-694, Rev 1, Attachment 8B

ATTACHMENT 8.B
PAGE 3 OF 12

GUIDELINE ON COMPONENT VERIFICATION ACTIVITIES
REQUIRING PHYSICAL SEPARATION

1.7
- Visible degradation of ferritic material components due to Boric Acid corrosion. Do not remove boric acid crystals until evaluated per STA-606.
- Torn or missing tags or labels
- Broken valve handwheels
- Equipment which is tagged out

1.8 Determine the correct component and actual position of a component for a given evolution. Determining the actual position of the component is based on experience, training and, if needed, vendor information for specific devices encountered in the plant. Contact the Shift or Unit Supervisor to resolve any uncertainty.

1.9 Position indicators are subject to equipment failure that could result in a display of the incorrect status of a valve or breaker. When positioning a remote operated valve, it is critical to ensure the feel of the valve operator AND the full open or closed stop are factored into determination of valve position. When remote position indicators are utilized, personnel should check other indicators, if available.

1.10 If remote position indication is being used to verify the positioning of one or more valves, the position should be verified prior to de-energizing the control power due to the loss of indication.

1.11 Care should be exercised when using process parameters as a second check of a component's position due to possible alternate flow paths.

1.12 Valve lineups for all locked or sealed valves should be verified by ensuring the locking or sealing device is properly installed and the valve appears to be in the correct position. The positioning of the valve would have been performed previously at the time the lock or seal was installed.
- Locked or sealed valves may be in the throttled position
- Steps 3.3, 3.4 and 3.5 of this attachment define the method for verifying the position.

ATTACHMENT 8.B
PAGE 4 OF 12

GUIDELINE ON COMPONENT VERIFICATION ACTIVITIES
REQUIRING PHYSICAL SEPARATION

1.13 Some throttled valves and ventilation dampers in plant systems have been positioned during system flow balance testing and control critical system operating parameters. These valves are typically locked throttled. These valves and dampers are not to be manipulated for valve lineups unless it is necessary to restore their position following operation for abnormal conditions, maintenance or other situations where the valve manipulation was deemed necessary by the Shift or Unit Supervisor.

1.14 Normally, valve checklists for all locked throttled valves and dampers that have not been manipulated will be completed by ensuring the locking device is properly installed and by initialling the required space on the system lineup checklist. In order for this practice to prevent mispositioning events, it is mandatory that all personnel strictly adhere to the requirements of the locked valve program per ODA-403.

1.15 The Technical Data Manual for locked throttled components and other throttled valves and dampers will list the number of turns open for each component. This listed position will be used to place the throttled component in an initial position that will then be "fine tuned" when the system is operating.

1.16 The Technical Specifications relating to the required open or closed positions of certain components must be considered on all component manipulations. If the act of verifying the position of a component violates the designated position of the component required by the Technical Specifications for the plant operating conditions, positive control of the operability of the valve must be maintained at all times during the component manipulation. Technical Specification requirements should be reviewed for applicability and a LCOAR processed per ODA-308, if applicable.

2.0 PERFORMANCE OF INDEPENDENT VERIFICATION

2.1 Independent verification shall be performed by an individual other than the performer.

2.2 Independent verification shall be performed completely independent (physically separate) from the initial alignment or verification. An exception to this would be when verifying throttled valve positions (refer to step 3.5 of this attachment) for the first time prior to installing a lock, sealing device, or pin.

2.3 Independent verification of a lineup may be performed by separate qualified personnel by using two working copies. Some lineups have blanks provided for independent verification and therefore do not require two copies.

ATTACHMENT 8.B
PAGE 6 OF 12

GUIDELINE ON COMPONENT VERIFICATION ACTIVITIES
REQUIRING PHYSICAL SEPARATION

3.2 Valve to be checked "CLOSED"

For manual valves, move the valve operator in the closed direction only. If the valve is in the correct closed position, no motion will occur (avoid over torquing). A visual verification should then be made of the valve stem, local position indicator or any other valve component suitable for verification, if possible. The operator should attempt to ensure that the valve is not just binding or difficult to operate.

3.3 Valve to be checked "LOCKED OPEN"

For locked or sealed valves, the lock does not need to be removed. The actual position of the valves and locking devices should be determined by physical contact between the valve and locking device. Try to move the valve in the closed direction to determine that the locking device does keep the valve open. A visual verification should then be made of the valve stem, local position indicator or other valve component suitable for verification, if possible.

3.4 Valves to be checked "LOCKED CLOSED"

The actual position of the valves and locking devices should be determined by physical contact between the valve and the locking device. Check the valve closed by moving the valve in the closed direction only. A visual verification should then be made of the valve stem, local position indicator or any other valve component suitable for verification, if possible.

3.5 Valves to be checked "THROTTLED" or "LOCKED THROTTLED"

These valves should not be moved unless specifically authorized by the Shift or Unit Supervisor. Visual verification using valve stem position, local indicators, system flow indication, scribe marks or any other valve component suitable for verification should be used as necessary to verify position, if possible. Control Room verification by observing Control Room instruments, annunciators, valve position indicators, etc., may be acceptable as long as the Control Room indication is a positive one and is directly observed and documented.

RO QUESTION: 40
SRO QUESTION: 39

QUESTION:

Given the following:
- Unit 2 is reduced inventory operations.
- The reactor vessel head is on.
- Containment pressure is increasing.

Which one of the following describes the response of the RCS level indication?

a. Indicated level is becoming lower than actual level
b. Indicated level is becoming greater than actual level
c. Indicated level will remain the same as actual level
d. Indicated level is oscillating, above and below actual level

EXPECTED RESPONSE: c

EXAM REFERENCE(S): IPO-010, Rev. 5
M2-0250

RECOMMENDED ACTION: Accept a or c as correct

JUSTIFICATION:

The question stem does not provide adequate information to determine proper response. RCS level indication is determined by two different methods during reduced inventory operations. One method used is the tygon hose. At the point where the RCS is drained to <80" (reduced inventory at CPSES), the tygon hose is aligned to containment and the RCS (loop 4 drain). The RCS is also aligned to containment via the Reactor Vessel Head connection to the exhaust duct and via the pressurizer connection to the exhaust duct. This will result in no change in indicated level, as measured by the tygon hose indication, as a result of an increase in containment pressure (both sides of tygon hose equally affected by changes in containment pressure). The other method used is the Reactor Vessel Level indicators (2-LI-3615A/B). The response of these indicators to changes in Containment pressure is dependent

upon other RCS conditions; specifically, whether or not a hot leg vent path exists. The Reactor Vessel Level transmitters have their HP side aligned to the bottom of the reactor vessel, via penetrations in the incore flux tubes, and their LP side is aligned to Containment atmosphere. If a large hot leg vent path exists, no change in Reactor Vessel Level indication is expected as Containment pressure increases. The increasing Containment pressure will be sensed by both sides of the Reactor Vessel Level transmitters simultaneously (LP directly to containment and HP to containment via hot leg vent path). However, a hot leg vent path is only required if an open cold leg penetration exists or a temporary seal is installed while the reactor vessel head is installed. If no hot leg vent path exists, only the LP side of the transmitter would sense the increasing Containment pressure. Therefore, indicated level would be lower than actual level. Numerous cautions in IPO-010B alert the operator to the possibility of a difference in response of the tygon hose and Reactor Vessel Level indications. Additionally, cautions in IPO -010B alert the operator to the probability of erroneous level indications if excessive RCS drain rates are achieved. The excessive RCS drain rates will cause a change in pressure differences sensed by the Reactor Vessel Level transmitters, resulting in erroneous indications. Since the question stem does not specify tygon hose or Reactor Vessel Level indications, nor does it specify whether a hot leg vent path exists or not, both responses 'a' and 'c' should be considered correct. Note that the original examination selected 'a' as the correct response, but this was changed to 'c' when the reviewers assumed the tygon hose was being referenced.

JUSTIFICATION REFERENCE(S): IPO-010B, Rev 0, Section 5.1
Drawing M2-0250

NOTE: Insulation will have to be removed to obtain temperature readings on the Reactor Vessel Flange. Temporary instrumentation may be installed to allow readings to be obtained from a remote location.

5.1.5 WHEN Reactor Vessel level is at the vessel flange (132 inches above core plate - 834'0") with the Reactor Vessel Head tensioned, THEN perform the following steps to monitor Reactor Vessel Flange temperature:

A. Notify Mechanical Maintenance to remove sufficient insulation to obtain temperature readings on the Reactor Vessel Flange in accordance with MSM-CO-9901, "Reactor Vessel Head Removal and Installation" or MSM-CO-9907, "Reflective Insulation Removal, Rework and Installation".

B. Ensure Reactor Vessel Flange temperature is being monitored at least shiftly on OWI-104-38, "Temporary Equipment Log" until the Reactor Vessel Head is detensioned OR water level is restored above flange level.

NOTE: The reduced inventory level transmitter calibration is initiated by IPO-005B, "Plant Cooldown from Hot Standby to Cold Shutdown".

5.1.6 WHEN I&C has completed channel calibration activities, THEN ensure the reduced inventory level transmitters are properly aligned by performing the following steps:

A. WHEN requested by I&C, THEN align the high pressure side of the reduced inventory level transmitters:

- 2-LT-3615A, RX VSL LVL (NR)
  - 2RC-8104, RV 2-01 LVL XMTR 3615A RT VLV - OPEN
  - 2RC-8106, RV 2-01 LVL XMTR 3615A DNSTRM ISOL VLV - OPEN
  - 2RC-8107, RV 2-01 LVL XMTR 3615A UPSTRM ISOL VLV - OPEN

5.1.6 A. 2) 2-LT-3615B, RX VSL LVL (WR)

- 2RC-8105, RV 2-01 LVL XMTR 3615B/PRESS XMTR 3616 RT VLV - OPEN

_____

- 2RC-8108, RV 2-01 LVL XMTR 3615B DNSTRM ISOL VLV - OPEN

_____

- 2RC-8109, RV 2-01 LVL XMTR 3615B UPSTRM ISOL VLV - OPEN

_____

B. Notify I&C to place the reduced inventory level transmitters in service:

- 2-LT-3615A, RX VSL LVL (NR) _____
- 2-LT-3615B, RX VSL LVL (WR) _____

C. Ensure ALB-4B 2.8 "RCS MID LOOP LVL LO" alarm is available and OFF.

_____

NOTE: The following indications and ranges are provided on the reduced inventory level indications:

2-LI-3615A (NR)	825'9" - 828'3"	33"-63" above core plate
2-LI-3615B (WR)	823'0" - 835'6"	0"-150" above core plate

HI alarm - steady up arrow
LO alarm - steady down arrow
HI or LO alarm - illuminated rectangle
Top segment of indicator flashing - overrange high
Bottom segment of indicator flashing - overrange low

NOTE: The reduced inventory level indication will not correspond to the tygon level indicator until the RCS is vented.

5.1.7 Vent the RCS to Containment atmosphere by performing the following:

CAUTION: At least one group of two Overpressure Protection devices listed in Technical Specification 3.4.8.3 shall be operable in MODES 5 and 6 with the Reactor Vessel Head on the Reactor Vessel.

A. Place the Pressurizer PORVs in AUTO and verify the PORVs are CLOSED to isolate nitrogen flow.

- 1/2-PCV-455A, PRZR PORV _____
- 1/2-PCV-456, PRZR PORV _____

B. Ensure the following valves are OPEN:

- 2RC-8098, PRZR 2-01 VNT HDR TV VLV (CNTMT 905' U2 PRZR Up Room) _____
- 2RC-0035, RV 2-01 HEAD VNT TC VLV (CNTMT 860' U2 RV Head Area) _____
- T-12 (CNTMT 860' Refueling Cavity Operating Deck) _____
- T-5 (CNTMT 860' Refueling Cavity Operating Deck) _____

5.1.7 C. Ensure the following valves are CLOSED:

- T-1 (CNTMT 820' PRT Room) _____
- T-2 (CNTMT 820' PRT Room) _____
- T-3 (CNTMT 820' PRT Room) _____
- 2RC-8048 PRT 2-01 VNT VLV (CNTMT 820' PRT Room) _____

NOTE: Some fluctuation in tygon hose and reduced inventory level indication may occur as the RCS vent paths are established.

D. Perform the following steps to align a Reactor Vessel Head vent path:

CAUTION: DO NOT install a temporary bottle which is vented to Containment atmosphere between T-2 and the Containment Exhaust System. This vent path will be used to exhaust radioactive gases from under the Reactor Vessel Head and must remain connected directly to the exhaust system.

1) Install tygon hose (approximately 25') from T-2 (3/4" nipple) to the Containment Exhaust System (route the tygon hose and attach to the one (1) inch test connection in the PRT Room at 829').

_____

2) OPEN T-1 (CNTMT 820' PRT Room). _____

CAUTION: RCS water level should be maintained below the T-4 tee connection during subsequent steps to prevent water from entering the ventilation duct.

5.1.7 E. Perform the following steps to align a Pressurizer vent path:

1) Verify T-4 (CNTMT 834' By PRT Room Stairs) is OPEN.

_____

2) Locally verify RCS water level is below the T-4 tee connection (CNTMT 834' By PRT Room Stairs)to prevent water from entering the Ventilation duct through T-3 and T-2.

_____

3) SLOWLY OPEN T-3 (CNTMT 820' PRT Room) AND ensure water does not enter the tygon hose connected to T-3.

_____

CAUTION: The following steps will release potentially radioactive gas to the Primary Plant Exhaust System. The WRGM and Containment PIG levels should be closely monitored and venting rate readjusted as necessary to prevent actuation of Containment Ventilation Isolation. In addition, potentially radioactive gas may be released into the PRT room from the exhaust plenum. Radiation Protection should monitor for a possible gas release in the area during the initial venting activity.

[R] F. Vent the Reactor Vessel Head and Pressurizer as follows:

1) Monitor the WRGM and Containment PIG activity levels during the RCS venting operation.

_____

2) Vent the Pressurizer and Reactor Vessel Head by SLOWLY opening T-2 (CNTMT 820' PRT Room).

_____

3) Monitor the T-4 tee connection AND ensure water does not enter the tygon hose to T-3 during venting activities.

_____

5.1.7 G. WHEN the RCS is vented to approximately atmospheric pressure, THEN perform the following:

1) Route a 150' tygon hose from 2RC-8098 (3/4 inch nipple) to the Containment vent exhaust duct (Hose should be routed, prior to connection to 2RC-8098, inserted into the exhaust grill and secured by taping at 830' by the stairs to the PRT Room. Minimize bends, crimps and dips in the tygon hose to prevent erroneous indication. Do not route hose across walkways or through doors which may cause pinch points in the tygon hose. Tie wraps should be used to properly support the weight of the hose and minimize loop seals).

_____

2) CLOSE the following valves:

- T-3 (CNTMT 820' PRT Room). _____
- 2RC-8098, PRZR 2-01 VENT HDR TV VLV (905' U2 PRZR Room). _____

3) Disconnect the tygon hose which is routed to T-4 from 2RC-8098, PRZR 2-01 VENT HDR TV VLV. _____

4) Connect the tygon hose which is routed to the Containment exhaust at 2RC-8098, PRZR 2-01 VENT HDR TV VLV. _____

5) OPEN 2RC-8098, PRZR 2-01 VENT HDR TV VLV. _____

6) Verify the vent hose from 2RC-8098 to the Containment vent exhaust duct is properly routed to eliminate pinch points and minimize formation of loop seals.

_____

H. Verify the reduced inventory level indicator(s) correspond to tygon hose level indication (CNTMT 834' By PRT Room Stairs).

- 2-LI-3615A, RX VSL LVL (NR) - (overrange high) _____
- 2-LI-3615B, RX VSL LVL (WR) _____

5.1.15 Monitor tygon hose (CNTMT 834' By PRT Room Stairs) and the RCS reduced inventory level indication during RCS drain.

_____

CAUTION: Do not exceed a drain rate of 100 gpm. This is to prevent erroneous level indication due to pressure differences in the RCS.

5.1.16 Drain the RCS to 84 inches above the core plate (830'0") by performing the following steps:

[C] A. Monitor RHR Pump motor current continuously during the RCS drain.

- 2-II-APRH1 RHRP 1 MOT CURRENT _____
- 2-II-APRH2 RHRP 2 MOT CURRENT _____

B. IF the RCDT Pumps will be used to drain the RCS, THEN perform the following steps:

1) Ensure 2-8551, RCDT PMP 2-01/2-02 DISCH TO BORON RECYC EVAP FD DEMIN HDR ISOL VLV is OPEN (SFGD 810' S. Penet Room).

_____

2) Ensure 2-7137, LWPS RCDT 2-01 TO WHT 1-01 ISOL VLV is CLOSED (SFGD 810' S. Penet Room).

_____

3) Ensure the Boron Recycle System is properly aligned to receive Reactor Coolant and transfer it to the desired RHT per RWS-105, "Boron Recycle System".

_____

4) OPEN 2-7174, LWPS RCS LOOP DRN HDR TO RCDT 2-01 PMP SUCT ISOL VLV (CNTMT 815' SG Loop 4 Room).

_____

NOTE: RCS Loop 4 will be used for tygon hose level indication during RCS drain and shall not be used as a drain point.

5.1.16 B. 5) Ensure the upstream isolation valve in the desired loop drain line is OPEN.

- 2RC-8057A, RCS CL 2-01 TO WPS UPSTRM DRN VLV (CNTMT 812' SG 2-01 Compt) _____
- 2RC-8057B, RCS CL 2-02 TO WPS UPSTRM DRN VLV (CNTMT 812' SG 2-02 Compt) _____
- 2RC-8057C, RCS CL 2-03 TO WPS UPSTRM DRN VLV (CNTMT 812' SG 2-03 Compt) _____

CAUTION: The drain rate of Reactor Coolant should be controlled so as not to exceed the pumping rate of the RCDT Pumps.

6) Throttle open the downstream isolation valve for the loop drain opened in Step 5 to obtain the desired RCS drain rate at less than or equal to 100 gpm.

- 2RC-8058A, RCS CL 2-01 TO WPS DNSTRM DRN VLV (CNTMT 812' SG 2-01 Compt) _____
- 2RC-8058B, RCS CL 2-02 TO WPS DNSTRM DRN VLV (CNTMT 812' SG 2-02 Compt) _____
- 2RC-8058C, RCS CL 2-03 TO WPS DNSTRM DRN VLV (CNTMT 812' SG 2-03 Compt) _____

7) Verify 2-LCV-1003, RCDT LVL CTRL ISOL VLV modulates to maintain 40-60% RCDT level (AUX 790' Liquid Waste Processing Panel).

_____

5.1.16 C. IF RHR letdown will be used to drain the RCS, THEN perform the following steps:

1) Adjust charging flow and 2-PK-131, LTDN HX OUT PRESS CTRL to lower RCS level at less than or equal to 100 gpm.

_____

2) Adjust 2-LK-112C, VCT LVL CTRL in Auto or Manual to maintain greater than 46% VCT level and allow letdown to divert to the RHT (2-LCV-112A will open due to adjustment on 2-LK-112C).

_____

NOTE: With RCS level greater than 84 inches above core plate (830'0"), seal injection flow shall be maintained between 6 and 13 gpm to each RCP. This note is not applicable to RCPs undergoing seal replacement.

5.1.17 WHEN level is indicating approximately 84 inches above core plate (830'0"), THEN stop RCS drain by performing the following:

A. IF RCDT Pumps are being used to drain the RCS, THEN CLOSE the downstream isolation valve for the loop being used to drain the RCS.

- 2RC-8058A, RCS CL 2-01 TO WPS DNSTRM DRN VLV _____
- 2RC-8058B, RCS CL 2-02 TO WPS DNSTRM DRN VLV _____
- 2RC-8058C, RCS CL 2-03 TO WPS DNSTRM DRN VLV _____

B. IF RHR letdown is being used to drain the RCS, THEN adjust 2-LK-112C, VCT LVL CTRL potentiometer setting to 6.2 AND ensure the level controller is in AUTO.

_____

C. Adjust charging flow and 2-PK-131, LTDN HX OUT PRESS CTRL to maintain level at approximately 84 inches above core plate (830'0").

_____

5.1.18 Verify the reduced inventory RCS level indication agrees with tygon hose level indication (CNTMT 834' By PRT Room Stairs).

- 2-LI-3615A, RX VSL LVL (NR) - (overrange high) _____
- 2-LI-3615B, RX VSL LVL (WR) _____

CAUTION: Any discrepancies in RCS level indications shall be resolved prior to draining the RCS below an indicated level of 69 inches above core plate (828'9").

5.1.26 Verify that the reduced inventory level indications correspond to Tygon hose level indication (CNTMT 834' By PRT Room Stairs).

- 2-LI-3615A, RX VSL LVL (NR) - (overrange high) _____
- 2-LI-3615B, RX VSL LVL (WR) _____

CAUTION: At least one large hot leg vent path must be established and maintained prior to opening any RCS Cold Leg Penetration or installing any Temporary Seals on RCS components. Attachment 15, "Adequate Hot Leg Vent Paths" describes the criteria and restrictions for establishing vent paths.

5.1.27 Prior to reducing RCS level less than 80 inches above core plate (829'8"), perform the following:

A. Verify that NO Open RCS Cold Leg Penetrations exist

_____

-OR-

Establish and maintain an adequate hot leg vent path for Open RCS Cold Leg Penetrations per Attachment 15, "Adequate Hot Leg Vent Paths".

_____

B. Verify that NO Temporary Seals are installed on RCS components

_____

-OR-

Establish and maintain an adequate hot leg vent path for Temporary Seals Installed per Attachment 15, "Adequate Hot Leg Vent Paths".

_____

5.1.28 G. IF the required elevation is less than 59 inches above core plate (827'11"), THEN notify I&C to reset the mid loop low level alarm setpoints for 2-LI-3615A AND 2-LI-3615B to 51 inches per ICI-4136B and ICI-4137B.

- 2-LI-3615A - 51 inches _____[IV]_____
- 2-LI-3615B - 51 inches _____[IV]_____

5.1.29 Monitor tygon hose (CNTMT 834' By PRT Room Stairs) and the RCS reduced inventory level indication during RCS drain.

_____

CAUTION: Under normal conditions, an alternate means of monitoring Reactor Vessel water temperature shall be available prior to draining less than 80 inches above core plate. Alternate indication may include the CETs or temporary incore temperature measuring equipment.

[C] 5.1.30 Ensure Reactor Vessel water temperature is capable of being monitored by performing one of the following:

A. IF the Reactor Vessel Head is installed, THEN verify at least two (2) CETs are available to monitor RCS temperature AND document on Attachment 1.

_____

B. IF the Reactor Vessel Head is NOT installed, THEN verify at least two (2) independent means of monitoring Reactor Vessel water temperature from the Control Room are available.

_____

CAUTION: Do not exceed a drain rate of 100 gpm. This is to prevent erroneous level indication due to pressure differences in the RCS.

5.1.31 Drain the RCS to 69 inches above core plate (828'9") by performing the following steps:

[C] A. Monitor RHR Pump motor current continuously during the RCS drain.

- 2-II-APRH1 RHRP 1 MOT CURRENT _____
- 2-II-APRH2 RHRP 2 MOT CURRENT _____

5.1.33 WHEN level is indicating approximately 69 inches above core plate (828'9"), THEN stop RCS drain by performing the following:

A. IF RCDT Pumps are being used to drain the RCS, THEN CLOSE the downstream isolation valve for the loop being used to drain the RCS.

- 2RC-8058A, RCS CL 2-01 TO WPS DNSTRM DRN VLV _____
- 2RC-8058B, RCS CL 2-02 TO WPS DNSTRM DRN VLV _____
- 2RC-8058C, RCS CL 2-03 TO WPS DNSTRM DRN VLV _____

B. IF RHR letdown is being used to drain the RCS, THEN adjust 2-LK-112C, VCT LVL CTRL potentiometer setting to 6.2 AND ensure the level controller is in AUTO.

_____

C. Adjust charging flow and 2-PK-131, LTDN HX OUT PRESS CTRL to maintain level approximately 69 inches above core plate (828'9").

_____

CAUTION: Any discrepancies in RCS level indications shall be resolved prior to draining the RCS below an indicated level of 69 inches above core plate (828'9").

5.1.34 Ensure the reduced inventory RCS level indication agrees with tygon hose level indication (CNTMT 834' By PRT Room Stairs) before continuing RCS drain.

- 2-LI-3615A, RX VSL LVL (NR) - (overrange high) _____ [IV]_____
- 2-LI-3615B, RX VSL LVL (WR) _____ [IV]_____

5.1.35 IF an RHR Pump becomes inoperable, THEN go to ABN-104, "Residual Heat Removal System Malfunction".

_____

5.1.36 IF Reactor Vessel level will be maintained at 69 inches above core plate (828'9"), THEN proceed to Section 5.5.

_____

5.1.37 IF desired to fill the RCS from 69 inches above core plate (828'9"), THEN proceed to Section 5.2.

_____

5.1.40 B. Determine the difference between the initial and final values of the RHT level and BRS totalizer readings recorded in Step 5.1.13.

- RHT Level:

  final: _____% - initial: _____% = _____% _____

- BRS totalizer:

  initial: _____ gal - final _____ gal = _____ gal_____

C. Verify that the level in the RHT has increased by approximately 32% (32,000 gallons).

_____

CAUTION: Water level shall be maintained below the RCP seal packages, except when deliberately refilling the system, to avoid washing contaminants into the RCP seals. With RCP seal injection isolated to any RCP not undergoing seal replacement, level should be maintained less than 84 inches above the core plate (830'0").

5.1.41 Continue recording data on Attachment 5 every 30 minutes.

_____

5.1.42 WHEN RCS level is stable, THEN perform the following:

A. Notify Radiation Protection to survey the Reactor Vessel Head and Cavity Areas and verify radiation levels will not preclude planned activities in these areas.

_____

B. Verify the reduced inventory level indications correspond to tygon hose level indication (CNTMT 834' By PRT Room Stairs).

- 2-LI-3615A, RX VSL LVL (NR) _____
- 2-LI-3615B, RX VSL LVL (WR) _____

5.1.43 Verify RHR flow is less than the limit of Attachment 2 for the indicated RCS level.

_____

CAUTION: At least one large hot leg vent path must be established and maintained prior to opening any RCS Cold Leg Penetration or installing any Steam Generator nozzle dam. Attachment 15, "Adequate Hot Leg Vent Paths" describes the criteria and restrictions for establishing vent paths.

5.1.44 IF Steam Generator manways are to be removed, THEN perform the following:

NOTE: The following drain lines may be blocked with crud or chemical deposits.

[R] A. OPEN the required valves to drain the selected Steam Generator channel heads.

- 2RC-8079A, SG 2-01 HEAD CHAN DRN VLV _____
- 2RC-8079B, SG 2-02 HEAD CHAN DRN VLV _____
- 2RC-8079C, SG 2-03 HEAD CHAN DRN VLV _____
- 2RC-8079D, SG 2-04 HEAD CHAN DRN VLV _____

[C] B. Establish and maintain at least one large hot leg vent path for an Open RCS Cold Leg Penetration per Attachment 15, "Adequate Hot Leg Vent Paths" to permit removal of the Steam Generator manways.

_____

C. Remove remaining Steam Generator Manways and install nozzle dams on the required Steam Generators in accordance with MSM-CO-9904, "Steam Generator Manway Cover Removal and Installation" OR MRS 2.2.2 TU-20, "Primary Manway Cover Removal and Installation" and MSM-CO-9910, "Steam Generator Nozzle Dam Installation, Seal Pressurization and Removal".

_____

D. IF Steam Generator nozzle dams are installed, THEN ensure the nozzle dam control panel air supplies and power supplies are identified in the Shift Order or by Standing Order.

_____

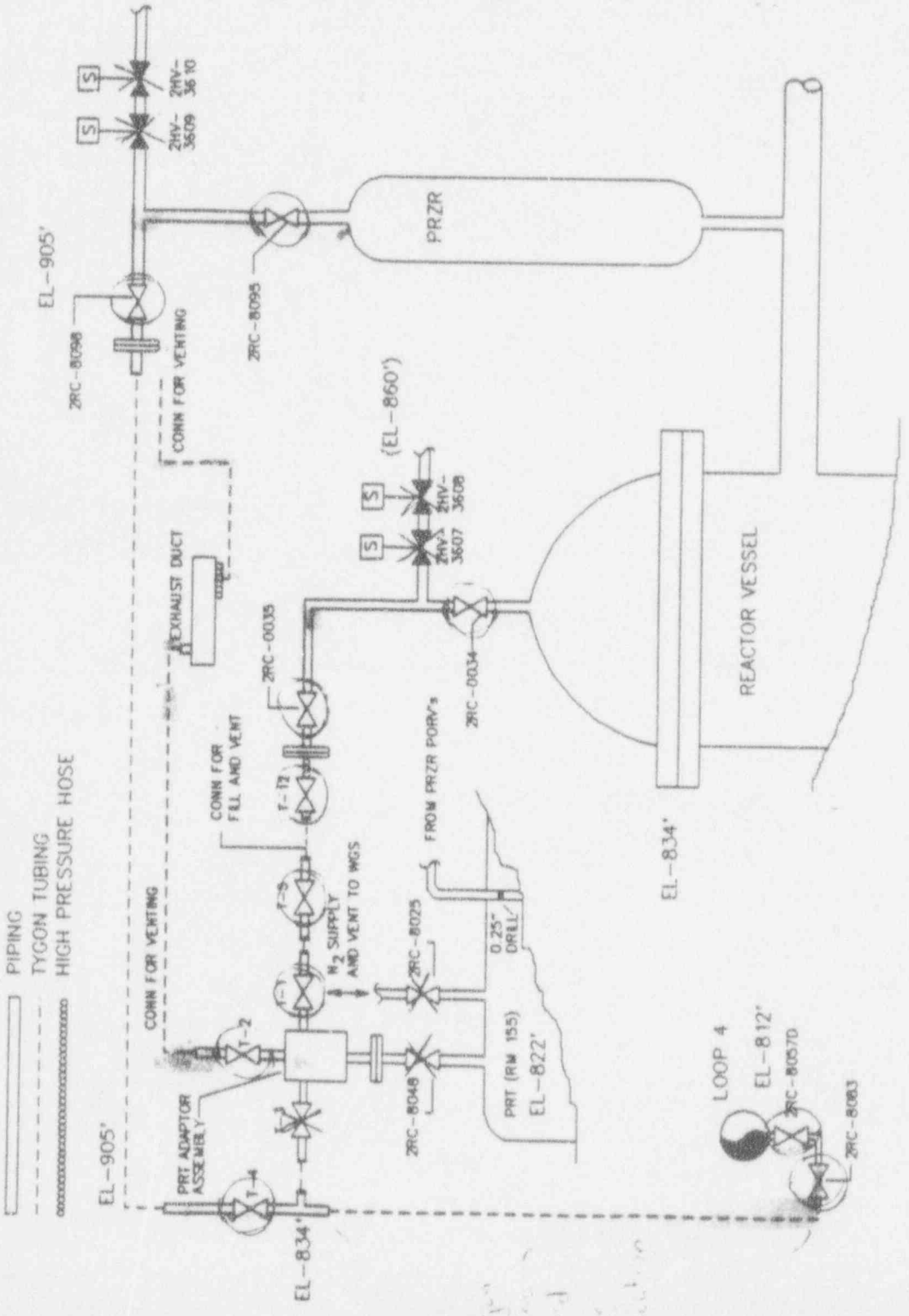
E. IF Steam Generator nozzle dams are installed, THEN begin monitoring Steam Generator nozzle dams per OWI-104-52, "Equipment Log Steam Generator Nozzle Dams".

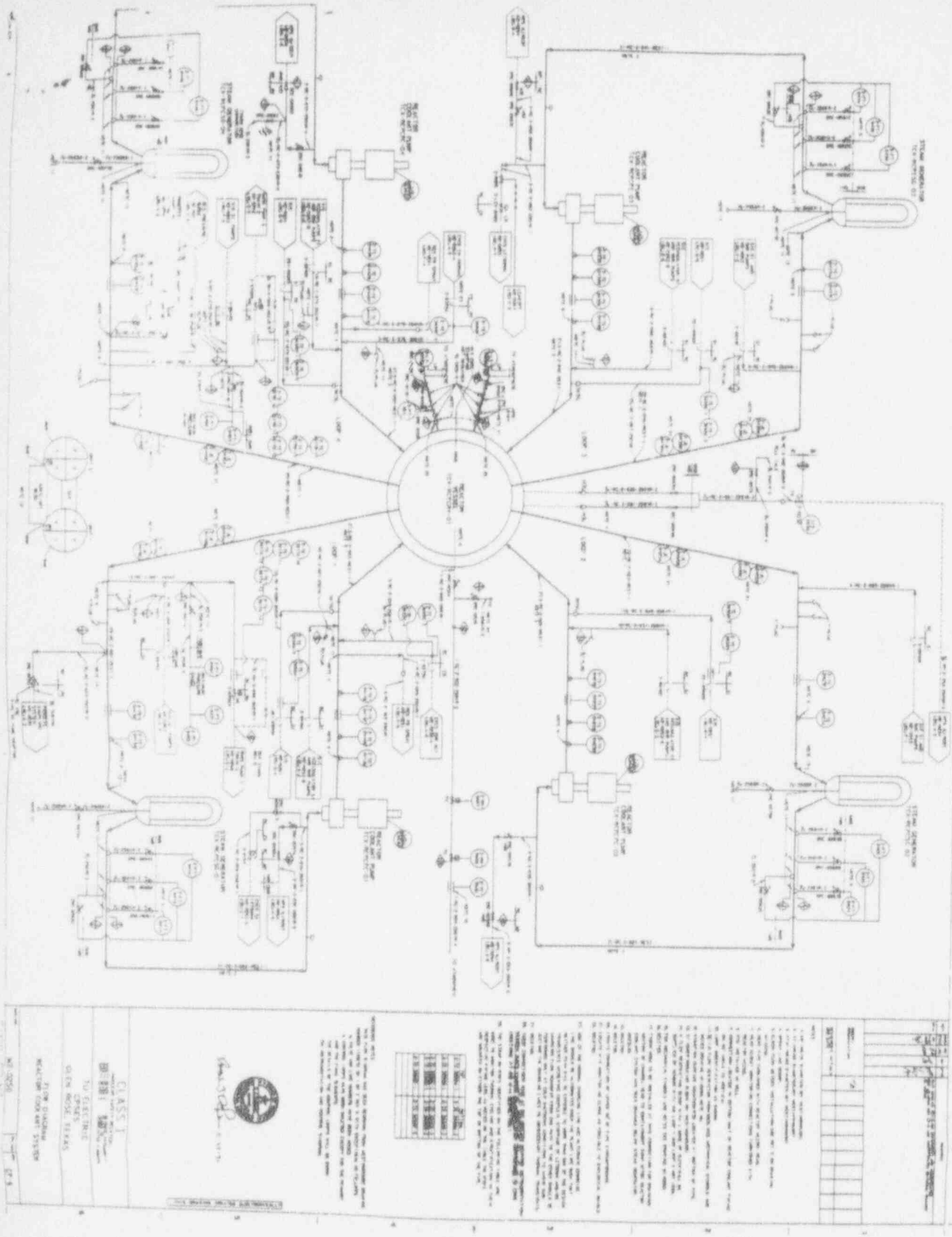
_____

2
2H1193

ATTACHMENT 6
PAGE 1 OF 1

PRT DIAGRAM OF TYGON HOSE ARRANGEMENT





ATTACHMENT 3

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

CANDIDATE'S NAME: _____

FACILITY: Comanche Peak 1

REACTOR TYPE: PWR-WEC4

DATE ADMINISTERED: 93/11/15

INSTRUCTIONS TO CANDIDATE:

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

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

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

_____
Candidate's Signature

NRC RULES AND GUIDELINES FOR LICENSE EXAMINATIONS

During the administration of this examination the following rules apply:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

QUESTION: 001 (1.00)

The power range HI FLUX and RATE TRIP bistables of a failed power range detector are placed in the trip condition by which ONE of the following?

a. Taking the applicable comparator channel defeat switch to the failed channel position at the comparator and rate drawer.

b. Taking the applicable Power Mismatch Bypass switch to the failed channel position at the Detector Current Comparator drawer.

c. Taking the control power fuses out of the Power Range A Drawer.

d. Taking the applicable control power fuses out of the Comparator and Rate Drawer.

QUESTION: 002 (1.00)

Intermediate Range [IR] compensating voltage fails low for one of the IR detectors. During a reactor shutdown, the IR current on the failed detector does not go below 5 E-5 amps. Which one of the choices below correctly completes the following?

Once the non-failed IR detector decreased to less than 1 E-10 amps,

a. the failed IR detector will be bypassed allowing the source range detectors to energize.

b. the Source Range Reactor Trip Reset/Block pushbuttons will be used to manually reenergize the source range detectors.

c. P-6 will be unblocked and the source range detectors will automatically reenergize.

d. one source range detector will automatically reenergize and the other must be manually reenergized.

QUESTION: 003 (1.00)

Which one of the following is correct concerning the CVCS PDP?

a. The pump bypass valve opens on an "S" signal to ensure adequate cooling to the PDP.

b. The minimum speed setting is intended to ensure adequate cooling to the PDP.

c. The pump bypass valve shuts when starting the PDP to prevent pump runout.

d. The minimum speed setting is intended to ensure adequate seal water injection.

QUESTION: 004 (1.00)

Which one of the below choices is correct concerning the core exit temperature thermocouples?

a. They are arranged in a plane just above the upper support plate.

b. They are arranged in strings extending from the upper support plate to the core mid-plane.

c. They are arranged in a plane just above the upper core plate.

d. They are arranged in strings extending from the upper core plate to the core mid-plane.

QUESTION: 005 (1.00)

RHR train A is in service in mode 5 with the RCS filled. Which one of the alarm conditions below most appropriately indicates the need to use section 4.0, Mode 4, 5, or 6 Loss of RCS Temperature/Flow Control - RCS Filled, of ABN-104, "Residual Heat Removal System Malfunction"?

a. RHRP 1/2 OVERLOAD/TRIP

b. RHR HX 1 CCW RET FLO LO

c. RHRP 1/2 HL SUCT VLV MISALIGN HV-8701/02

d. VCT LVL LO

QUESTION: 006 (1.00)

Which one of the containment ventilation system parameters below is monitored by the multi-point temperature recorder on CB-03?

a. RC pipe penetration fan exhaust temperature

b. Containment purge air supply temperature

c. Containment purge air exhaust temperature

d. Neutron detector well exhaust temperature

QUESTION: 007 (1.00)

Source Range Instrument N31 has been reading 1000 cps for the last several hours while in COLD SHUTDOWN [Mode 5]. Electronic noise from a welder causes N31 to reach 3000 cps for 30 seconds. Which of the following describes the response to this transient?

a. The charging pump suction shifts from the VCT to the RWST.

b. The HIGH FLUX at SHUTDOWN annunciator alarms.

c. Containment purge supply and exhaust dampers close.

d. An automatic reactor trip signal is generated.

QUESTION: 008 (1.00)

Which of the following describes HOW the Charging Pumps are protected from overheating when operating near shutoff head following an SIS actuation?

a. Relief valves attached to the miniflow recirculation lines are automatically unisolated by a safety injection signal and will lift at 2200 psig to recirc charging flow back to the RWST.

b. A relief valve located between the Charging Pumps and the miniflow recirculation line isolation valves [HV-8110 & HV-8111] will open at 2300 psig and bypass flow back to the suction of the Charging Pumps.

c. If RCS pressure increases above 2300 psig, the operator must open the miniflow recirculation isolation valves [HV-8110 & HV-8111].

d. If RCS pressure increases above 2200 psig with a safety injection signal present, the miniflow recirculation isolation valves [HV-8110 & HV-8111] will automatically open.

QUESTION: 009 (1.00)

Which of the following states the automatic actions that occur on a Safety Injection Actuation Signal?

a. CCW pumps auto start, non-safeguards CCW loop isolation valves shut, RHR HX CCW discharge valves open 22%

b. CCW pumps auto start, RHR HX CCW discharge valves open 22%

c. RHR HX CCW discharge valves fully open, train "A" and "B" CCW cross-connect valves shut

d. Non-safeguards CCW loop isolation valves shut, RHR HX CCW discharge valves fully open, train "A" and "B" CCW cross-connect valves shut

QUESTION: 010 (1.00)

Unit 1 is in MODE 3 with the RCS at normal operating temperature and pressure. A normal containment entry is to be made to check the RCDT drain isolation valve 1-7136. The previous entry was 125 days ago.

Which one of the following describes a condition that is required for the containment entry?

a. A Confined Space Entry Permit must be approved first.

b. Each person entering containment must wear an ice vest since the RCS temperature is greater than 350 degrees F.

c. A minimum of two persons are required to enter containment.

d. A neutron survey meter must be taken by the entry team since they will be within the biological shield.

QUESTION: 011 (1.00)

With the unit at 100% power, surveillance OPT-447A "Solid State Protection System Train 'A' Actuation Logic Test" is being performed. Section 8.4 is being performed to test the Reactor Trip Breaker. The appropriate Bypass Breaker is closed and the other Bypass Breaker is open and racked out.

Which one of the following describes final breaker positions after the Train 'A' reactor trip signal is generated?
(Assume the reactor does NOT trip.)

a. Reactor Trip Breaker RTA and Bypass Breaker BYA are open.

b. Reactor Trip Breaker RTA and Bypass Breaker BYB are open.

c. Reactor Trip Breaker RTB and Bypass Breaker BYB are open.

d. Reactor Trip Breaker RTB and Bypass Breaker BYA are open.

QUESTION: 012 (1.00)

The unit is in MODE 3 at normal operating temperature and pressure, with all systems in automatic. A Steam Generator atmospheric relief valve opened and a RCS cooldown ensued. The RCS temperature decreased by 10 degrees F while the valve was opened.

Which one of the following describes the response of VCT level as the result of this occurrence? (Assume the RCS temperature remains low during this period.)

VCT level will:

a. decrease until LT-112 initiates an automatic makeup to restore level to 56%.

b. increase until LT-185 modulates LCV-112A open to divert flow to the Hold-up Tank at 62%.

c. increase when LT-112 closes LCV-112A allowing full letdown to the VCT.

d. decrease when LT-185 opens HV-8104 (Emergency Boration valve) directly to suction of charging pumps.

QUESTION: 013 (1.00)

Which one of the following describes the method used at CPSES to check for ECC inaccuracies during a unit startup in accordance with IPO-002A "Plant Startup From Hot Standby To Minimum Load"?

a. The count rate is monitored at a MAXIMUM of every 50 steps.

b. The startup rate (SUR) is maintained GREATER THAN 0.5 dpm when pulling rods.

c. The RCS temperature is monitored every 30 minutes to be GREATER THAN 551 degrees F until criticality is achieved.

d. All control bank positions are monitored to ensure that the Control Bank Offset (CBO) is at a MAXIMUM of 6 steps.

QUESTION: 014 (1.00)

The unit is at 50% power and 'B' train of SSPS is in "In Test" per surveillance OPT-448A "Solid State Protection System Train 'B' Actuation Logic Test".

Which one of the following describes what would happen if a loss of a 48 VDC instrument power supply were to occur on the 'A' train of SSPS?

a. A General Warning would exist only for 'A' train SSPS, but the reactor would NOT trip.

b. A General Warning would exist only for 'A' train SSPS, so only the 'A' train would generate a reactor trip.

c. A General Warning would exist for both 'A' and 'B' trains SSPS, but only the 'A' train would generate a reactor trip.

d. A General Warning would exist for both 'A' and 'B' trains SSPS, so both 'A' and 'B' train would generate a reactor trip.

QUESTION: 015 (1.00)

Which one of the following describes the interlock(s) that must be satisfied in order to open 1-8811A, "CNTMT SUMP TO RHR PUMP #1"?

a. RWST suction valve 1-8812A must be closed.

b. RWST suction valve 1-8812A AND one of the two loop suction valves 1-8701A or 8702A must be closed.

c. RWST suction valve 1-8812A, AND Hot Leg Recirculation isolation valve 1-8840 AND both loop suction valves 1-8701A / 8702A must be closed.

d. RWST suction valve 1-8812A, AND Hot Leg Recirculation isolation valve 1-8840, AND SIP Suction cross-connect valve 1-8804A AND SIP Mini-flow isolation valves 1-8814A/B must be closed.

QUESTION: 016 (1.00)

Which one of the following signals/conditions will cause an automatic start of a non-running CCW pump.

a. Manual start of the train-associated emergency diesel generator.

b. Train-associated SSW pump automatic start due to low SSW system pressure.

c. Low CCW cooling loop header flow on the associated train.

d. Train-associated CCW surge tank Hi-Hi level

QUESTION: 017 (1.00)

Which one of the following identifies the source from which automatic makeup is supplied to the CCW system?

a. Reactor Makeup Water system

b. CCW Drain Tank system

c. Demineralized Water system

d. Safety Chilled Water system

QUESTION: 018 (1.00)

A manual emergency boration is being initiated in accordance with ABN-107 "Emergency Boration" Attachment 3. When the controller for the Blender Flow Control valve, 1/1-FCV-110A, was placed to OPEN, the switch failed. Which one of the following describes how the position of 1-FCV-110A can then be maintained to allow boric acid flow?

a. A nitrogen accumulator in the air line to the valve operator maintains the valve open.

b. The operator locally engages the manual handwheel for the valve and opens it.

c. The operator locally isolates and vents the air line to the valve so that it fails open.

d. Installation of a temporary jumper provides 120 V AC power to the open solenoid for the valve.

QUESTION: 019 (1.00)

Given the following:

-Unit 1 has tripped from 100% power.
-One control rod has failed to insert into the core.
-All other equipment is operating normally.

Which one of the following characterizes the relationship between actual shutdown margin and calculated shutdown margin?

a. Actual shutdown margin is less than calculated shutdown margin because of the positive reactivity associated with the stuck rod.

b. Actual shutdown margin is less than calculated shutdown margin because MTC adds positive reactivity during the cooldown following the trip.

c. Actual shutdown margin is the same as calculated shutdown margin because it is assumed that a rod will stick on a trip.

d. Actual shutdown margin is greater than calculated shutdown margin because xenon peaking will offset the stuck rod.

QUESTION: 020 (1.00)

Given the following:

-Unit 1 has experienced a Loss of Coolant Accident
-The transition from Procedure EOP-1.0A, "Loss of Reactor or Secondary Coolant" to EOS-1.2A, "Post LOCA Cooldown and Depressurization" has been made.
-Depressurization of the RCS is commencing.

Which one of the following will be an indication that voiding is occurring in the RCS due to the depressurization?

a. Rapidly increasing pressurizer level.

b. Decreasing Safety Injection flow.

c. Increasing RCS pressure.

d. Rapid drop in subcooling.

QUESTION: 021 (1.00)

Which one of the following is a Confined Space as defined by the Confined Space Entry procedure?

a. Skid Room in Chlorination Building for Circulating Water Intake Structure.

b. Wet Cask Pit & Fuel Handling Equipment Cavity.

c. Containment Sumps.

d. Settling Ponds.

QUESTION: 022 (1.00)

Which one of the following is the minimum number of plant personnel required to be onsite to man the Fire Brigade?

a. Four (4), which CANNOT include those required for safe shutdown.

b. Four (4), which CAN include those required for safe shutdown.

c. Five (5), which CANNOT include those required for safe shutdown.

d. Five (5), which CAN include those required for safe shutdown.

QUESTION: 023 (1.00)

Which one of the following signals will auto start both the motor and turbine driven Auxiliary Feedwater Pumps?

a. 2 of 4 Low Low Levels in 1 of 4 steam generators.

b. Trip of both Main Feedwater Pumps.

c. SI signal.

d. Blackout sequence signal.

QUESTION: 024 (1.00)

Which one of the following lists the inputs to the Subcooled Margin Monitor (SMM)?

a. RCS loop RTD temperatures; RCS loop pressures; average CET temperature.

b. Pressurizer temperature; Pressurizer pressure; highest CET temperature.

c. RCS loop pressures; Pressurizer pressure; highest CET temperature; RCS loop RTD temperatures.

d. Pressurizer temperature; Pressurizer pressure; RCS loop pressures; average CET temperature.

QUESTION: 025 (1.00)

Which one of the following RPS reactor trips provides protection from departure from nucleate boiling?

a. Overpower N-16 Trip.

b. Pressurizer Level High Trip.

c. Power Range High Flux (high setpoint).

d. Power Range High Flux (low setpoint).

QUESTION: 026 (1.00)

Given the following:

-Unit 1 is at 100% power.
-Station Service Water Pump 1 trips.

Which one of the following is the initial operator action in accordance with ABN-501, "Station Service Water Malfunction"?

a. Attempt to restart SSW pump 1.

b. Stop CCW pump 1, if running.

c. Verify CCW pump 2 is running.

d. Verify SSW pump 2 is running.

QUESTION: 027 (1.00)

Given the following:

-Unit 2 is at 35% power.
-Reactor Coolant pump 2 trips.

Which one of the following describes the initial plant response, assuming no operator action?

a. A reactor trip will NOT occur but the affected SG water level will shrink.

b. A reactor trip will NOT occur but the affected SG water level will swell.

c. A reactor trip will occur and the affected SG water level will shrink.

d. A reactor trip will occur and the affected SG water level will swell.

QUESTION: 028 (1.00)

Which one of the following would require declaring entry into a one hour action statement for minimum number of "Operable Boron Injection Flow Paths" or "Borated Water Sources" for Unit 2 in Mode 1?

a. Both centrifugal charging pumps declared inoperable.

b. Boron concentration in the RWST sampled to be 2155 ppm.

c. One centrifugal and the positive displacement charging pump are declared inoperable.

d. Indicated level in the refueling water storage tank reads 92%.

QUESTION: 029 (1.00)

Which one of the following describes how and why Pressurizer level is programmed?

a. From auctioneered-high Tave because Pressurizer volume is insufficient to accomodate reactor coolant system water volume changes while limiting pressure transients.

b. From auctioneered-high Tave because Pressurizer volume is sufficient to accomodate reactor coolant system water volume changes while limiting pressure transients.

c. From auctioneered-high Tc because Pressurizer volume is sufficient to accomodate reactor coolant system water volume changes while limiting pressure transients.

d. From auctioneered-high Tc because Pressurizer volume is insufficient to accomodate reactor coolant system water volume changes while limiting pressure transients.

QUESTION: 030 (1.00)

Given the following:

-A spent fuel assembly is being raised from its slot in the storage pool for return to the reactor.
-Gas bubbles are coming to the surface of the pool.
-Radiation levels in the Spent Fuel Pool area are increasing.

Which one of the following actions is required of personnel in the Fuel Handling Building?

a. Notify the control room to sound the Radiological Emergency Alarm.

b. Immediately evacuate all personnel from the Fuel Handling Building.

c. Notify the Fuel Handling Supervisor, then quickly replace the damaged fuel assembly in its storage location.

d. Move the fuel assembly into the RCB and notify the control room to initiate containment isolation.

QUESTION: 031 (1.00)

Which one of the following is the Technical Specification MINIMUM required action to be taken if a Safety Limit is violated?

a. Notify NRC Operations Center AND be in HOT STANDBY within one hour.

b. Notify NRC Regional Office AND be in HOT STANDBY within one hour.

c. Notify NRC Operations Center within one hour and be in HOT STANDBY within six hours.

d. Notify NRC Regional Office AND be in HOT STANDBY within six hours.

QUESTION: 032 (1.00)

Given the following:

-Plant is increasing power from 75% to 100%.
-All systems are in automatic.
-A boron dilution is in progress.

The reactor operator observes a valid "Tref - AUCT HI TAVE DEV" annunciator alarm, and no rod motion. Which one of the following is a possible cause of this alarm and the appropriate action the operator should take?

a. NI power range instruments disagree, place rod control in manual.

b. Control bank D rods are at 228 steps, initiate boration.

c. Th input to Tavg failed low, select alternate temp. channel.

d. Control Rod Drive system urgent failure, place rod control in manual.

QUESTION: 033 (1.00)

Which one of the following situations would require specific ALARA job planning as detailed in STA-657 "ALARA Job Planning/Debriefing"?

	TASK	TIME	DOSE RATE
a.	2 persons replacing a valve gasket;	1 hr.	450 mrem/hr.
b.	2 persons removing a piping spool piece;	2 hr.	200 mrem/hr.
c.	3 persons performing a maintenance on a HVAC filter unit;	3 hr.	100 mrem/hr.
d.	5 persons performing pump maintenance;	4 hr.	50 mrem/hr.

QUESTION: 034 (1.00)

Given the following:

-Controlling Bank Rods are in automatic and withdrawing.
-Turbine load is at 90%
-High Tavg alarm illuminated
-Tavg is increasing

Which one of the following actions should be taken?

a. Commence an orderly shutdown of the Main Turbine.

b. Emergency Borate per ABN-107.

c. Trip the Reactor and go to EOP-0.0A/B.

d. Transfer Rod Control to manual and stabilize Tavg.

QUESTION: 035 (1.00)

Which one of the following situations, occuring on only ONE Reactor Coolant Pump, would require immediately tripping the reactor in accordance with Procedure ABN-101, "Reactor Coolant Pump Trip/Malfunction"?

a. Annunciator "RCP VIBR HIGH" in alarm.

b. Motor winding temperature of 275 degrees F.

c. Motor bearing temperature of 190 degrees F.

d. Seal injection and thermal barrier cooling lost for 1 minute.

QUESTION: 036 (1.00)

Which one of the following is necessary to satisfy the Reactor Coolant Pump (RCP) trip criteria on the foldout page for EOP-0.0A, "Reactor Trip or Safety Injection"?

a. At least ONE (1) Safety Injection (SI) or Centrifugal Charging Pump (CCP) running, AND RCS subcooling less than 20 degrees F without adverse containment.

b. At least ONE (1) SI or CCP pump running, AND RCS subcooling less than 55 degrees F for adverse containment.

c. At least ONE (1) SI or any charging pump running, AND RCS subcooling less than 20 degrees F without adverse containment.

d. At least ONE (1) SI or CCP pump running, AND RCS subcooling less than 45 degrees F for adverse containment.

QUESTION: 037 (1.00)

Which one of the following is a proper method for verifying the POSITION of a valve that is required to be in a LOCKED THROTTLED position?

a. The valve should be moved slightly in the open direction and then back to its original position.

b. The valve should not be moved; the presence of the locking device assures proper position.

c. The valve should be moved slightly in the closed direction and then back to its original position.

d. The valve should not be moved, the position is verified by observing the valve stem position.

QUESTION: 038 (1.00)

Which one of the following individuals or positions is responsible for reviewing a Clearance Report prior to Clearance tag removal and equipment restoration?

a. Clearance preparer

b. Field Support supervisor

c. Operations supervisor

d. Work group supervisor

QUESTION: 039 (1.00)

Which one of the following is considered a Temporary Modification per STA-602, "Temporary Modifications"?

a. Gagging a relief or safety valve.

b. Reinstallation of a normally installed blind flange on a system that is shown on a system P&ID.

c. Installation of tygon tubing on a pump's drain line.

d. Modifications to equipment that is out of service.

QUESTION: 040 (1.00)

Given the following:

-Unit 1 is in Mode 1
-A maintenance worker calls the Control Room on extension 3911 and reports a fire in the "B" diesel-generator building at elevation 844 near the fuel oil day tank.
-The "B" diesel-generator is being run for a normal surveillance and will not respond to a remote shutdown command.

Which one of the following actions is NOT required per STA-724, "Fire Reporting and Response"?

a. Inform the Fire Brigade Leader.

b. Dispatch a Reactor Operator to assist.

c. Refer to CPSES Fire Preplan Manual as needed.

d. Inform the Operations Shift Superviso.·.

QUESTION: 041 (1.00)

Which one of the following represents a NON-INTENT change in a procedure?

a. A change in initial conditions.

b. A format change to a procedure table.

c. A modification to setpoints.

d. A deletion of a hold point.

QUESTION: 042 (1.00)

Which one of the following Technical Specification terms describes the process of making a qualitative assessment of an instrument channel's behavior during operation by visually comparing the indications to independent instrument channels measuring the same parameter?

a. Channel verification.

b. Channel functional test.

c. Channel check.

d. Channel calibration.

QUESTION: 043 (1.00)

Which one of the following portable radio channels should normally be used for Operations communications, assuming that the Fire Brigade is NOT responding to an emergency?

a. Channel 1.

b. Channel 2.

c. Channel 3.

d. Channel 4.

QUESTION: 044 (1.00)

Given the following:

-Both Units are in Mode 1.
-Unit 1 has entered a Limiting Condition for Operation, in accordance with TS 3.4.1.1, as a result of a loss of overcurrent protection and underfrequency tripping capability on the Reactor Coolant Pumps.

Which one of the following has occurred?

a. Low voltage on 125 VDC bus 1ED3.

b. Loss of 125 VDC bus 1D3.

c. Low voltage on 125 VDC bus 1ED2.

d. Loss of 125 VDC bus 1D2.

QUESTION: 045 (1.00)

Given the following:

-Unit 2 is reduced inventory operations.
-The reactor vessel head is on.
-Containment pressure is increasing.

Which one of the following describes the response of the RCS level indication?

a. Indicated level is becoming lower than actual level.

b. Indicated level is becoming greater than actual level.

c. Indicated level will remain the same as actual level.

d. Incicated level is oscillating, above and below actual level.

QUESTION: 046 (1.00)

Given the following:

-Both Units are at 100% power.
-All systems are normally aligned.
-A loss of offsite power occurs.

Which one of the following describes the response of the Containment Air Cooling and Recirculation System cooling units and fans?

a. The cooling units and fans continue to run in the pre-event arrangement.

b. The cooling units and fans are shed and must be manually reset.

c. The cooling units and fans are tripped and then sequenced onto the safety-related electrical buses.

d. Two (2) of the four (4) cooling units and fans are sequenced onto the safety-related electrical buses after all four (4) have been tripped.

QUESTION: 047 (1.00)

Given the following:

-Both units are in Mode 1.
-Unit 1 Motor Driven Auxiliary Feedwater pump 1 has been started for a surveillance and is in recirculation flow.

Which one of the following is the proper motor running current?

a. 10 to 30 amps.

b. 35 to 55 amps.

c. 60 to 80 amps.

d. 85 to 105 amps.

QUESTION: 048 (1.00)

Given the following:

-Unit 1 refueling operations are in progress.
-A fuel assembly has just been raised and the GRIPPER TUBE UP light is illuminated.
-Electrical power to the refueling machine is lost.

Which one of the following actions should be taken?

a. Open breaker 1CB located in the upper left corner of the refueling machine motor control center.

b. Install the manual handwheel on the hoist drive motor and ensure all brake release mechanisms are set for normal operation.

c. Manually locate the fuel assembly over the Emergency Disengage Plate.

d. Promptly close the air receiver outlet isolation valves to conserve the receiver air pressure for gripper operation.

QUESTION: 049 (1.00)

Which one of the following is used to calculate the Tref signal?

a. Turbine first stage impulse pressure.

b. NI normalized power level.

c. Auctioneered high T-hot.

d. Main Steam pressure.

QUESTION: 050 (1.00)

Which one of the following is the reason that all the RCP breakers OPEN on underfrequency on a loss of offsite power?

a. To preserve the RCP flywheel kinetic energy.

b. To reduce the probability of a stress induced RCP sheared shaft accident.

c. To avoid water hammer transients in the RCS induced by rapid RCP speed change.

d. To protect the RCP from damage to the anti-rotation device due to abnormal coastdown.

QUESTION: 051 (1.00)

Which one of the following describes how the Unit 2 CVCS charging pump suction piping is protected from overpressure?

a. A single relief valve is installed in the suction piping of the RHR pumps, cross-connected to the charging pump suction.

b. Two relief valves are installed downstream of the VCT outlet isolation valves, LCV-112B and LCV-112C.

c. A single relief valve is installed in the SI pump suction piping, cross-connected to the charging pump suction.

d. Three relief valves are installed in the charging pump suction piping.

QUESTION: 052 (1.00)

Which one of the following groups of plant parameters are inputs for the Safety Injection Signal?

a. PZR Pressure, Containment Pressure, Steam Line Pressure.

b. RCS Pressure, PZR Level, Steam Line Pressure.

c. PZR Pressure, PZR Level, RCS Temperature.

d. RCS Pressure, Containment Pressure, RCS Temperature.

QUESTION: 053 (1.00)

Which one of the following describes the consequences of resetting an automatic Safety Injection signal?

a. A subsequent Blackout signal will automatically sequence on ALL the ECCS pumps.

b. Any ECCS pumps subsequently stopped after SI reset will get SI sequencer start signal ONLY if a manual SI signal is generated.

c. A subsequent Blackout signal will sequence on ONLY the running ECCS pumps.

d. The ECCS pumps that were auto started by the SI sequencer will return to the stopped condition.

QUESTION: 054 (1.00)

Which one of the following statements regarding the nuclear instrument system is correct?

a. A CHANNEL CALIBRATION may be performed on only ONE of the four nuclear instrumentation system protection channels at a time at power. The redundant protection channels not under test must be capable of performing the trip logic.

b. An interlock between the Level Trip Bypass and Operation Selector Switches on the Intermediate and Power Range drawers requires that the Level Trip Bypass Switch be in the Bypass position before testing can be performed on the associated channel.

c. Rate Channel Test Switch on SUR Panels allows rate test or calibration of all three ranges of Nuclear Power intrumentation, however, only one channel may be in TEST at a time.

d. An ACTUATION LOGIC TEST may be performed on two of the four nuclear instrumentation system protection channels simultaneously at power. The test signals are electronically isolated from actually causing a trip.

QUESTION: 055 (1.00)

Given the following:

-Unit 1 is at 100% power.
-Rod control is in manual.
-A power range channel fails high.

Which one of the following actions will occur?

a. OP N16 ROD STOP & TURB RUNBACK.

b. ANY N16 DEV HI/LO.

c. OP HI FLUX ROD STOP C-2.

d. OT N16 ROD STOP & TURB RUNBACK.

QUESTION: 056 (1.00)

Given the following:

-Unit 2 is being started up.
-Both FW pumps are being placed in service.

Which one of the following best describes the reason for resetting both MFP turbines prior to starting the first MFP?

a. Prevent spurious actuation of the FW Isolation Signal.

b. Ensure HP and LP stop valves remain open for both turbines.

c. Prevent spurious actuation of the AFW Actuation Signal.

d. Prevent windmilling when pumps placed off turning gear.

QUESTION: 057 (1.00)

Which one of the following is the MINIMUM AFW pump and SG configuration designed to remove 100% of the reactor decay heat load following a reactor trip from 102% power?

a. One turbine driven AFW pump, or two motor driven AFW pumps supplying two SG's.

b. One motor driven AFW pump supplying one SG.

c. One turbine driven AFW pump, or two motor driven AFW pumps supplying one SG.

d. One motor driven AFW pump supplying two SG's.

QUESTION: 058 (1.00)

Which one of the following lists the portions of the Rod Position Indication (RPI) and Rod Insertion Limit (RIL) systems that utilize the pulse signal generated by the slave cyclers in the rod control system?

a. Digital Rod Position Indication and Rod Insertion Limit Calculator.

b. Bank Demand Position Indication and Digital Rod Position Indication.

c. Bank Demand Position Indication and Pulse to Analog Converter.

d. Digital Rod Position Indication and Pulse to Analog Converter.

QUESTION: 059 (1.00)

Which one of the following is the reason that a Feedwater Isolation Signal is generated when the RPS senses a reactor trip coincident with Lo-Lo Tave?

a. Limit RCS cooldown to minimize positive reactivity added and maintain shutdown margin.

b. Prevent Main Feed discharge pressure from causing Auxiliary Feed pumps to pump at shut-off head.

c. Limit SG cooldown to minimize thermal stresses in the downcomer region.

d. Limit the mass addition to the containment following a SGTR and RCS depressurization.

QUESTION: 060 (1.00)

Given the following:

-Unit 2 is at 100% power.
-Component Cooling Water surge tank level decreases to 46%, (Side "B").

Which one of the following will occur?

a. Train B safeguards loop isolation valves HV 4513 and HV 4514 auto close.

b. Makeup is auto-initiated on a lo-lo level signal.

c. CCW Surge Tank Empty alarm actuates.

d. CCW Surge Tank Low Level alarm actuates.

QUESTION: 061 (1.00)

Which one of the following would be considered a loss of Containment Integrity as defined in Technical Specification 3.6.1.1?

a. An outer airlock door is stuck open and the inner door is locked shut while in Mode 2.

b. An inner airlock door is opened and the outer door shut for 20 seconds while in Mode 1.

c. The total leakage rate of containment penetrations exceeds Technical Specification limits while in Mode 5.

d. Both airlock doors' equalizing valves are simultaneously open for 45 seconds during a maintenance shift change while in Mode 4.

QUESTION: 062 (1.00)

Given the following:

-Unit 1 is at 100% power.
-A security compromise has neccessitated a Control Room evacuation.
-The Shift Supervisor has ordered a Reactor trip.

Which one of the following should be performed after the Reactor is tripped and prior to evacuating the Control Room?

a. Perform a closure of MSIV's and secure Main Feed.

b. Verify Auxiliary Feed actuation and activate the Control Room Evacuation Alarm.

c. Verify turbine trip and shift charging pump suction to RWST.

d. Deenergize both Rod Drive Motor-Generator sets by taking the motor and generator control switch handles to PULL-OUT.

QUESTION: 063 (1.00)

Which one of the following is an indication of less than adequate core cooling POST-LOCA? Consider each case separately.

a. Pressurizer level indicates 10%.

b. RCS subcooling indicates 20 degrees.

c. Core exit thermocouples indicate 600 degrees F.

d. Two RCS hot leg temperatures indicate 340 degrees F.

QUESTION: 064 (1.00)

Given the following:

- -The RCS has had a stuck open Pressurizer safety valve.
- -The reactor tripped and safety injection initiated.
- -The RCS rapidly depressurized to saturation conditions.
- -Pressurizer level initially dropped and then began to rise rapidly.

Which one of the following characterizes the relationship between pressurizer level and RCS inventory under these conditions?

a. Level is an accurate indication of inventory, because voiding would occur first in the pressurizer due to the high temperature of the pressurizer walls.

b. Level is an accurate indication of inventory, because hydraulic pressure would force any voids to the pressurizer steam space and out the safety valve.

c. Level is NOT an accurate indication of inventory, because RCS voiding may result in a rapidly increasing pressurizer level.

d. Level is NOT an accurate indication of inventory, because at higher temperatures the cold calibrated pressurizer level channels falsely indicate high.

QUESTION: 065 (1.00)

Given the following:

-Unit 1 is in Refueling.
-Core alterations are in progress.
-The audible count rate is lost.

Which one of the following is a required initial operator action?

a. Ensure at least one operable SR Channel prior to continuing with core alterations.

b. Commence emergency borating until cause is known and corrected or RCS boron concentration has increased by 100 ppm.

c. Set the channel selector switch on the audio count rate channel drawer to the unaffected source range channel.

d. Ensure that the channel failure has NOT resulted in a SR FLUX DBLG actuation.

QUESTION: 066 (1.00)

Given the following:
-Unit 1 is at approximately 6% reactor power.
-Power is being increased per IPO-003A, "Power Operations."
-The running Main Feed pump trips.
-Steam Generator level is slowly decreasing.

Which one of the following is the expected response?

a. All three Auxiliary Feed pumps auto-start on trip of both Main Feed pumps.

b. The reactor immediately trips on loss of both Main Feed pumps.

c. The operator starts Auxiliary Feed pumps and manually controls SG levels.

d. The operator manually trips the reactor and enters EOP-0.0, "REACTOR TRIP OR SAFETY INJECTION."

QUESTION: 067 (1.00)

Given the following:

-Unit 2 is at 100% power.
-Main Condenser vacuum falls to 20" Hg.

Which one of the following will NOT result?

a. Main Turbine trip.

b. Standby vacuum pump auto-start.

c. Main Feedwater pump turbine trip.

d. Steam dump to condenser available.

QUESTION: 068 (1.00)

Which one of the following represents the basis for ensuring Letdown is isolated when performing initial operator actions of EOP-0.0A, "REACTOR TRIP OR SAFETY INJECTION"?

a. Prevents thermal shock to the regenerative heat exchanger during a loss of charging.

b. Minimizes boron concentration reduction due to the cooldown and maximizes charging.

c. Prevents a VCT overfill condition due to isolation of VCT charging suction isolation valves.

d. Isolates a potential source of leakage from the RCS via the letdown relief valves.

QUESTION: 069 (1.00)

Given the following:

-Unit 2 is at 100% power.
-One digital rod position indicator is inoperable.

Which one of the following actions is used to determine the position of the non-indicating rod per Technical Specifiction 3.1.3.2, "Position Indication Systems"?

a. Use the incore system with a magnetic proximity probe attachment to detect the rod tip position.

b. Perform current measurement of coils on the CRDM.

c. Use incore detectors to perform a flux map of the core.

d. Monitor and analyze QPTR change.

QUESTION: 070 (1.00)

Given the following:

-Unit 2 reactor power is 13%.
-SG A level is 78%.
-SG B level is 82%.
-SG C level is 76%.
-SG D level is 75%.

Which one of the following lists AUTOMATIC actions that should result from the above situation?

a. Turbine trip, Reactor trip, Feed Pump trip.

b. Turbine trip, Feedwater Isolation, Feed Pump trip.

c. Reactor trip, Feedwater Isolation, Feed Pump trip.

d. Turbine trip, Reactor Trip, Feedwater Isolation.

QUESTION: 071 (1.00)

Which one of the following components is the largest source of radioactive gas sent to the Gaseous Waste Processing System (GWPS) during normal full load operations?

a. Volume Control Tank.

b. Boron Recycle Evaporator.

c. Reactor Head Degassing Decay Tank.

d. Reactor Coolant Drain Tank.

QUESTION: 072 (1.00)

Which one of the following events would result in a containment AREA radiation monitor alarm?

a. Main Steam Line Break inside Containment.

b. Steam Generator Tube Rupture.

c. Pressurizer PORV seat leakage.

d. RCS leak at the Incore Seal Table.

QUESTION: 073 (1.00)

Which one of the following is required to be operable by the Offsite Dose Calculation Manual?

a. The High Range Containment Area Radiation Monitor.

b. The Containment Sump Level and Flow Monitoring System.

c. The Liquid Radwaste Effluent Line Radioacitvity Monitor.

d. Control Room Radiation Monitoring Instrumentation.

QUESTION: 074 (1.00)

Given the following:

-Loop 1, 3, and 4 Tave meters indicate 590 degrees F.
-Loop 2 Tave meter indicates off scale HIGH.
-Rapid control rod insertion.
-Pressurizer reference level increase.
-Charging flow increase.

Which one of the following is the cause of these indications?

a. Loop 2 Tcold failed HIGH.

b. Loop 2 Tcold failed LOW.

c. Loop 2 N-16 failed LOW.

d. Loop 2 Thot failed HIGH.

QUESTION: 075 (1.00)

Which one of the following is an input to the Low Temperature Overpressure actuation logic for PCV-455A?

a. Auctioneered-high wide range Thot.

b. RCS pressure transmitter PT-405.

c. Auctioneered-high wide range Tcold.

d. RCS pressure transmitter PT-403.

QUESTION: 076 (1.00)

Given the following:

- -All Pressurizer heaters were on IN AUTO prior to actual Pressurizer level dropping below the heater low-level cutout setpoint.
- -Pressurizer level is restored to 20%.
- -Assume no operator action other than refilling the Pressurizer.
- -Assume no Safety Injection or LOOP signals present.
- -Assume Pressurizer pressure is 2200 psig.

Which one of the following describes how the heaters will respond?

a. Variable and backup heaters will come on AUTOMATICALLY.

b. Variable and backup heaters will remain OFF.

c. Variable heaters ONLY will come on AUTOMATICALLY.

d. Backup heaters ONLY will come on AUTOMATICALLY.

QUESTION: 077 (1.00)

Given the following:

-Unit 2 is at 99% reactor power.
-Pressuizer level is 68%.
-Normal letdown flow in service (65 gpm).
-A charging line leak develops near the charging line containment penetration that diverts ALL charging flow from the line.
-Normal seal injection is maintained.
-Assume NO operator action is taken.

Which one of the following statements describes the FINAL Pressurizer response?

a. Decreasing Pressurizer level to 17%, Letdown isolates and Pressurizer level increases leading to a HIGH level trip.

b. Pressurizer pressure increases to the HIGH pressure trip setpoint following loss of Pressurizer spray and the auto-start of Pressurizer backup heaters due to level deviation.

c. Stable lower Pressurizer level following reduction of Letdown flow, due to steam flashing in the Regenerative Heat Exchanger.

d. Stable higher Pressurizer pressure due to heating of the water in the Pressurizer, a result of losing the cooling effect of Charging flow.

QUESTION: 078 (1.00)

Which one of the following is the reason for maintaining a MINIMUM pressure of 15 psig in the VCT during normal at power operation?

a. To ensure adequate hydrogen concentration in the RCS coolant.

b. To ensure an effective backpressure on the RCP #1 seal and provide proper lubrication of the #2 seal.

c. To provide adequate CCP suction pressure during multiple CCP starts.
a multiple CCP start.

d. To provide adequate CCP recirculation backpressure during normal operations.

QUESTION: 079 (1.00)

Given the following:

-Unit 1 is at 100% power.
-A surveillance is in progress to test the Reactor Trip Breakers.
-An operator calls the control room and reports that he found ALL Reactor Trip and Bypass Breakers RACKED IN and CLOSED.

Which one of the following actions should be taken?

a. Immediately OPEN one Trip or Bypass Breaker and continue with the surveillance.

b. Within 1 (ONE) hour, rack out the bypass breakers and continue with the surveillance.

c. Immediately OPEN one Trip and one Bypass Breaker on each train in a manner that will not cause a reactor trip.

d. Within 1 (ONE) hour, initiate actions to eventually bring the Unit to Cold Shutdown.

QUESTION: 080 (1.00)

Which one of the following will cause the Overtemperature N-16 reactor trip SETPOINT to increase?

a. Tcold increases.

b. Pressurizer pressure increases.

c. Reactor power increases.

d. Tavg increases.

QUESTION: 081 (1.00)

Which one of the following sets of conditions confirm that natural circulation is occurring in the RCS 20 minutes after a trip from 60% Reactor Thermal Power at End of Life?

a. Thot stable, CETs increasing, SG pressure stable at 1100 psig, Tcold at 532 degrees, subcooling margin at 10 degrees.

b. Thot decreasing, CETs decreasing, SG pressure increasing at 1100 psig, Tcold at 556 degrees, subcooling margin at 5 degrees.

c. Thot stable, CETs stable, SG pressure stable at 1100 psig, Tcold at 556 degrees, subcooling margin at 30 degrees.

d. Thot increasing, CETs increasing, SG pressure increasing at 1200 psig, Tcold at 567 degrees, subcooling margin at 30 degrees.

QUESTION: 082 (1.00)

Which one of the following sets of parameters affects vortexing in the RHR suction piping during reduced inventory operations?

a. RHR flow rate and RCS level.

b. RHR flow rate and RCS pressure.

c. Number of RHR pumps running and RCS pressure.

d. Number of RHR pumps running and RCS level.

QUESTION: 083 (1.00)

Which one of the following is the reason for the order that the valve positions are checked in Step 3, "Check If RCS Is Isolated" of ECA-0.0A, "Loss of All AC Power"?

a. They are listed according to control board location.

b. Those most likely to fail in a loss of AC power are listed first.

c. Those most rarely manipulated are listed last.

d. They are listed according to capacity and potential for inventory loss.

QUESTION: 084 (1.00)

Given the following:

-Unit 1 is at 100% power.
-Pressurizer pressure selector switch is in the PT-455/456 position.
-Pressurizer pressure control is in automatic.

Which one of the following describes the Pressurizer PORVs response if Pressurizer pressure channel 455 fails HIGH?

a. PORV PCV-455A will not close if RCS pressure decreases below 2185 psig.

b. PORV PCV-456 will not close until RCS pressure decreases below 2185 psig.

c. PORV PCV-455A will open.

d. PORV PCV-456 will open.

QUESTION: 085 (1.00)

Given the following:

-Unit 1 is at 100% power.
-All control systems are in their normal power operation alignment.

Which one of the following results from Pressurizer Level channel 460 failing LOW?

a. Charging flow control valve FCV-121 OPENS.

b. All pressurizer heaters deenergize.

c. Letdown isolation valves LCV-459 & 460 CLOSE.

d. Actual pressurizer level DECREASES.

QUESTION: 086 (1.00)

Given the following:

- -Unit 2 has tripped from 100% power.
- -Safety Injection was initiated due to rapidly decreasing pressurizer pressure.
- -The following plant conditions were noted after the trip:
  - -Pressurizer level 60% and increasing.
  - -RCS pressure 1725 psig and decreasing.
  - -Containment pressure 2 psig and increasing.
  - -Containment radiation 0.5R/hr and increasing.
  - -Containment sump levels increasing.

Which one of the following events has occurred?

a. Main Steam line break inside containment.

b. RCS cold leg break.

c. Steam Generator tube rupture.

d. Pressurizer vapor space LOCA.

QUESTION: 087 (1.00)

Given the following:

-Unit 1 is operating at 100% power.
-All controls are in the normal power operation lineup.
-Pressurizer level is Decreasing.
-VCT level is Increasing.
-Seal water Lo Flow alarm is lit.
-Regen HX Letdown Hi Temp alarm is lit.
-Letdown HX Outlet Hi Temp alarm is lit.
-Charging Flow Hi/Lo alarm is lit.

Which one of the following explains the given conditions?

a. Pressurizer PORV failed open.

b. Small break LOCA.

c. Loss of Charging.

d. Letdown Isolation.

QUESTION: 088 (1.00)

Which one of the following determines the temperature at which the RCS cooldown is terminated following a Steam Generator tube rupture when using EOP-3.0A, "Steam Generator Tube Rupture"?

a. RCS pressure.

b. Maximum RCS temperature for RHR initiation.

c. RCS subcooling.

d. Ruptured SG pressure.

QUESTION: 089 (1.00)

Which one of the following is correct regarding operation of a 480V switchgear breaker that has been opened locally following a loss of DC control power?

a. Breaker can be closed remotely one time if the breaker is in the TEST position.

b. Breaker cannot be closed until the breaker is reset by removing and then replacing the fuse block.

c. Breaker can be closed one time locally using the switch on the cubicle door.

d. Breaker cannot be closed again until the closing springs are manually charged.

QUESTION: 090 (1.00)

Which one of the following is the MINIMUM necessary to verify that the turbine has tripped following a reactor trip per EOP-0.0A, "Reactor Trip or Safety Injection"?

	Turbine Stop Valves	Turbine Control Valves
a.	Open	Open
b.	Closed	Open
c.	Open	Closed
d.	Closed	Closed

QUESTION: 091 (1.00)

Which one of the following types of smoke/fire detectors is used to detect a fire in the carbon filters of the HVAC units throughout the plant?

a. Fusable Link detector.

b. Ionization smoke detector.

c. Ultraviolet flame detector.

d. Thermistor heat detector.

QUESTION: 092 (1.00)

Given the following:

-Unit 2 is at 100% power.
-Containment pressure is 1.5 psig.

Which one of the following actions must be taken within 1 hour according to Technical Specification 3.6.1.4, "Containment Systems - Internal Pressure"?

a. Take action to place the Unit in a Mode where the Specification does not apply.

b. Restore pressure to within limits.

c. Initiate a containment normal purge.

d. Perform an RCS leak rate calculation.

QUESTION: 093 (1.00)

Given the following:

-Unit 2 has tripped from 100% power.
-All systems are operable and in automatic.
-Actual Tavg is 20 degrees F greater than no-load Tavg.

Which one of the following describes the response of the steam dump valves?

	Bank 1	Bank 2	Bank 3	Bank 4
a.	Full open	Full open	Full open	Modulating
b.	Full open	Full open	Modulating	Closed
c.	Full open	Full open	Closed	Closed
d.	Modulating	Closed	Closed	Closed

QUESTION: 094 (1.00)

Given the following:

-Unit 2 is at 33% power.
-Power escalation is in progress.
-Control rods are in MANUAL.
-After a manual control rod withdrawal of several steps, the rods continue outward when the Rod Control IN-HOLD-OUT lever is returned to the neutral position.

Which one of the following actions should be taken?

a. Place the Rod Bank Selector Switch in AUTO and check for continued rod motion.

b. Trip the Unit and enter EOP-0.0A, "Reactor Trip or Safety Injection."

c. Check for failed instruments and select or block appropriate instrument inputs.

d. Hold the IN-HOLD-OUT lever to the IN position and check for continued rod motion.

QUESTION: 095 (1.00)

Which one of the following establishes the initial conditions for the accident analyses addressed in the FSAR?

a. Technical Specifications.

b. Site specific Probabilistic Risk Analysis Report.

c. Westinghouse Owners' Group Emergency Response Guidelines.

d. Westinghouse Transient and Accident Analysis Report.

QUESTION: 096 (1.00)

Which one of the following operator actions should be attempted first to mitigate the consequences of inadequate core cooling if ECCS flow is not available?

a. Open Pressurizer PORVs.

b. Secure all RCPs.

c. Open Head Vents.

d. Depressurize the SGs.

QUESTION: 097 (1.00)

Given the following:

-During Critical Safety Function Status Tree monitoring two (2) functions have Orange paths.
-One (1) of the Orange functions is Heat Sink.

Which one of the following functions would take precedence over Heat Sink?

a. Inventory.

b. Containment.

c. Integrity.

d. Core Cooling.

QUESTION: 098 (1.00)

Given the following:

-FRP-0.1A, "RESPONSE TO IMMINENT PRESSURIZED THERMAL SHOCK CONDITION" has been entered.

Which one of the following statements reflects the conditions for securing SI during the performance of FRP-0.1A?

a. SI termination criteria is LESS conservative than the EOP-0.0A criteria. If SI is terminated a RCP is started.

b. SI termination criteria is LESS conservative than the EOP-0.0A criteria. If SI is NOT terminated a RCP is started.

c. SI termination criteria is MORE conservative than the EOP-0.0A criteria. If SI is terminated a RCP is started.

d. SI termination criteria is MORE conservative than the EOP-0.0A criteria. If SI is NOT terminated a RCP is started.

QUESTION: 099 (1.00)

Given the following:

-Unit 1 has tripped from 100% power due to a loss of coolant accident (LOCA).
-A loss of offsite power (LOOP) has also occurred.
-Containment pressure is 15 psig.
-Core Exit Thermocouples indicate 330 degrees F.
-RCS pressure is 200 psig.
-RWST level is 50%.
-Emergency Diesel Generator #1 has failed to start.
-NO flow is indicated for running Residual Heat Removal pump #2.

Which one of the following is the reason that RHR pump #2 has NO flow indication?

a. RCS pressure is above the RHR shutoff head.

b. RHR HX 1-02 bypass valve (FCV-619) is closed.

c. SI cross-connect valves 8716A/B are OPEN.

d. RHR pump Containment Sump Suction valves have failed to open automatically on low RWST level.

QUESTION: 100 (1.00)

Given the following:
-Unit 1 was at 100% power when it tripped due to a LOCA.
-Containment pressure is now 16 psig and increasing.
-Hydrogen concentration is 3%.
-Hydrogen Recombiners are being placed in service in accordance with FRZ-0.1A, "Response to High Containment Pressure."

Which one of the following indicates that recombination is occurring after having placed the Hydrogen Recombiners in service?

a. Containment pressure decreases after Hydrogen Recombiners are placed in service.

b. Hydrogen Recombiner power is immediately adjusted to 40 kw.

c. Hydrogen Recombiner thermocouple temperature indicates 1175 degrees F after power adjustments have been made.

d. A ramp change in Hydrogen Recombiner sheath temperature is observed.

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

ANSWER: 001 (1.00)

c.

REFERENCE:

ABN-703, ATTACHMENT 7

KA 015000A403 [3.8/3.9]

015000A403 ..(KA's)

ANSWER: 002 (1.00)

b

REFERENCE:

CPSES LOA1.RLS.EC1.LP pgs 18-26

015000K407 015000A202 015000A303 ..(KA's)

ANSWER: 003 (1.00)

d

REFERENCE:

CPSES LOA1.RLS.CS1.LN pg 12

004000K604 ..(KA's)

ANSWER: 004 (1.00)

c

REFERENCE:

CPSES LOA1.RLS.IC2.LN, FIG. 2

017000K102 ..(KA's)

ANSWER: 005 (1.00)

b

REFERENCE:

CPSES ABN-104
005000G015 ..(KA's)

ANSWER: 006 (1.00)

d

REFERENCE:

CPSES LOA1.RLS.CL1.LN

022000A101 ..(KA's)

ANSWER: 007 (1.00)

a.

REFERENCE:

Lesson Notes LOA1.RLS.EC1.Ln p.11 to 13; Enabling Obj. 9

015000K604 ..(KA's)

ANSWER: 008 (1.00)

a.

REFERENCE:

Lesson Plan LO21.RLS.CS1.LP p.25; Enabling Obj. 4

006030K601 ..(KA's)

ANSWER: 009 (1.00)

b.

REFERENCE:

ICD MI-2229, SHEETS 3 AND 6

000026K302 ..(KA's)

ANSWER: 010 (1.00)

c.

REFERENCE:

CPSES STA-620, section 6.1.5, page 4., Rev 9
LO21.RLS.XA1.OB129.
K/A [3.1/3.5]

194001K105 ..(KA's)

ANSWER: 011 (1.00)

b.

REFERENCE:

CPSES OPT-447A, section 8.4, page 16.
LO21.RLS.RP1.OB101.
K/A [3.7/4.2]

001000K603 ..(KA's)

ANSWER: 012 (1.00)

a.

REFERENCE:

CPSES LO21.RLS.CS1.LP, section III.D.1.j, page 20.
CPSES LO21.RLS.CS2.LP, section III.B.1 & 2, pages
LO21.RLS.CS1.OB105.
LO21.RLS.CS2.OB102.a.
K/A [3.3/3.2]

004010A305 ..(KA's)

ANSWER: 013 (1.00)

a.

REFERENCE:

CPSES IPO-002A, sections 5.2.8 & 5.2.13, pages 21 & 22.
CPSES LO Exam Bank, Q2738.
LO21.SC5.IR1.OB103
K/A [3.7/3.7]

015000A103 ..(KA's)

ANSWER: 014 (1.00)

d.

REFERENCE:

LO21.RLS.RP1.LP, section III.J.1.r, page 30.
LO21.RLS.ES3.LP, section III.B.8, pages 13-14.
LO21.RLS.RP1.OB102.
LO21.RLS.ES3.OB101.
K/A [3.6/3.9]

012000A202 ..(KA's)

ANSWER: 015 (1.00)

b.

REFERENCE:

CPSES LO21.RLS.RH1.LP, section III.B.14.b, page 17.
LO21.RLS.RH1.OB103.
K/A [3.2/3.5]

006020K403 ..(KA's)

ANSWER: 016 (1.00)

b.

REFERENCE:

CPSES LO21.RLS.CC1.LP, section III.B.3, page 14-15.
LO21.RLS.CC1.OB102.b(1).
K/A [3.1/3.3]

008000K401 ..(KA's)

ANSWER: 017 (1.00)

a.

REFERENCE:

CPSES LO21.RLS.CC1.LP, section III.B.4.b, page 15.
LO21.RLS.CC1.OB102.b(3).
K/A [2.9/3.0]

008030K101 ..(KA's)

ANSWER: 018 (1.00)

c.

REFERENCE:

CPSES dwg. M1-0255, SHEET 2, CP-8
K/A 000024K201 [2.7/2.7]

000024K201 ..(KA's)

ANSWER: 019 (1.00)

c.

REFERENCE:

CP: OP51.SYS.RI1.LN
CP: FSAR 7.7.1.3
KA: 000007G004 (2.8/3.9)
000007G004 ..(KA's)

ANSWER: 020 (1.00)

a.

REFERENCE:

CP: PROCEDURE EOS-1.2A, REV. 6, PAGE 9 OF 49.
KA: 000011A204 (3.7/3.9)
000011A204 ..(KA's)

ANSWER: 021 (1.00)

b.

REFERENCE:

CP: PROCEDURE STA-628, REV. 2.
KA: 194001K114 (3.3/3.6)
194001K114 ..(KA's)

ANSWER: 022 (1.00)

c.

REFERENCE:

CP: PROCEDURE STA-727, REV. 1.
CP: TECHNICAL SPECIFICATION 6.2.2.e.
KA: 194001A103 (2.5/3.4)
194001A103 ..(KA's)

ANSWER: 023 (1.00)

d.

REFERENCE:

CP: LO21.RLS.AF1.LP, REV. 12/4/92.
KA: 061000K402 (4.5/4.6)
061000K402 ..(KA's)

ANSWER: 024 (1.00)

c.

REFERENCE:

CP: LO21.RLS.IC2.LP, REV. 12/3/92.
KA: 006000K618 (3.5/3.9)
006000K618 ..(KA's)

ANSWER: 025 (1.00)

c.

REFERENCE:

CP: LO21.RLS.RP1.LP, REV. 11-02-92.
KA: 012000K501 (3.3/3.8)
012000K501 ..(KA's)

ANSWER: 026 (1.00)

d.

REFERENCE:

CP: PROCEDURE ABN-501, REV. 3.
KA: 076000A201 (3.5/3.7)
076000A201 ..(KA's)

ANSWER: 027 (1.00)

a.

REFERENCE:

CP: PROCEDURE ABN-101, REV. 4.
KA: 000015A108 (3.0/2.9)
000015A108 ..(KA's)

ANSWER: 028 (1.00)

d. [or a]

REFERENCE:

CP: PROCEDURE ABN-107, REV. 2.
CP: TECHNICAL SPECIFICATIONS 3/4.1.2.
KA: 000024G008 (3.3/3.8)
000024G008 ..(KA's)

ANSWER: 029 (1.00)

a.

REFERENCE:

CP: LO21.RLS.PP1.LP, REV. 11/25/92.
KA: 002000K508 (3.4/3/9)
002000K508 ..(KA's)

ANSWER: 030 (1.00)

b. [or c]

REFERENCE:

CP: PROCEDURE ABN-908, REV. 2.
KA: 000036G011 (3.5/3.9)
000036G011 ..(KA's)

ANSWER: 031 (1.00)

a.

REFERENCE:

CP: TECHNICAL SPECIFICATIONS 2.1 and 6.7; pages 2-1 and 6-16
KA: 194001A105 (3.6/3.8)
194001A105 ..(KA's)

ANSWER: 032 (1.00)

d.

REFERENCE:

CP: PROCEDURE ABN-704, REV. 4.
CP: PROCEDURE ABN-712, REV. 6.
CP: LOAJ RLS.CR1.CB115
KA: 000005A101 (3.6/3.4)
000005A101 ..(KA's)

ANSWER: 033 (1.00)

d.

REFERENCE:

CP: STA-657
CP: LO21.RLS.XA1.OB100
KA: 194001K104 (3.3/3.5)
194001K104 ..(KA's)

ANSWER: 034 (1.00)

d.

REFERENCE:

CP: PROCEDURE ABN-712, REV. 6.
CP: LOA1.RLS.CR1.OB116
KA: 000001K301 (3.3/3.6)
000001K301 ..(KA's)

ANSWER: 035 (1.00)

d.

REFERENCE:

CP: PROCEDURE ABN-101, REV. 4.
CP: LO21.SA5.SY5.LP
KA: 000015A209 (3.4/3.5)
000015A209 ..(KA's)

ANSWER: 036 (1.00)

b.

REFERENCE:

CP: PROCEDURE EOP-0.0A, REV. 6, ATTACHMENT 1.
KA: 000007A104 (3.6/3.7)
000007A104 ..(KA's)

ANSWER: 037 (1.00)

d. [or b]

REFERENCE:

CP: PROCEDURE STA-694, REV. 1.
KA: 194001K101 (3.6/3.7)
194001K101 ..(KA's)

ANSWER: 038 (1.00)

c.

REFERENCE:

CP: PROCEDURE STA-605, REV. 12.
KA: 194001K102 (3.7/4.1)
194001K102 ..(KA's)

ANSWER: 039 (1.00)

a.

REFERENCE:

CP: PROCEDURE STA-602, REV. 11.
KA: 194001A106
194001A106 ..(KA's)

ANSWER: 040 (1.00)

b.

REFERENCE:

CP: PROCEDURE STA-724, REV. 1.
KA: 194001K116 (3.5/4.2)
194001K116 ..(KA's)

ANSWER: 041 (1.00)

b.

REFERENCE:

CP: PROCEDURE STA-205, REV. 16.
KA: 194001A101 (3.3/3.4)
194001A101 ..(KA's)

ANSWER: 042 (1.00)

c.

REFERENCE:

CP: TECHNICAL SPECIFICATION 1.6.
KA: 194001A113 (4.3/4.1)
194001A113 ..(KA's)

ANSWER: 043 (1.00)

c.

REFERENCE:

CP: PROCEDURE ODA-102, REV. 14.
KA: 194001A110 (2.9/3.9)
194001A110 ..(KA's)

ANSWER: 044 (1.00)

b.

REFERENCE:

CP: OP51.SYS.DC1.LN, REV. 10-30-92.
CP: TECHNICAL SPECIFICATION 3.4.1.1.
KA: 063000K302 (3.5/3.7)
063000K302 ..(KA's)

ANSWER: 045 (1.00)

c. [or a]

REFERENCE:

CP: IPO-010, REV 5, M2-250
KA: 002000K107 (3.5/3.7)
002000K107 ..(KA's)

ANSWER: 046 (1.00)

c.

REFERENCE:

CP: OP51.SYS.CL1.LN, REV. 11-10-92.
CP: LO21.RLS.CL1, REV. 11-10-92.
KA: 022000A301 (4.1/4.3)
022000A301 ..(KA's)

ANSWER: 047 (1.00)

b.

REFERENCE:

CP: PROCEDURE SOP-304A, REV. 9.
KA: 061000A301 (4.2/4.2)
061000A301 ..(KA's)

ANSWER: 048 (1.00)

d

REFERENCE:

CP: PROCEDURE RFO- .., REV. 6.
KA: 034000G014
034000G014 ..(KA's)

ANSWER: 049 (1.00)

a.

REFERENCE:

CP: OP51.SYS.SD1, REV. 1-21-93.
KA: 001000K543 (3.2/3.4)
001000K543 ..(KA's)

ANSWER: 050 (1.00)

a.

REFERENCE:

CP: OP51.SYS.RC1, REV. 8-25-92.
KA: 003000G007 (3.2/3.3)
003000G007 ..(KA's)

ANSWER: 051 (1.00)

d.

REFERENCE:

CP: LO21.RLS.CS1.LP, REV. 10/2/92.
KA: 004010K403 (3.1/3.6)
004010K403 ..(KA's)

ANSWER: 052 (1.00)

a.

REFERENCE:

CP: LO21.RLS.ES1.LP, REV. 11/12/92.
KA: 013000A301 (3.7/3.9)
013000A301 ..(KA's)

ANSWER: 053 (1.00)

b.

REFERENCE:

CP: LO21.RLS.ES1.LP, REV. 11/12/92.
KA: 013000K118 (3.7/4.1)
013000K118 ..(KA's)

ANSWER: 054 (1.00)

a.

REFERENCE:

CP: LO21.RLS.EC1.LP, REV. 12-15-92.
CP: TECHNICAL SPECIFICATIONS 3.3.1 & 1.5.
KA: 015000K301 (3.9/4.3)
015000K301 ..(KA's)

ANSWER: 055 (1.00)

c.

REFERENCE:

CP: PROCEDURE ABN-703, REV. 4.
KA: 015000K402 (3.7/3.9)
015000K402 ..(KA's)

ANSWER: 056 (1.00)

c.

REFERENCE:

CP: PROCEDURE SOP-302A, REV. 6.
KA: 059000K102 (3.4/3.4)
059000K102 ..(KA's)

ANSWER: 057 (1.00)

d.

REFERENCE:

CP: LO21.RLS.AF1.LP, REV. 12/4/92.
KA: 061000K502 (3.2/3.6)
061000K502 ..(KA's)

ANSWER: 058 (1.00)

c.

REFERENCE:

CP: LO21.RLS.RI1.LP, REV. 11-19-92.
KA: 014000K101 (3.2/3.6)
014000K101 ..(KA's)

ANSWER: 059 (1.00)

a.

REFERENCE:

CP: LO21.RLS.MF1, REV. 11/20/92.
KA: 035010K501 (3.4/3.9)
035010K501 ..(KA's)

ANSWER: 060 (1.00)

d.

REFERENCE:

CP: LO21.RLS.CC1.LP, REV. 8/27/92.
KA: 008000A202 (3.2/3.5)
008000A202 ..(KA's)

ANSWER: 061 (1.00)

d.

REFERENCE:

CP: PROCEDURE SOP-907A, REV. 5.
KA: 103000K102 (3.9/4.1)
103000K102 ..(KA's)

ANSWER: 062 (1.00)

c.

REFERENCE:

CP: PROCEDURE ABN-905A, REV. 5.
KA: 000068K318 (4.2/4.5)
000068K318 ..(KA's)

ANSWER: 063 (1.00)

b.

REFERENCE:

CP: PROCEDURE EOP-1.0A, REV. 6.
KA: 000074A201 (4.6/4.9)
000074A201 ..(KA's)

ANSWER: 064 (1.00)

c.

REFERENCE:

CP: PROCEDURE EOS-1.2A, REV. 6.
KA: 000008K301 (3.7/4.4)
000008K301 ..(KA's)

ANSWER: 065 (1.00)

d.

REFERENCE:

CP: PROCEDURE ABN-701, REV. 4.
KA: 000032G010 (2.9/3.1)
000032G010 ..(KA's)

ANSWER: 066 (1.00)

c.

REFERENCE:

CP: PROCEDURE ABN-302, REV. 3.
KA: 000054A203 (4.1/4.2)
000054A203 ..(KA's)

ANSWER: 067 (1.00)

c.

REFERENCE:

CP: PROCEDURE ABN-304, REV. 3.
KA: 000051K301 (2.8/3.1)
000051K301 ..(KA's)

ANSWER: 068 (1.00)

d.

REFERENCE:

CP: PROCEDURE EOP-0.0A, REV. 6.
KA: 000007K301 (4.0/4.6)
000007K301 ..(KA's)

ANSWER: 069 (1.00)

c.

REFERENCE:

CP: TECHNICAL SPECIFICATION 3.1.3.2.
KA: 014000G005 (3.1/3.7)
014000G005 ..(KA's)

ANSWER: 070 (1.00)

b.

REFERENCE:

CP: LO21.RLS.SN1.LP, REV. 12/01/92.
KA: 059000A412 (3.4/3.5)
059000A412 ..(KA's)

ANSWER: 071 (1.00)

a.

REFERENCE:

CP: LO21.RLS.GH1.LP, REV. 12/24/92.
KA: 071000A405 (2.6/2.6)
071000A405 ..(KA's)

ANSWER: 072 (1.00)

d.

REFERENCE:

CP: OP51.SYS.RM1, REV. 11/24/92.
KA: 072000A101 (3.4/3.6)
072000A101 ..(KA's)

ANSWER: 073 (1.00)

c.

REFERENCE:

CP: OP51.SYS.RM1, REV. 11/24/92.
KA: 073000K301 (3.6/4.2)
073000K301 ..(KA's)

ANSWER: 074 (1.00)

a.

REFERENCE:

CP: OP51.SYS.NT1.LN, REV. 11/18/92.
KA: 002020K509 (3.6/3.9)
002020K509 ..(KA's)

ANSWER: 075 (1.00)

b.

REFERENCE:

CP: LO21.RLS.PP2.LP, REV. 11/19/92.
KA: 010000K403 (3.8/4.1)
010000K403 ..(KA's)

ANSWER: 076 (1.00)

d.

REFERENCE:

CP: LO21.RLS.PP1.LP, REV. 11/25/92.
KA: 011000K401 (3.3/3.7)
011000K401 ..(KA's)

ANSWER: 077 (1.00)

a.

REFERENCE:

CP: LO21.RLS.PP1.LP, REV. 11/25/92.
KA: 011000A102 (3.3/3.5)
011000A102 ..(KA's)

ANSWER: 078 (1.00)

b.

REFERENCE:

CP: LO21.RLS.RC1.LP, REV. 2.13.92.
KA: 004000K304 (3.7/3.9)
004000K304 ..(KA's)

ANSWER: 079 (1.00)

d.

REFERENCE:

CP: TECHNICAL SPECIFICATIONS 3/4.3.2 & 3.0.3.
KA: 012000A206 (4.4/4.7)
012000A206 ..(KA's)

ANSWER: 080 (1.00)

b.

REFERENCE:

CP: OP51.SYS.NT1.LN, REV. 11/18/92.
KA: 012000K611 (2.9/2.9)
012000K611 ..(KA's)

ANSWER: 081 (1.00)

c.

REFERENCE:

CP: PROCEDURE EOS-1.2A, REV. 6.
KA: 000017K101 (4.4/4.6)
000017K101 ..(KA's)

ANSWER: 082 (1.00)

a.

REFERENCE:

CP: PROCEDURE IPO-010A, REV. 5.
KA: 000025A102 (3.8/3.9)
000025A102 ..(KA's)

ANSWER: 083 (1.00)

d.

REFERENCE:

CP: PROCEDURE ECA-0.0A, REV. 6
KA: 000055K302 (4.3/4.6)
000055K302 ..(KA's)

ANSWER: 084 (1.00)

c.

REFERENCE:

CP: PROCEDURE ABN-705, REV. 3.
KA: 000027A101 (4.0/3.9)
000027A101 ..(KA's)

ANSWER: 085 (1.00)

b.

REFERENCE:

CP: PROCEDURE ABN-706, REV. 3.
KA: 000028A212 (3.1/3.5)
000028A212 ..(KA's)

ANSWER: 086 (1.00)

d.

REFERENCE:

CP: LO21.MCO.TAA, REV. 10/21/92.
KA: 000008A220 (3.4/3.6)
000008A220 ..(KA's)

ANSWER: 087 (1.00)

c.

REFERENCE:

CP: LO21.RLS.CS1, REV. 10/2/92.
KA: 000022A201 (3.2/3.8)
000022A201 ..(KA's)

ANSWER: 088 (1.00)

d.

REFERENCE:

CP: PROCEDURE EOP-3.0A, REV. 6.
KA: 000038A136 (4.3/4.5)
000038A136 ..(KA's)

ANSWER: 089 (1.00)

d.

REFERENCE:

CP: PROCEDURE SOP-604A, REV. 7.
KA: 000058G006 (3.4/3.8)
000058G006 ..(KA's)

ANSWER: 090 (1.00)

b.

REFERENCE:

CP: PROCEDURE EOP-0.0A, REV. 6.
KA: 000007G010 (4.2/4.1)
000007G010 ..(KA's)

ANSWER: 091 (1.00)

d.

REFERENCE:

CP: LO21.RLS.FP1.LP, REV. 12/4/92.
KA: 086000K604 (2.6/2.9)
086000K604 ..(KA's)

ANSWER: 092 (1.00)

b.

REFERENCE:

CP: TECHNICAL SPECIFICATION 3.6.1.4.
KA: 103000G005 (3.3/4.1)
103000G005 ..(KA's)

ANSWER: 093 (1.00)

b.

REFERENCE:

CP: OP51.SYS.SD1, REV. 1/21/93.
KA: 041020K105 (3.5/3.6)
041020K105 ..(KA's)

ANSWER: 094 (1.00)

b.

REFERENCE:

CP: ABN-712
KA: 000001G010 (3.9/4.0)
000001G010 ..(KA's)

ANSWER: 095 (1.00)

a.

REFERENCE:

CP: LO21.MCO.MI2.LP, REV. 10/8/92.
KA: 006000G001 (4.1/4.3)
006000G001 ..(KA's)

ANSWER: 096 (1.00)

d.

REFERENCE:

CP: LO21.MCO.MI3.LP, REV. 10/9/92.
KA: 000074K103
000074K103 ..(KA's)

ANSWER: 097 (1.00)

d.

REFERENCE:

CP: LO21.RLS.XG1, REV. 12/11/92.
KA: 000011G012 (4.0/4.1)
000011G012 ..(KA's)

ANSWER: 098 (1.00)

b.

REFFRENCE:

CP: PROCEDURE FRP-0.1A, REV. 6.
KA: 000040K304 (4.5/4.7)
000040K304 ..(KA's)

ANSWER: 099 (1.00)

a.

REFERENCE:

CP: LO21.RLS.SI1.LP, REV. 10/6/92.
KA: 006020K603 (2.8/3.1)
006020K603 ..(KA's)

ANSWER: 100 (1.00)

d.

REFERENCE:

CP: PROCEDURE SOP-206A, REV. 6.
KA: 028000A401 (4.0/4.0)

028000A401 ..(KA's)

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

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

CANDIDATE'S NAME: _____

FACILITY: Comanche Peak 1

REACTOR TYPE: PWR-WEC4

DATE ADMINISTERED: 93/11/15

INSTRUCTIONS TO CANDIDATE:

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

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

FINAL GRADE

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

_____
Candidate's Signature

NRC RULES AND GUIDELINES FOR LICENSE EXAMINATIONS

During the administration of this examination the following rules apply:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

QUESTION: 001 (1.00)

The power range HI FLUX and RATE TRIP bistables of a failed power range detector are placed in the trip condition by which ONE of the following?

a. Taking the applicable comparator channel defeat switch to the failed channel position at the comparator and rate drawer.

b. Taking the applicable Power Mismatch Bypass switch to the failed channel position at the Detector Current Comparator drawer.

c. Taking the control power fuses out of the Power Range A Drawer.

d. Taking the applicable control power fuses out of the Comparator and Rate Drawer.

QUESTION: 002 (1.00)

A LOCA in the discharge piping of one of the centrifugal charging pumps would be most likely evidenced by which ONE of the choices below if SI actuates?

a. high discharge pressure, low flow, and high power requirements.

b. low discharge pressure, high flow, and high power requirements.

c. high discharge pressure, high flow, and low power requirements.

d. low discharge pressure, low flow, and low power requirements.

QUESTION: 003 (1.00)

RHR train A is in service in mode 5 with the RCS filled. Which one of the alarm conditions below most appropriately indicates the need to use section 4.0, Mode 4, 5, or 6 Loss of RCS Temperature/Flow Control - RCS Filled, of ABN-104, "Residual Heat Removal System Malfunction"?

a. RHRP 1/2 OVERLOAD/TRIP

b. RHR HX 1 CCW RET FLO LO

c. RHRP 1/2 HL SUCT VLV MISALIGN HV-8701/02

d. VCT LVL LO

QUESTION: 004 (1.00)

Which one of the following conditions will result in a STEAM LINE ISOLATION and a FEEDWATER ISOLATION?

a. Steam Generator High-High Level [85% NR]

b. Containment High Pressure [3.6 psig]

c. Low Steam Line Pressure [600 psig]

d. Reactor Trip with Low Tavg [Tavg @ 557 degrees F]

QUESTION: 005 (1.00)

Which of the following describes how the Residual Heat Removal [RHR] Pumps are protected from vibration and overheating during low flow conditions?

a. Control valves open to recirc flow from the discharge of the RHR heat exchanger to the suction of the RHR pumps.

b. Control valves open to recirc flow from the pump discharge to the pump suction.

c. Approximately 5% flow is continuously recirced from the pump discharge to the pump suction.

d. Approximately 5% flow is continuously recirced from the discharge of the RHR heat exchangers to the RWST.

QUESTION: 006 (1.00)

With the Component Cooling Water System [CCW] in a normal full power lineup, the "A" train CCW pump discharge pressure decreases to 60 psig. Which of the following describes the automatic operation of the CCW system as a result of this decrease in system pressure?

a. The standby CCW pump auto starts, the "A" train side of the surge tank isolates and automatic makeup to the CCW system is initiated.

b. The "A" train safeguards loop isolates and the standby CCW pump auto starts.

c. The standby CCW pump auto starts and the associated Service Water System pump receives an auto start signal.

d. An auto start of the standby CCW pump is the only action that occurs.

QUESTION: 007 (1.00)

Which of the following states the automatic actions that occur on a Safety Injection Actuation Signal?

a. CCW pumps auto start, non-safeguards CCW loop isolation valves shut, RHR HX CCW discharge valves open 22%

b. CCW pumps auto start, RHR HX CCW discharge valves open 22%

c. RHR HX CCW discharge valves fully open, train "A" and "B" CCW cross-connect valves shut

d. Non-safeguards CCW loop isolation valves shut, RHR HX CCW discharge valves fully open, train "A" and "B" CCW cross-connect valves shut

QUESTION: 008 (1.00)

With the unit at 100% power, surveillance OPT-447A "Solid State Protection System Train 'A' Actuation Logic Test" is being performed. Section 8.4 is being performed to test the Reactor Trip Breaker. The appropriate Bypass Breaker is closed and the other Bypass Breaker is open and racked out.

Which one of the following describes final breaker positions after the Train 'A' reactor trip signal is generated?
(Assume the reactor does NOT trip.)

a. Reactor Trip Breaker RTA and Bypass Breaker BYA are open.

b. Reactor Trip Breaker RTA and Bypass Breaker BYB are open.

c. Reactor Trip Breaker RTB and Bypass Breaker BYB are open.

d. Reactor Trip Breaker RTB and Bypass Breaker BYA are open.

QUESTION: 009 (1.00)

A manual emergency boration is being initiated in accordance with ABN-107 "Emergency Boration" Attachment 3. When the controller for the Blender Flow Control valve, 1/1-FCV-110A, was placed to OPEN, the switch failed. Which one of the following describes how the position of 1-FCV-110A can then be maintained to allow boric acid flow?

a. A nitrogen accumulator in the air line to the valve operator maintains the valve open.

b. The operator locally engages the manual handwheel for the valve and opens it.

c. The operator locally isolates and vents the air line to the valve so that it fails open.

d. Installation of a temporary jumper provides 120 V AC power to the open solenoid for the valve.

QUESTION: 010 (1.00)

Which one of the following is the MAXIMUM permitted Technical Specification interval to take corrective action if the quantity of radioactive material contained in the Liquid Holdup Tank exceeds Technical Specification 3/4.11.1, "Liquid Holdup Tanks"?

a. 48 hours

b. 24 hours

c. 12 hours

d. 6 hours

QUESTION: 011 (1.00)

Given the following:

-Unit 1 has experience a reactor trip.
-EOP-0.0A, Step 3b. states, "AC safeguards busses - BOTH ENERGIZED."
-1EA2 is the only energized ESF bus.

Which one of the following describes the required action?

a. Enter ECA-0.0A, "Loss of All AC Power" and perform required actions through step 27 and then exit to the appropriate recovery procedure.

b. Continue on with EOP-0.0A, "Reactor Trip or Safety Injection" while attempting to restore power to ESF bus 1EA1.

c. Enter ECA-0.0A, "Loss of All AC Power" and perform required actions until ESF bus 1EA1 is energized.

d. Stop EOP-0.0A, "Reactor Trip or Safety Injection" at Step 3 until ESF bus 1EA1 is re-energized by its Diesel-Generator.

QUESTION: 012 (1.00)

Which one of the following refueling conditions requires immediate boration per Technical Specification 3/4.9.1, "Boron Concentration"?

a. RCS boron concentration is 1800 ppm.

b. RCS temperature is 68 degrees F.

c. Washdown of refueling equipment that results in a boron concentration change of 20 ppm between two consecutive samples.

d. Keff is less than 0.95.

QUESTION: 013 (1.00)

Which one of the following components is used in the Rod Control System to compensate for the increased effectiveness of a reactivity change at high power?

a. Lead-Lag Compensator.

b. Non-variable Gain Unit.

c. Variable Gain Unit.

d. Rod Speed Programmer.

QUESTION: 014 (1.00)

Which one of the following actions should be taken if a Safety Injection signal occurs while performing FRS-0.1A, "Response To Nuclear Power Generation/ATWT"?

a. Perform the immediate actions of EOP-0.0A, "Reactor Trip Or Safety Injection" while continuing with FRS-0.1A.

b. Perform FRS-0.1A to completion then enter EOP-0.0A, "Reactor Trip Or Safety Injection."

c. Perform FRS-0.1A until Reactor Trip Breakers are OPEN then enter EOP-0.0A, "Reactor Trip Or Safety Injection."

d. Perform EOP-0.0A, "Reactor Trip Or Safety Injection" and disregard FRS-0.1A.

QUESTION: 015 (1.00)

Which one of the following statements describes the basis for limiting maximum core Delta-T to 72 degrees F in IPO-010A, "Reactor Coolant System Reduced Inventory Operations"?

a. To prevent damage of the in-service RHR heat exchanger.

b. To ensure adequate RCS subcooling while maintaining RCS temperature.

c. To prevent excessive thermal stress on reactor vessel internals.

d. To ensure heat loads on CCW are maintained within design limits.

QUESTION: 016 (1.00)

Given the following:

-Unit 2 is at 750 MWe load.
-Non-safeguards bus 2A3 is lost.

Which one of the following describes the plant response?

a. Reactor trip, no immediate SI actuation expected.

b. Reactor trip, SI actuation on low Pressurizer pressure.

c. Atmospheric relief valves open on turbine runback to 60% load.

d. Steam dumps open (C-7) on turbine runback to 60% load.

QUESTION: 017 (1.00)

Which one of the following is the basis for performing an Emergency Start when attempting to restore power to a safeguards bus if the output breaker for a Diesel-Generator did not close?

a. To block all Diesel-Generator protective features except overspeed and allow closure of the output breaker on a phase-to-phase fault on the bus.

b. To ensure that the Diesel remains running in the event of a Safety Injection actuation if the Diesel is carrying a Safeguards bus.

c. To allow breaker closure in the event of a phase-to-ground fault and to lockout selected engine protective trip features.

d. To prevent a trip on high jacket water temperature if Station Service Water is not restored in an emergency need situation.

QUESTION: 018 (1.00)

Given the following:

-ECA-2.1A, "Uncontrolled Depressurization of All Steam Generators," has been entered.
-SGs 1, 3, and 4 narrow range levels are 20%.
-SG 2 narrow range level is 60%.
-RCS pressure is 1200 psig and decreasing.
-RCS subcooling is 42 degrees F.
-Containment pressure is 14 psig.
-RCS cooldown rate is greater than 100 degrees F/hour.

Which one of the following actions should be taken for the given conditions?

a. Stop AFW flow to all SGs until cooldown rate is less than 100 degrees F/hour.

b. Reduce AFW flow to SGs 1, 3, and 4 to 100 gpm until cooldowr rate is less than 100 degrees F/hour.

c. Stop AFW flow to SGs 1, 3, and 4 until cooldown rate is less than 100 degrees F/hour.

d. Reduce AFW flow to SG 2 to 100 gpm until cooldown rate is less than 100 degrees F/hour.

QUESTION: 019 (1.00)

Given the following:

-Unit 1 has tripped.
-RCS pressure is 1850 psig.
-SG narrow range levels are:
1 - Less than 5% and increasing
2 - Off scale low
3 - 30%
4 - Off scale low
-All SG pressures increasing.
-All Pressurizer Safety Valves, Spray Valves and Power Operated Relief Valves are closed.
-Containment pressure is 2.0 psig.
-AFW flows are:
1 - 130 gpm
2 - 150 gpm
3 - 50 gpm
4 - 100 gpm
-EOP-0.0A, "Reactor Trip or Safety Injection", Step 25, "Check if RCS is intact", is being performed.

Which one of the following actions should be taken?

a. Proceed to EOP-1.0A, "Loss of Reactor or Secondary Coolant."

b. Proceed to FRH-0.1A, "Response to Loss of Secondary Heat Sink."

c. Proceed to EOP-0.0A, Step 26, "Check if ECCS Flow Should Be Reduced."

d. Proceed to EOP-2.0A, "Faulted Steam Generator Isolation."

QUESTION: 020 (1.00)

Which one of the following is required to give approval prior to using an installed fuel handling equipment bypass switch in addition to the Fuel Handling Supervisor?

a. Reactor Engineer.

b. On-duty Shift Supervisor.

c. On-duty Unit Supervisor.

d. Shift Operations Manager.

QUESTION: 021 (1.00)

Which one of the following is responsible for ensuring an adequate number of qualified operations personnel are on duty during an assigned shift in accordance with Technical Specification?

a. Manager, Operations.

b. Shift Operations Manager.

c. Unit Supervisor.

d. Shift Supervisor.

QUESTION: 022 (1.00)

Given the following:
-Unit 1 is performing Refueling Operations.
-It is Saturday afternoon.
-The Shift Supervisor needs a control room operator for the upcoming evening shift to replace an ill crew member.

Which one of the following is the PREFERRED operator to fill this vacancy per STA-615, "STAFF WORK HOURS"?

a. Operator "A", who has worked his normal day shift, is willing to hold over onto the evening shift, but states that he came in one hour early to relieve an operator who left early for a doctors appointment.

b. Operator "B", who has worked his normal day shift, is willing to hold over onto the evening shift, but states that he worked eight (8) hours on the evening shift the day before after working the day shift.

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

d. Operator "D", who worked the dayshift as a relief, is willing to work the evening shift, but states that he worked the day and evening shifts two (2) days ago, and, this would be his third time to work both shifts this week.

QUESTION: 023 (1.00)

Which one of the following repair or replacement activities would require a system leakage test after completion and prior to the item being returned to service?

a. Replacement of a 2-inch valve body to piping gasket.

b. Replacement of valve packing and stem nut on a 2-inch valve.

c. Replacement of a 1-inch valve body to bonnet gasket.

d. Replacement of a valve disk on a 1-inch valve.

QUESTION: 024 (1.00)

Which one of the following is the MAXIMUM number of excursions into "Threshold Limit Value - Short Term Exposure Limit" areas any one individual will be allowed to make in one day according to the Respiratory Protection Program?

a. 2 excursions, separated by at least 30 minutes.

b. 3 excursions, each separated by at least 45 minutes.

c. 4 excursions, each separated by at least 60 minutes.

d. 5 excursions, each separated by at least 90 minutes.

QUESTION: 025 (1.00)

Which one of the following is a duty of the Attendant required by the Confined Space Entry Permit?

a. Maintain real-time communication with those in the Confined Space.

b. Recover any individuals who become incapacitated by pulling on their safety harness or lifeline.

c. Test the atmosphere of the Confined Space if forced ventilation is interrrupted.

d. Ensure that personnel entering the Confined Space are wearing the proper protective equipment.

QUESTION: 026 (1.00)

Given the following:

- Both Units are in Mode 1.
- Maintenance is requesting work start to remove and then replace 10 smoke detectors in Auxiliary Building Room 246 at elevation 886'6".
- The Fire Detection Instrumentation List denotes Room 246 as being Fire Zone 40 and having 19 Function A (early warning fire detection and notification only) instruments.

Which one of the following compensatory measures should be implemented in accordance with STA-738?

a. The inoperable instruments shall be restored within 4 hours or within the next 1 hour, a fire watch patrol shall be established to inspect the zone at least once per hour.

b. Within 4 hours, a fire watch patrol shall be established to inspect the zone at least once per hour.

c. The inoperable instruments shall be restored within 8 hours or within the next 1 hour, a fire watch patrol shall be established to inspect the zone at least once per hour.

d. Within 1 hour, a fire watch patrol shall be established to inspect the zone at least once per hour.

QUESTION: 027 (1.00)

Given the following:

- -Unit 1 is in Mode 5 for a short maintenance outage.
- -During a containment walkthrough, the Shift Supervisor notices that the head storage area is barricaded with radiation ropes.
- -A sign on the ropes reads, "Caution: High Radiation Area, RWP Required for Entry" and indicates a maximum radiation level of 1.12 Rem/hr inside the ropes.

Which one of the following additional posting requirements and/or controls are required for this area in accordance with Technical Specification 6.12, "HIGH RADIATION AREA"?

a. The area should be fenced off, the door(s) to the area kept locked with the keys kept under the administrative control of the Radiation Protection Supervisor.

b. The area should have a flashing light in the immediate area as a warning device.

c. The area should be fenced off, the door(s) to the area kept locked, and the keys kept under the administrative control of the Shift Supervisor.

d. The area should have a closed circuit TV monitor installed to provide radiation protection personnel with continuous monitoring capability.

QUESTION: 028 (1.00)

Which one of the following is the basis for verifying the turbine is tripped after the reactor is tripped when implementing Step 2 of FRS-0.1A, "Response to Nuclear Power Generation/ATWT"?

a. To prevent the generator from motoring.

b. To prevent overheating the turbine blades.

c. To prevent violating manufacturer's warranty.

d. To prevent uncontrolled RCS cooldown.

QUESTION: 029 (1.00)

The extent of core damage during accident conditions can be estimated by which one of the following methods?

a. The increase in fission product concentration in the RCS coolant.

b. How long the core exit thermocouple temperatures were >1200 deg.F.

c. How long void conditions existed in the reactor core.

d. The change in reactor coolant E-bar.

QUESTION: 030 (1.00)

Which one of the following is correct concerning the main steam line break FSAR analysis for credible breaks assuming no operator action?

a. Subcooling is not regained until the voids in the vessel head and hot legs are collapsed.

b. Subcooling is not regained until safety injection recovers pressurizer level.

c. Subcooling is lost only for breaks greater than 1.4 square feet.

d. Subcooling cannot be restored, the plant must be cooled down on the saturation curve.

QUESTION: 031 (1.00)

Which one of the following is the Technical Specification MINIMUM required action to be taken if a Safety Limit is violated?

a. Notify NRC Operations Center AND be in HOT STANDBY within one hour.

b. Notify NRC Regional Office AND be in HOT STANDBY within one hour.

c. Notify NRC Operations Center within one hour and be in HOT STANDBY within six hours.

d. Notify NRC Regional Office AND be in HOT STANDBY within six hours.

QUESTION: 032 (1.00)

Given the following:

-Plant is increasing power from 75% to 100%.
-All systems are in automatic.
-A boron dilution is in progress.

The reactor operator observes a valid "Tref - AUCT HI TAVE DEV" annunciator alarm, and no rod motion. Which one of the following is a possible cause of this alarm and the appropriate action the operator should take?

a. NI power range instruments disagree, place rod control in manual.

b. Control bank D rods are at 228 steps, initiate boration.

c. Th input to Tavg failed low, select alternate temp. channel.

d. Control Rod Drive system urgent failure, place rod control in manual.

QUESTION: 033 (1.00)

Which one of the following situations would require specific ALARA job planning as detailed in STA-657 "ALARA Job Planning/Debriefing"?

	TASK	TIME	DOSE RATE
a.	2 persons replacing a valve gasket;	1 hr.	450 mrem/hr.
b.	2 persons removing a piping spool piece;	2 hr.	200 mrem/hr.
c.	3 persons performing a maintenance on a HVAC filter unit;	3 hr.	100 mrem/hr.
d.	5 persons performing pump maintenance;	4 hr.	50 mrem/hr.

QUESTION: 034 (1.00)

Given the following:

-Controlling Bank Rods are in automatic and withdrawing.
-Turbine load is at 90%
-High Tavg alarm illuminated
-Tavg is increasing

Which one of the following actions should be taken?

a. Commence an orderly shutdown of the Main Turbine.

b. Emergency Borate per ABN-107.

c. Trip the Reactor and go to EOP-0.0A/B.

d. Transfer Rod Control to manual and stabilize Tavg.

QUESTION: 035 (1.00)

Which one of the following situations, occuring on only ONE Reactor Coolant Pump, would require immediately tripping the reactor in accordance with Procedure ABN-101, "Reactor Coolant Pump Trip/Malfunction"?

a. Annunciator "RCP VIBR HIGH" in alarm.

b. Motor winding temperature of 275 degrees F.

c. Motor bearing temperature of 190 degrees F.

d. Seal injection and thermal barrier cooling lost for 1 minute.

QUESTION: 036 (1.00)

Which one of the following is necessary to satisfy the Reactor Coolant Pump (RCP) trip criteria on the foldout page for EOP-0.0A, "Reactor Trip or Safety Injection"?

a. At least ONE (1) Safety Injection (SI) or Centrifugal Charging Pump (CCP) running, AND RCS subcooling less than 20 degrees F without adverse containment.

b. At least ONE (1) SI or CCP pump running, AND RCS subcooling less than 55 degrees F for adverse containment.

c. At least ONE (1) SI or any charging pump running, AND RCS subcooling less than 20 degrees F without adverse containment.

d. At least ONE (1) SI or CCP pump running, AND RCS subcooling less than 45 degrees F for adverse containment.

QUESTION: 037 (1.00)

Which one of the following is a proper method for verifying the POSITION of a valve that is required to be in a LOCKED THROTTLED position?

a. The valve should be moved slightly in the open direction and then back to its original position.

b. The valve should not be moved; the presence of the locking device assures proper position.

c. The valve should be moved slightly in the closed direction and then back to its original position.

d. The valve should not be moved, the position is verified by observing the valve stem position.

QUESTION: 038 (1.00)

Which one of the following individuals or positions is responsible for reviewing a Clearance Report prior to Clearance tag removal and equipment restoration?

a. Clearance preparer

b. Field Support supervisor

c. Operations supervisor

d. Work group supervisor

QUESTION: 039 (1.00)

Which one of the following is considered a Temporary Modification per STA-602, "Temporary Modifications"?

a. Gagging a relief or safety valve.

b. Reinstallation of a normally installed blind flange on a system that is shown on a system P&ID.

c. Installation of tygon tubing on a pump's drain line.

d. Modifications to equipment that is out of service.

QUESTION: 040 (1.00)

Given the following:

-Unit 1 is in Mode 1
-A maintenance worker calls the Control Room on extension 3911 and reports a fire in the "B" diesel-generator building at elevation 844 near the fuel oil day tank.
-The "B" diesel-generator is being run for a normal surveillance and will not respond to a remote shutdown command.

Which one of the following actions is NOT required per STA-724, "Fire Reporting and Response"?

a. Inform the Fire Brigade Leader.

b. Dispatch a Reactor Operator to assist.

c. Refer to CPSES Fire Preplan Manual as needed.

d. Inform the Operations Shift Supervisor.

QUESTION: 041 (1.00)

Which one of the following represents a NON-INTENT change in a procedure?

a. A change in initial conditions.

b. A format change to a procedure table.

c. A modification to setpoints.

d. A deletion of a hold point.

QUESTION: 042 (1.00)

Which one of the following Technical Specification terms describes the process of making a qualitative assessment of an instrument channel's behavior during operation by visually comparing the indications to independent instrument channels measuring the same parameter?

a. Channel verification.

b. Channel functional test.

c. Channel check.

d. Channel calibration.

QUESTION: 043 (1.00)

Which one of the following portable radio channels should normally be used for Operations communications, assuming that the Fire Brigade is NOT responding to an emergency?

a. Channel 1.

b. Channel 2.

c. Channel 3.

d. Channel 4.

QUESTION: 044 (1.00)

Given the following:

-Both Units are in Mode 1.
-Unit 1 has entered a Limiting Condition for Operation, in accordance with TS 3.4.1.1, as a result of a loss of overcurrent protection and underfrequency tripping capability on the Reactor Coolant Pumps.

Which one of the following has occurred?

a. Low voltage on 125 VDC bus 1ED3.

b. Loss of 125 VDC bus 1D3.

c. Low voltage on 125 VDC bus 1ED2.

d. Loss of 125 VDC bus 1D2.

QUESTION: 045 (1.00)

Given the following:

-Unit 2 is reduced inventory operations.
-The reactor vessel head is on.
-Containment pressure is increasing.

Which one of the following describes the response of the RCS level indication?

a. Indicated level is becoming lower than actual level.

b. Indicated level is becoming greater than actual level.

c. Indicated level will remain the same as actual level.

d. Incicated level is oscillating, above and below actual level.

QUESTION: 046 (1.00)

Given the following:

-Both Units are at 100% power.
-All systems are normally aligned.
-A loss of offsite power occurs.

Which one of the following describes the response of the Containment Air Cooling and Recirculation System cooling units and fans?

a. The cooling units and fans continue to run in the pre-event arrangement.

b. The cooling units and fans are shed and must be manually reset.

c. The cooling units and fans are tripped and then sequenced onto the safety-related electrical buses.

d. Two (2) of the four (4) cooling units and fans are sequenced onto the safety-related electrical buses after all four (4) have been tripped.

QUESTION: 047 (1.00)

Given the following:

-Both units are in Mode 1.
-Unit 1 Motor Driven Auxiliary Feedwater pump 1 has been started for a surveillance and is in recirculation flow.

Which one of the following is the proper motor running current?

a. 10 to 30 amps.

b. 35 to 55 amps.

c. 60 to 80 amps.

d. 85 to 105 amps.

QUESTION: 048 (1.00)

Given the following:

-Unit 1 refueling operations are in progress.
-A fuel assembly has just been raised and the GRIPPER TUBE UP light is illuminated.
-Electrical power to the refueling machine is lost.

Which one of the following actions should be taken?

a. Open breaker 1CB located in the upper left corner of the refueling machine motor control center.

b. Install the manual handwheel on the hoist drive motor and ensure all brake release mechanisms are set for normal operation.

c. Manually locate the fuel assembly over the Emergency Disengage Plate.

d. Promptly close the air receiver outlet isolation valves to conserve the receiver air pressure for gripper operation.

QUESTION: 049 (1.00)

Which one of the following is used to calculate the Tref signal?

a. Turbine first stage impulse pressure.

b. NI normalized power level.

c. Auctioneered high T-hot.

d. Main Steam pressure.

QUESTION: 050 (1.00)

Which one of the following is the reason that all the RCP breakers OPEN on underfrequency on a loss of offsite power?

a. To preserve the RCP flywheel kinetic energy.

b. To reduce the probability of a stress induced RCP sheared shaft accident.

c. To avoid water hammer transients in the RCS induced by rapid RCP speed change.

d. To protect the RCP from damage to the anti-rotation device due to abnormal coastdown.

QUESTION: 051 (1.00)

Which one of the following describes how the Unit 2 CVCS charging pump suction piping is protected from overpressure?

a. A single relief valve is installed in the suction piping of the RHR pumps, cross-connected to the charging pump suction.

b. Two relief valves are installed downstream of the VCT outlet isolation valves, LCV-112B and LCV-112C.

c. A single relief valve is installed in the SI pump suction piping, cross-connected to the charging pump suction.

d. Three relief valves are installed in the charging pump suction piping.

QUESTION: 052 (1.00)

Which one of the following groups of plant parameters are inputs for the Safety Injection Signal?

a. PZR Pressure, Containment Pressure, Steam Line Pressure.

b. RCS Pressure, PZR Level, Steam Line Pressure.

c. PZR Pressure, PZR Level, RCS Temperature.

d. RCS Pressure, Containment Pressure, RCS Temperature.

QUESTION: 053 (1.00)

Which one of the following describes the consequences of resetting an automatic Safety Injection signal?

a. A subsequent Blackout signal will automatically sequence on ALL the ECCS pumps.

b. Any ECCS pumps subsequently stopped after SI reset will get SI sequencer start signal ONLY if a manual SI signal is generated.

c. A subsequent Blackout signal will sequence on ONLY the running ECCS pumps.

d. The ECCS pumps that were auto started by the SI sequencer will return to the stopped condition.

QUESTION: 054 (1.00)

Which one of the following statements regarding the nuclear instrument system is correct?

a. A CHANNEL CALIBRATION may be performed on only ONE of the four nuclear instrumentation system protection channels at a time at power. The redundant protection channels not under test must be capable of performing the trip logic.

b. An interlock between the Level Trip Bypass and Operation Selector Switches on the Intermediate and Power Range drawers requires that the Level Trip Bypass Switch be in the Bypass position before testing can be performed on the associated channel.

c. Rate Channel Test Switch on SUR Panels allows rate test or calibration of all three ranges of Nuclear Power intrumentation, however, only one channel may be in TEST at a time.

d. An ACTUATION LOGIC TEST may be performed on two of the four nuclear instrumentation system protection channels simultaneously at power. The test signals are electronically isolated from actually causing a trip.

QUESTION: 055 (1.00)

Given the following:

-Unit 1 is at 100% power.
-Rod control is in manual.
-A power range channel fails high.

Which one of the following actions will occur?

a. OP N16 ROD STOP & TURB RUNBACK.

b. ANY N16 DEV HI/LO.

c. OP HI FLUX ROD STOP C-2.

d. OT N16 ROD STOP & TURB RUNBACK.

QUESTION: 056 (1.00)

Given the following:

-Unit 2 is being started up.
-Both FW pumps are being placed in service.

Which one of the following best describes the reason for resetting both MFP turbines prior to starting the first MFP?

a. Prevent spurious actuation of the FW Isolation Signal.

b. Ensure HP and LP stop valves remain open for both turbines.

c. Prevent spurious actuation of the AFW Actuation Signal.

d. Prevent windmilling when pumps placed off turning gear.

QUESTION: 057 (1.00)

Which one of the following is the MINIMUM AFW pump and SG configuration designed to remove 100% of the reactor decay heat load following a reactor trip from 102% power?

a. One turbine driven AFW pump, or two motor driven AFW pumps supplying two SG's.

b. One motor driven AFW pump supplying one SG.

c. One turbine driven AFW pump, or two motor driven AFW pumps supplying one SG.

d. One motor driven AFW pump supplying two SG's.

QUESTION: 058 (1.00)

Which one of the following lists the portions of the Rod Position Indication (RPI) and Rod Insertion Limit (RIL) systems that utilize the pulse signal generated by the slave cyclers in the rod control system?

a. Digital Rod Position Indication and Rod Insertion Limit Calculator.

b. Bank Demand Position Indication and Digital Rod Position Indication.

c. Bank Demand Position Indication and Pulse to Analog Converter.

d. Digital Rod Position Indication and Pulse to Analog Converter.

QUESTION: 059 (1.00)

Which one of the following is the reason that a Feedwater Isolation Signal is generated when the RPS senses a reactor trip coincident with Lo-Lo Tave?

a. Limit RCS cooldown to minimize positive reactivity added and maintain shutdown margin.

b. Prevent Main Feed discharge pressure from causing Auxiliary Feed pumps to pump at shut-off head.

c. Limit SG cooldown to minimize thermal stresses in the downcomer region.

d. Limit the mass addition to the containment following a SGTR and RCS depressurization.

QUESTION: 060 (1.00)

Given the following:

-Unit 2 is at 100% power.
-Component Cooling Water surge tank level decreases to 46%, (Side "B").

Which one of the following will occur?

a. Train B safeguards loop isolation valves HV 4513 and HV 4514 auto close.

b. Makeup is auto-initiated on a lo-lo level signal.

c. CCW Surge Tank Empty alarm actuates.

d. CCW Surge Tank Low Level alarm actuates.

QUESTION: 061 (1.00)

Which one of the following would be considered a loss of Containment Integrity as defined in Technical Specification 3.6.1.1?

a. An outer airlock door is stuck open and the inner door is locked shut while in Mode 2.

b. An inner airlock door is opened and the outer door shut for 20 seconds while in Mode 1.

c. The total leakage rate of containment penetrations exceeds Technical Specification limits while in Mode 5.

d. Both airlock doors' equalizing valves are simultaneously open for 45 seconds during a maintenance shift change while in Mode 4.

QUESTION: 062 (1.00)

Given the following:

-Unit 1 is at 100% power.
-A security compromise has neccessitated a Control Room evacuation.
-The Shift Supervisor has ordered a Reactor trip.

Which one of the following should be performed after the Reactor is tripped and prior to evacuating the Control Room?

a. Perform a closure of MSIV's and secure Main Feed.

b. Verify Auxiliary Feed actuation and act ... he Control Room Evacuation Alarm.

c. Verify turbine trip and shift charging pump suction to RWST.

d. Deenergize both Rod Drive Motor-Generator sets by taking the motor and generator control switch handles to PULL-OUT.

QUESTION: 063 (1.00)

Which one of the following is an indication of less than adequate core cooling POST-LOCA? Consider each case separately.

a. Pressurizer level indicates 10%.

b. RCS subcooling indicates 20 degrees.

c. Core exit thermocouples indicate 600 degrees F.

d. Two RCS hot leg temperatures indicate 340 degrees F.

QUESTION: 064 (1.00)

Given the following:

-The RCS has had a stuck open Pressurizer safety valve.
-The reactor tripped and safety injection initiated.
-The RCS rapidly depressurized to saturation conditions.
-Pressurizer level initially dropped and then began to rise rapidly.

Which one of the following characterizes the relationship between pressurizer level and RCS inventory under these conditions?

a. Level is an accurate indication of inventory, because voiding would occur first in the pressurizer due to the high temperature of the pressurizer walls.

b. Level is an accurate indication of inventory, because hydraulic pressure would force any voids to the pressurizer steam space and out the safety valve.

c. Level is NOT an accurate indication of inventory, because RCS voiding may result in a rapidly increasing pressurizer level.

d. Level is NOT an accurate indication of inventory, because at higher temperatures the cold calibrated pressurizer level channels falsely indicate high.

QUESTION: 065 (1.00)

Given the following:

-Unit 1 is in Refueling.
-Core alterations are in progress.
-The audible count rate is lost.

Which one of the following is a required initial operator action?

a. Ensure at least one operable SR Channel prior to continuing with core alterations.

b. Commence emergency borating until cause is known and corrected or RCS boron concentration has increased by 100 ppm.

c. Set the channel selector switch on the audio count rate channel drawer to the unaffected source range channel.

d. Ensure that the channel failure has NOT resulted in a SR FLUX DBLG actuation.

QUESTION: 066 (1.00)

Given the following:
-Unit 1 is at approximately 6% reactor power.
-Power is being increased per IPO-003A, "Power Operations."
-The running Main Feed pump trips.
-Steam Generator level is slowly decreasing.

Which one of the following is the expected response?

a. All three Auxiliary Feed pumps auto-start on trip of both Main Feed pumps.

b. The reactor immediately trips on loss of both Main Feed pumps.

c. The operator starts Auxiliary Feed pumps and manually controls SG levels.

d. The operator manually trips the reactor and enters EOP-0.0, "REACTOR TRIP OR SAFETY INJECTION."

QUESTION: 067 (1.00)

Given the following:

-Unit 2 is at 100% power.
-Main Condenser vacuum falls to 20" Hg.

Which one of the following will NOT result?

a. Main Turbine trip.

b. Standby vacuum pump auto-start.

c. Main Feedwater pump turbine trip.

d. Steam dump to condenser available.

QUESTION: 068 (1.00)

Which one of the following represents the basis for ensuring Letdown is isolated when performing initial operator actions of EOP-0.0A, "REACTOR TRIP OR SAFETY INJECTION"?

a. Prevents thermal shock to the regenerative heat exchanger during a loss of charging.

b. Minimizes boron concentration reduction due to the cooldown and maximizes charging.

c. Prevents a VCT overfill condition due to isolation of VCT charging suction isolation valves.

d. Isolates a potential source of leakage from the RCS via the letdown relief valves.

QUESTION: 069 (1.00)

Given the following:

-Unit 2 is at 100% power.
-One digital rod position indicator is inoperable.

Which one of the following actions is used to determine the position of the non-indicating rod per Technical Specifiction 3.1.3.2, "Position Indication Systems"?

a. Use the incore system with a magnetic proximity probe attachment to detect the rod tip position.

b. Perform current measurement of coils on the CRDM.

c. Use incore detectors to perform a flux map of the core.

d. Monitor and analyze QPTR change.

QUESTION: 070 (1.00)

Given the following:

-Unit 2 reactor power is 13%.
-SG A level is 78%.
-SG B level is 82%.
-SG C level is 76%.
-SG D level is 75%.

Which one of the following lists AUTOMATIC actions that should result from the above situation?

a. Turbine trip, Reactor trip, Feed Pump trip.

b. Turbine trip, Feedwater Isolation, Feed Pump trip.

c. Reactor trip, Feedwater Isolation, Feed Pump trip.

d. Turbine trip, Reactor Trip, Feedwater Isolation.

QUESTION: 071 (1.00)

Which one of the following components is the largest source of radioactive gas sent to the Gaseous Waste Processing System (GWPS) during normal full load operations?

a. Volume Control Tank.

b. Boron Recycle Evaporator.

c. Reactor Head Degassing Decay Tank.

d. Reactor Coolant Drain Tank.

QUESTION: 072 (1.00)

Which one of the following events would result in a containment AREA radiation monitor alarm?

a. Main Steam Line Break inside Containment.

b. Steam Generator Tube Rupture.

c. Pressurizer PORV seat leakage.

d. RCS leak at the Incore Seal Table.

QUESTION: 073 (1.00)

Which one of the following is required to be operable by the Offsite Dose Calculation Manual?

a. The High Range Containment Area Radiation Monitor.

b. The Containment Sump Level and Flow Monitoring System.

c. The Liquid Radwaste Effluent Line Radioacitvity Monitor.

d. Control Room Radiation Monitoring Instrumentation.

QUESTION: 074 (1.00)

Given the following:

-Loop 1, 3, and 4 Tave meters indicate 590 degrees F.
-Loop 2 Tave meter indicates off scale HIGH.
-Rapid control rod insertion.
-Pressurizer reference level increase.
-Charging flow increase.

Which one of the following is the cause of these indications?

a. Loop 2 Tcold failed HIGH.

b. Loop 2 Tcold failed LOW.

c. Loop 2 N-16 failed LOW.

d. Loop 2 Thot failed HIGH.

QUESTION: 075 (1.00)

Which one of the following is an input to the Low Temperature Overpressure actuation logic for PCV-455A?

a. Auctioneered-high wide range Thot.

b. RCS pressure transmitter PT-405.

c. Auctioneered-high wide range Tcold.

d. RCS pressure transmitter PT-403.

QUESTION: 076 (1.00)

Given the following:

-All Pressurizer heaters were on IN AUTO prior to actual Pressurizer level dropping below the heater low-level cutout setpoint.
-Pressurizer level is restored to 20%.
-Assume no operator action other than refilling the Pressurizer.
-Assume no Safety Injection or LOOP signals present.
-Assume Pressurizer pressure is 2200 psig.

Which one of the following describes how the heaters will respond?

a. Variable and backup heaters will come on AUTOMATICALLY.

b. Variable and backup heaters will remain OFF.

c. Variable heaters ONLY will come on AUTOMATICALLY.

d. Backup heaters ONLY will come on AUTOMATICALLY.

QUESTION: 077 (1.00)

Given the following:

- Unit 2 is at 99% reactor power.
- Pressurizer level is 58%.
- Normal letdown flow in service (65 gpm).
- A charging line leak develops near the charging line containment penetration that diverts ALL charging flow from the line.
- Normal seal injection is maintained.
- Assume NO operator action is taken.

Which one of the following statements describes the FINAL Pressurizer response?

a. Decreasing Pressurizer level to 17%, Letdown isolates and Pressurizer level increases leading to a HIGH level trip.

b. Pressurizer pressure increases to the HIGH pressure trip setpoint following loss of Pressurizer spray and the auto-start of Pressurizer backup heaters due to level deviation.

c. Stable lower Pressurizer level following reduction of Letdown flow, due to steam flashing in the Regenerative Heat Exchanger.

d. Stable higher Pressurizer pressure due to heating of the water in the Pressurizer, a result of losing the cooling effect of Charging flow.

QUESTION: 078 (1.00)

Which one of the following is the reason for maintaining a MINIMUM pressure of 15 psig in the VCT during normal at power operation?

a. To ensure adequate hydrogen concentration in the RCS coolant.

b. To ensure an effective backpressure on the RCP #1 seal and provide proper lubrication of the #2 seal.

c. To provide adequate CCP suction pressure during multiple CCP starts.
a multiple CCP start.

d. To provide adequate CCP recirculation backpressure during normal operations.

QUESTION: 079 (1.00)

Given the following:

-Unit 1 is at 100% power.
-A surveillance is in progress to test the Reactor Trip Breakers.
-An operator calls the control room and reports that he found ALL Reactor Trip and Bypass Breakers RACKED IN and CLOSED.

Which one of the following actions should be taken?

a. Immediately OPEN one Trip or Bypass Breaker and continue with the surveillance.

b. Within 1 (ONE) hour, rack out the bypass breakers and continue with the surveillance.

c. Immediately OPEN one Trip and one Bypass Breaker on each train in a manner that will not cause a reactor trip.

d. Within 1 (ONE) hour, initiate actions to eventually bring the Unit to Cold Shutdown.

QUESTION: 080 (1.00)

Which one of the following will cause the Overtemperature N-16 reactor trip SETPOINT to increase?

a. Tcold increases.

b. Pressurizer pressure increases.

c. Reactor power increases.

d. Tavg increases.

QUESTION: 081 (1.00)

Which one of the following sets of conditions confirm that natural circulation is occurring in the RCS 20 minutes after a trip from 60% Reactor Thermal Power at End of Life?

a. Thot stable, CETs increasing, SG pressure stable at 1100 psig, Tcold at 532 degrees, subcooling margin at 10 degrees.

b. Thot decreasing, CETs decreasing, SG pressure increasing at 1100 psig, Tcold at 556 degrees, subcooling margin at 5 degrees.

c. Thot stable, CETs stable, SG pressure stable at 1100 psig, Tcold at 556 degrees, subcooling margin at 30 degrees.

d. Thot increasing, CETs increasing, SG pressure increasing at 1200 psig, Tcold at 567 degrees, subcooling margin at 30 degrees.

QUESTION: 082 (1.00)

Which one of the following sets of parameters affects vortexing in the RHR suction piping during reduced inventory operations?

a. RHR flow rate and RCS level.

b. RHR flow rate and RCS pressure.

c. Number of RHR pumps running and RCS pressure.

d. Number of RHR pumps running and RCS level.

QUESTION: 083 (1.00)

Which one of the following is the reason for the order that the valve positions are checked in Step 3, "Check If RCS Is Isolated" of ECA-0.0A, "Loss of All AC Power"?

a. They are listed according to control board location.

b. Those most likely to fail in a loss of AC power are listed first.

c. Those most rarely manipulated are listed last.

d. They are listed according to capacity and potential for inventory loss.

QUESTION: 084 (1.00)

Given the following:

-Unit 1 is at 100% power.
-Pressurizer pressure selector switch is in the PT-455/456 position.
-Pressurizer pressure control is in automatic.

Which one of the following describes the Pressurizer PORVs response if Pressurizer pressure channel 455 fails HIGH?

a. PORV PCV-455A will not close if RCS pressure decreases below 2185 psig.

b. PORV PCV-456 will not close until RCS pressure decreases below 2185 psig.

c. PORV PCV-455A will open.

d. PORV PCV-456 will open.

QUESTION: 085 (1.00)

Given the following:

-Unit 1 is at 100% power.
-All control systems are in their normal power operation alignment.

Which one of the following results from Pressurizer Level channel 460 failing LOW?

a. Charging flow control valve FCV-121 OPENS.

b. All pressurizer heaters deenergize.

c. Letdown isolation valves LCV-459 & 460 CLOSE.

d. Actual pressurizer level DECREASES.

QUESTION: 086 (1.00)

Given the following:

-Unit 2 has tripped from 100% power.
-Safety Injection was initiated due to rapidly decreasing pressurizer pressure.
-The following plant conditions were noted after the trip:
    -Pressurizer level 60% and increasing.
    -RCS pressure 1725 psig and decreasing.
    -Containment pressure 2 psig and increasing.
    -Containment radiation 0.5R/hr and increasing.
    -Containment sump levels increasing.

Which one of the following events has occurred?

a. Main Steam line break inside containment.

b. RCS cold leg break.

c. Steam Generator tube rupture.

d. Pressurizer vapor space LOCA.

QUESTION: 087 (1.00)

Given the following:

- -Unit 1 is operating at 100% power.
- -All controls are in the normal power operation lineup.
- -Pressurizer level is Decreasing.
- -VCT level is Increasing.
- -Seal water Lo Flow alarm is lit.
- -Regen HX Letdown Hi Temp alarm is lit.
- -Letdown HX Outlet Hi Temp alarm is lit.
- -Charging Flow Hi/Lo alarm is lit.

Which one of the following explains the given conditions?

a. Pressurizer PORV failed open.

b. Small break LOCA.

c. Loss of Charging.

d. Letdown Isolation.

QUESTION: 088 (1.00)

Which one of the following determines the temperature at which the RCS cooldown is terminated following a Steam Generator tube rupture when using EOP-3.0A, "Steam Generator Tube Rupture"?

a. RCS pressure.

b. Maximum RCS temperature for RHR initiation.

c. RCS subcooling.

d. Ruptured SG pressure.

QUESTION: 089 (1.00)

Which one of the following is correct regarding operation of a 480V switchgear breaker that has been opened locally following a loss of DC control power?

a. Breaker can be closed remotely one time if the breaker is in the TEST position.

b. Breaker cannot be closed until the breaker is reset by removing and then replacing the fuse block.

c. Breaker can be closed one time locally using the switch on the cubicle door.

d. Breaker cannot be closed again until the closing springs are manually charged.

QUESTION: 090 (1.00)

Which one of the following is the MINIMUM necessary to verify that the turbine has tripped following a reactor trip per EOP-0.0A, "Reactor Trip or Safety Injection"?

	Turbine Stop Valves	Turbine Control Valves
a.	Open	Open
b.	Closed	Open
c.	Open	Closed
d.	Closed	Closed

QUESTION: 091 (1.00)

Which one of the following types of smoke/fire detectors is used to detect a fire in the carbon filters of the HVAC units throughout the plant?

a. Fusable Link detector.

b. Ionization smoke detector.

c. Ultraviolet flame detector.

d. Thermistor heat detector.

QUESTION: 092 (1.00)

Given the following:

-Unit 2 is at 100% power.
-Containment pressure is 1.5 psig.

Which one of the following actions must be taken within 1 hour according to Technical Specification 3.6.1.4, "Containment Systems - Internal Pressure"?

a. Take action to place the Unit in a Mode where the Specification does not apply.

b. Restore pressure to within limits.

c. Initiate a containment normal purge.

d. Perform an RCS leak rate calculation.

QUESTION: 093 (1.00)

Given the following:

-Unit 2 has tripped from 100% power.
-All systems are operable and in automatic.
-Actual Tavg is 20 degrees F greater than no-load Tavg.

Which one of the following describes the response of the steam dump valves?

	Bank 1	Bank 2	Bank 3	Bank 4
a.	Full open	Full open	Full open	Modulating
b.	Full open	Full open	Modulating	Closed
c.	Full open	Full open	Closed	Closed
d.	Modulating	Closed	Closed	Closed

QUESTION: 094 (1.00)

Given the following:

-Unit 2 is at 33% power.
-Power escalation is in progress.
-Control rods are in MANUAL.
-After a manual control rod withdrawal of several steps, the rods continue outward when the Rod Control IN-HOLD-OUT lever is returned to the neutral position.

Which one of the following actions should be taken?

a. Place the Rod Bank Selector Switch in AUTO and check for continued rod motion.

b. Trip the Unit and enter EOP-0.0A, "Reactor Trip or Safety Injection."

c. Check for failed instruments and select or block appropriate instrument inputs.

d. Hold the IN-HOLD-OUT lever to the IN position and check for continued rod motion.

QUESTION: 095 (1.00)

Which one of the following establishes the initial conditions for the accident analyses addressed in the FSAR?

a. Technical Specifications.

b. Site specific Probabilistic Risk Analysis Report.

c. Westinghouse Owners' Group Emergency Response Guidelines.

d. Westinghouse Transient and Accident Analysis Report.

QUESTION: 096 (1.00)

Which one of the following operator actions should be attempted first to mitigate the consequences of inadequate core cooling if ECCS flow is not available?

a. Open Pressurizer PORVs.

b. Secure all RCPs.

c. Open Head Vents.

d. Depressurize the SGs.

QUESTION: 097 (1.00)

Given the following:

-During Critical Safety Function Status Tree monitoring two (2) functions have Orange paths.
-One (1) of the Orange functions is Heat Sink.

Which one of the following functions would take precedence over Heat Sink?

a. Inventory.

b. Containment.

c. Integrity.

d. Core Cooling.

QUESTION: 098 (1.00)

Given the following:

-FRP-0.1A, "RESPONSE TO IMMINENT PRESSURIZED THERMAL SHOCK CONDITION" has been entered.

Which one of the following statements reflects the conditions for securing SI during the performance of FRP-0.1A?

a. SI termination criteria is LESS conservative than the EOP-0.0A criteria. If SI is terminated a RCP is started.

b. SI termination criteria is LESS conservative than the EOP-0.0A criteria. If SI is NOT terminated a RCP is started.

c. SI termination criteria is MORE conservative than the EOP-0.0A criteria. If SI is terminated a RCP is started.

d. SI termination criteria is MORE conservative than the EOP-0.0A criteria. If SI is NOT terminated a RCP is started.

QUESTION: 099 (1.00)

Given the following:

-Unit 1 has tripped from 100% power due to a loss of coolant accident (LOCA).
-A loss of offsite power (LOOP) has also occurred.
-Containment pressure is 15 psig.
-Core Exit Thermocouples indicate 330 degrees F.
-RCS pressure is 200 psig.
-RWST level is 50%.
-Emergency Diesel Generator #1 has failed to start.
-NO flow is indicated for running Residual Heat Removal pump #2.

Which one of the following is the reason that RHR pump #2 has NO flow indication?

a. RCS pressure is above the RHR shutoff head.

b. RHR HX 1-02 bypass valve (FCV-619) is closed.

c. SI cross-connect valves 8716A/B are OPEN.

d. RHR pump Containment Sump Suction valves have failed to open automatically on low RWST level.

QUESTION: 100 (1.00)

Given the following:
-Unit 1 was at 100% power when it tripped due to a LOCA.
-Containment pressure is now 16 psig and increasing.
-Hydrogen concentration is 3%.
-Hydrogen Recombiners are being placed in service in accordance with FRZ-0.1A, "Response to High Containment Pressure."

Which one of the following indicates that recombination is occurring after having placed the Hydrogen Recombiners in service?

a. Containment pressure decreases after Hydrogen Recombiners are placed in service.

b. Hydrogen Recombiner power is immediately adjusted to 40 kw.

c. Hydrogen Recombiner thermocouple temperature indicates 1175 degrees F after power adjustments have been made.

d. A ramp change in Hydrogen Recombiner sheath temperature is observed.

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

ANSWER: 001 (1.00)

c.

REFERENCE:

ABN-703, ATTACHMENT 7

KA 015000A403 [3.8/3.9]

015000A403 ..(KA's)

ANSWER: 002 (1.00)

b

REFERENCE:

CPSES LOA1.NEO.HF8.LN

IC201 OBJ 1.1

000009A202 ..(KA's)

ANSWER: 003 (1.00)

b

REFERENCE:

CPSES ABN-104
005000G015 ..(KA's)

ANSWER: 004 (1.00)

c.

REFERENCE:

WESTINGHOUSE PRINT 7247D05 SHEET 8
KA 000040A102

000040A104 000040A102 ..(KA's)

ANSWER: 005 (1.00)

a.

REFERENCE:

ICD M1-2260 SHEET 3, CP-8

005000K406 ..(KA's)

ANSWER: 006 (1.00)

c.

REFERENCE:

ICD-M1-2229, SHEET 3, CP-9
ALM-0032A WINDOW 3-3

008000A401 ..(KA's)

ANSWER: 007 (1.00)

b.

REFERENCE:

ICD MI-2229, SHEETS 3 AND 6

000026K302 ..(KA's)

ANSWER: 008 (1.00)

b.

REFERENCE:

CPSES OPT-447A, section 8.4, page 16.
LO21.RLS.RP1.OB101.
K/A [3.7/4.2]

001000K603 ..(KA's)

ANSWER: 009 (1.00)

c.

REFERENCE:

CPSES dwg. M1-0255, SHEET 2, CP-8
K/A 000024K201 [2.7/2.7]

000024K201 ..(KA's)

ANSWER: 010 (1.00)

a.

REFERENCE:

CP: TECHNICAL SPECIFICATION 3/4.11.1.
KA: 068000G005 (2.4/2.9)
068000G005 ..(KA's)

ANSWER: 011 (1.00)

b.

REFERENCE:

CP: PROCEDURE EOP-0.0A, REV. 6.
KA: 000056G010 (3.7/3.9)
000056G010 ..(KA's)

ANSWER: 012 (1.00)

a.

REFERENCE:

CP: TECHNICAL SPECIFICATION 3/4.9.1.
KA: 000036G008 (3.1/3.7)
000036G008 ..(KA's)

ANSWER: 013 (1.00)

c.

REFERENCE:

CP: LO21.RLS.CR1.LP, REV. 11/20/92.
KA: 001000K602 (2.8/3.3)
001000K602 ..(KA's)

ANSWER: 014 (1.00)

a.

REFERENCE:

CP: PROCEDURE FRS-0.1A, REV. 6.
KA: 000029G012 (4.1/4.2)
000029G012 ..(KA's)

ANSWER: 015 (1.00)

c.

REFERENCE:

CP: PROCEDURE IPO-010A, REV. 5, limitation 4.11
KA: 002000G010 (3.4/3.9)
002000G010 ..(KA's)

ANSWER: 016 (1.00)

a.

REFERENCE:

CP: PROCEDURE ABN-602, Secdtion 4.0 REV. 2.
KA: 000056A242 (4.1/4.1)
000056A242 ..(KA's)

ANSWER: 017 (1.00)

c.

REFERENCE:

CP: PROCEDURE ABN-601, REV. 5.
KA: 064000A406 (3.9/3.9)
064000A406 ..(KA's)

ANSWER: 018 (1.00)

b.

REFERENCE:

CP: PROCEDURE ECA-2.1A, REV. 6.
KA: 061000A302 (4.0/4.0)
061000A302 ..(KA's)

ANSWER: 019 (1.00)

a.

REFERENCE:

CP: PROCEDURE EOP-0.0A, REV. 6.
KA: 000007G011 (4.1/4.3)
000007G011 ..(KA's)

ANSWER: 020 (1.00)

a.

REFERENCE:

CP: PROCEDURE RFO-302, REV. 5, Section 6.2, "Fuel Assembly Handling Precautions and Limitations"
KA: 034000G001 (2.3/2.9)
034000G001 ..(KA's)

ANSWER: 021 (1.00)

d.

REFERENCE:

CP: PROCEDURE ODA-102, REV. 14, Section 6.2.22
KA: 194001A109 (2.7/3.9)
194001A109 ..(KA's)

ANSWER: 022 (1.00)

d.

REFERENCE:

CP: PROCEDURE STA-615, REV. 4.
KA: 194001A103 (2.5/3.4)
194001A103 ..(KA's)

ANSWER: 023 (1.00)

a.

REFERENCE:

CP: PROCEDURE STA-725, REV. 4
KA: 194001K109 (3.4/3.4)
194001K109 ..(KA's)

ANSWER: 024 (1.00)

c.

REFERENCE:

CP: STA-659, REV. 4.
KA: 194001K113 (3.3/3.6)
194001K113 ..(KA's)

ANSWER: 025 (1.00)

a.

REFERENCE:

CP: PROCEDURE STA-628, REV. 2.
KA: 194001K114 (3.3/3.6)
194001K114 ..(KA's)

ANSWER: 026 (1.00)

d.

REFERENCE:

CP: PROCEDURE STA-738, REV. 4, ATTACHMENT 8.A.
KA: 194001K116 (3.5/4.2)
194001K116 ..(KA's)

ANSWER: 027 (1.00)

b.

REFERENCE:

CP: PROCEDURE STA-660, REV. 4.
CP: TECHNICAL SPECIFICATION 6.12
KA: 194001K103 (2 8/3.4)

194001K103 ..(KA's)

ANSWER: 028 (1.00)

d.

REFERENCE:

CP: PROCEDURE FRS-0.1A, Rev 5
KA 000029K312 (4.4/4.7)
000029K312 ..(KA's)

ANSWER: 029 (1.00)

a.

REFERENCE:

CP: LESSON PLAN LO21.MCO.MIA.LN
KA 000076G011 (3.4/3.6)
000076G011 ..(KA's)

ANSWER: 030 (1.00)

b.

REFERENCE:

CP: LESSON PLAN LO21.MCO.TA8.LN NO REV
KA 000040K103 (3.8/4.2)
000040K103 ..(KA's)

ANSWER: 031 (1.00)

a.

REFERENCE:

CP: TECHNICAL SPECIFICATIONS 2.1 and 6.7; pages 2-1 and 6-16.
KA: 194001A105 (3.6/3.8)
194001A105 ..(KA's)

ANSWER: 032 (1.00)

d.

REFERENCE:

CP: PROCEDURE ABN-704, REV. 4.
CP: PROCEDURE ABN-712, REV. 6.
CP: LOA1.RLS.CR1.OB115
KA: 000005A101 (3.6/3.4)
000005A101 ..(KA's)

ANSWER: 033 (1.00)

d.

REFERENCE:

CP: STA-657
CP: LO21.RLS.XA1.OB100
KA: 194001K104 (3.3/3.5)
194001K104 ..(KA's)

ANSWER: 034 (1.00)

d.

REFERENCE:

CP: PROCEDURE ABN-712, REV. 6.
CP: LOA1.RLS.CR1.OB116
KA: 000001K301 (3.3/3.6)
000001K301 ..(KA's)

ANSWER: 035 (1.00)

d.

REFERENCE:

CP: PROCEDURE ABN-101, REV. 4.
CP: LO21.SA5.SY5.LP
KA: 000015A209 (3.4/3.5)
000015A209 ..(KA's)

ANSWER: 036 (1.00)

b.

REFERENCE:

CP: PROCEDURE EOP-0.0A, REV. 6, ATTACHMENT 1.
KA: 000007A104 (3.6/3.7)
000007A104 ..(KA's)

ANSWER: 037 (1.00)

d. [or b]

REFERENCE:

CP: PROCEDURE STA-694, REV. 1.
KA: 194001K101 (3.6/3.7)
194001K101 ..(KA's)

ANSWER: 038 (1.00)

c.

REFERENCE:

CP: PROCEDURE STA-605, REV. 12.
KA: 194001K102 (3.7/4.1)
194001K102 ..(KA's)

ANSWER: 039 (1.00)

a.

REFERENCE:

CP: PROCEDURE STA-602, REV. 11.
KA: 194001A106
194001A106 ..(KA's)

ANSWER: 040 (1.00)

b.

REFERENCE:

CP: PROCEDURE STA-724, REV. 1.
KA: 194001K116 (3.5/4.2)
194001K116 ..(KA's)

ANSWER: 041 (1.00)

b.

REFERENCE:

CP: PROCEDURE STA-205 REV. 16.
KA: 194001A101 (3.3/3.4)
194001A101 ..(KA's)

ANSWER: 042 (1.00)

c.

REFERENCE:

CP: TECHNICAL SPECIFICATION 1.6.
KA: 194001A113 (4.3/4.1)
194001A113 ..(KA's)

ANSWER: 043 (1.00)

c.

REFERENCE:

CP: PROCEDURE ODA-102, REV. 14.
KA: 194001A110 (2.9/3.9)
194001A110 ..(KA's)

ANSWER: 044 (1.00)

b.

REFERENCE:

CP: OP51.SYS.DC1.LN, REV. 10-30-92.
CP: TECHNICAL SPECIFICATION 3.4.1.1.
KA: 063000K302 (3.5/3.7)
063000K302 ..(KA's)

ANSWER: 045 (1.00)

c. [or a]

REFERENCE:

CP: IPO-010, REV 5, M2-250
KA: 002000K107 (3.5/3.7)
002000K107 ..(KA's)

ANSWER: 046 (1.00)

c.

REFERENCE:

CP: OP51.SYS.CL1.LN, REV. 11-10-92.
CP: LO21.RLS.CL1, REV. 11-10-92.
KA: 022000A301 (4.1/4.3)
022000A301 ..(KA's)

ANSWER: 047 (1.00)

b.

REFERENCE:

CP: PROCEDURE SOP-304A, REV. 9.
KA: 061000A301 (4.2/4.2)
061000A301 ..(KA's)

ANSWER: 048 (1.00)

d.

REFERENCE:

CP: PROCEDURE RFO-401, REV. 6.
KA: 034000G014
034000G014 ..(KA's)

ANSWER: 049 (1.00)

a.

REFERENCE:

CP: OP51.SYS.SD1, REV. 1-21-93.
KA: 001000K543 (3.2/3.4)
001000K543 ..(KA's)

ANSWER: 050 (1.00)

a.

REFERENCE:

CP: OP51.SYS.RC1, REV. 8-25-92.
KA: 003000G007 (3.2/3.3)
003000G007 ..(KA's)

ANSWER: 051 (1.00)

d.

REFERENCE:

CP: LO21.RLS.CS1.LP, REV. 10/2/92.
KA: 004010K403 (3.1/3.6)
004010K403 ..(KA's)

ANSWER: 052 (1.00)

a.

REFERENCE:

CP: LO21.RLS.ES1.LP, REV. 11/12/92.
KA: 013000A301 (3.7/3.9)
013000A301 ..(KA's)

ANSWER: 053 (1.00)

b.

REFERENCE:

CP: LO21.RLS.ES1.LP, REV. 11/12/92.
KA: 013000K118 (3.7/4.1)
013000K118 ..(KA's)

ANSWER: 054 (1.00)

a.

REFERENCE:

CP: LO21.RLS.EC1.LP, REV. 12-15-92.
CP: TECHNICAL SPECIFICATIONS 3.3.1 & 1.5.
KA: 015000K301 (3.9/4.3)
015000K301 ..(KA's)

ANSWER: 055 (1.00)

c.

REFERENCE:

CP: PROCEDURE ABN-703, REV. 4.
KA: 015000K402 (3.7/3.9)
015000K402 ..(KA's)

ANSWER: 056 (1.00)

c.

REFERENCE:

CP: PROCEDURE SOP-302A, REV. [illegible].
KA: 059000K102 (3.4/3.4)
059000K102 ..(KA's)

ANSWER: 057 (1.00)

d.

REFERENCE:

CP: LO21.RLS.AF1.LP, REV. 12/4/92.
KA: 061000K502 (3.2/3.6)
061000K502 ..(KA's)

ANSWER: 058 (1.00)

c.

REFERENCE:

CP: LO21.RLS.RI1.LP, REV. 11-19-92.
KA: 014000K101 (3.2/3.6)
014000K101 ..(KA's)

ANSWER: 059 (1.00)

a.

REFERENCE:

CP: LO21.RLS.MF1, REV. 11/20/92.
KA: 035010K501 (3.4/3.9)
035010K501 ..(KA's)

ANSWER: 060 (1.00)

d.

REFERENCE:

CP: LO21.RLS.CC1.LP, REV. 8/27/92.
KA: 008000A202 (3.2/3.5)
008000A202 ..(KA's)

ANSWER: 061 (1.00)

d.

REFERENCE:

CP: PROCEDURE SOP-907A, REV. 5.
KA: 103000K102 (3.9/4.1)
103000K102 ..(KA's)

ANSWER: 062 (1.00)

c.

REFERENCE:

CP: PROCEDURE ABN-905A, REV. 5.
KA: 000068K318 (4.2/4.5)
000068K318 ..(KA's)

ANSWER: 063 (1.00)

b.

REFERENCE:

CP: PROCEDURE EOP-1.0A, REV. 6.
KA: 000074A201 (4.6/4.9)
000074A201 ..(KA's)

ANSWER: 064 (1.00)

c.

REFERENCE:

CP: PROCEDURE EOS-1.2A, REV. 6.
KA: 000008K301 (3.7/4.4)
000008K301 ..(KA's)

ANSWER: 065 (1.00)

d.

REFERENCE:

CP: PROCEDURE ABN-701, REV. 4.
KA: 000032G010 (2.9/3.1)
000032G010 ..(KA's)

ANSWER: 066 (1.00)

c.

REFERENCE:

CP: PROCEDURE ABN-302, REV. 3.
KA: 000054A203 (4.1/4.2)
000054A203 ..(KA's)

ANSWER: 067 (1.00)

c.

REFERENCE:

CP: PROCEDURE ABN-304, REV. 3.
KA: 000051K301 (2.8/3.1)
000051K301 ..(KA's)

ANSWER: 068 (1.00)

d.

REFERENCE:

CP: PROCEDURE EOP-0.0A, REV. 6.
KA: 000007K301 (4.0/4.6)
000007K301 ..(KA's)

ANSWER: 069 (1.00)

c.

REFERENCE:

CP: TECHNICAL SPECIFICATION 3.1.3.2.
KA: 014000G005 (3.1/3.7)
014000G005 ..(KA's)

ANSWER: 070 (1.00)

b.

REFERENCE:

CP: LO21.RLS.SN1.LP, REV. 12/01/92.
KA: 059000A412 (3.4/3.5)
059000A412 ..(KA's)

ANSWER: 071 (1.00)

a.

REFERENCE:

CP: LO21.RLS.GH1.LP, REV. 12/24/92.
KA: 071000A405 (2.6/2.6)
071000A405 ..(KA's)

ANSWER: 072 (1.00)

d.

REFERENCE:

CP: OP51.SYS.RM1, REV. 11/24/92.
KA: 072000A101 (3.4/3.6)
072000A101 ..(KA's)

ANSWER: 073 (1.00)

c.

REFERENCE:

CP: OP51.SYS.RM1, REV. 11/24/92.
KA: 073000K301 (3.6/4.2)
073000K301 ..(KA's)

ANSWER: 074 (1.00)

a.

REFERENCE:

CP: OP51.SYS.NT1.LN, REV. 11/18/92.
KA: 002020K509 (3.6/3.9)
002020K509 ..(KA's)

ANSWER: 075 (1.00)

b.

REFERENCE:

CP: LO21.RLS.PP2.LP, REV. 11/19/92.
KA: 010000K403 (3.8/4.1)
010000K403 ..(KA's)

ANSWER. 076 (1.00)

d.

REFERENCE:

CP: LO21.RLS.PP1.LP, REV. 11/25/92.
KA: 011000K401 (3.3/3.7)
011000K401 ..(KA's)

ANSWER: 077 (1.00)

a.

REFERENCE:

CP: LO21.RLS.PP1.LP, REV. 11/25/92.
KA: 011000A102 (3.3/3.5)
011000A102 ..(KA's)

ANSWER: 078 (1.00)

b.

REFERENCE:

CP: LO21.RLS.RC1.LP, REV. 2.13.92.
KA: 004000K304 (3.7/3.9)
004000K304 ..(KA's)

ANSWER: 079 (1.00)

d.

REFERENCE:

CP: TECHNICAL SPECIFICATIONS 3/4.3.2 & 3.0.3.
KA: 012000A206 (4.4/4.7)
012000A206 ..(KA's)

ANSWER: 080 (1.00)

b.

REFERENCE:

CP: OP51.SYS.NT1.LN, REV. 11/18/92.
KA: 012000K611 (2.9/2.9)
012000K611 ..(KA's)

ANSWER: 081 (1.00)

c.

REFERENCE:

CP: PROCEDURE EOS-1.2A, REV. 6.
KA: 000017K101 (4.4/4.6)
000017K101 ..(KA's)

ANSWER: 082 (1.00)

a.

REFERENCE:

CP: PROCEDURE IPO-010A, REV. 5.
KA: 000025A102 (3.8/3.9)
000025A102 ..(KA's)

ANSWER: 083 (1.00)

d.

REFERENCE:

CP: PROCEDURE ECA-0.0A, REV. 6
KA: 000055K302 (4.3/4.6)
000055K302 ..(KA's)

ANSWER: 084 (1.00)

c.

REFERENCE:

CP: PROCEDURE ABN-705, REV. 3.
KA: 000027A101 (4.0/3.9)
000027A101 ..(KA's)

ANSWER: 085 (1.00)

b.

REFERENCE:

CP: PROCEDURE ABN-706, REV. 3.
KA: 000028A212 (3.1/3.5)
000028A212 ..(KA's)

ANSWER: 086 (1.00)

d.

REFERENCE:

CP: LO21.MCO.TAA, REV. 10/21/92.
KA: 000008A220 (3.4/3.6)
000008A220 ..(KA's)

ANSWER: 087 (1.00)

c.

REFERENCE:

CP: LO21.RLS.CS1, REV. 10/2/92.
KA: 000022A201 (3.2/3.8)
000022A201 ..(KA's)

ANSWER: 088 (1.00)

d.

REFERENCE:

CP: PROCEDURE E'JP-3.0A, REV. 6.
KA: 000038A136 (4.3/4.5)
000038A136 ..(KA's)

ANSWER: 089 (1.00)

d.

REFERENCE:

CP: PROCEDURE SOP-604A, REV. 7.
KA: 000058G006 (3.4/3.8)
000058G006 ..(KA's)

ANSWER: 090 (1.00)

b.

REFERENCE:

CP: PROCEDURE EOP-0.0A, REV. 6.
KA: 000007G010 (4.2/4.1)
000007G010 ..(KA's)

ANSWER: 091 (1.00)

d.

REFERENCE:

CP: LO21.RLS.FP1.LP, REV. 12/4/92.
KA: 086000K604 (2.6/2.9)
086000K604 ..(KA's)

ANSWER: 092 (1.00)

b.

REFERENCE:

CP: TECHNICAL SPECIFICATION 3.6.1.4.
KA: 103000G005 (3.3/4.1)
103000G005 ..(KA's)

ANSWER: 093 (1.00)

b.

REFERENCE:

CP: OP51.SYS.SD1, REV. 1/21/93.
KA: 041020K105 (3.5/3.6)
041020K105 ..(KA's)

ANSWER: 094 (1.00)

b.

REFERENCE:

CP: ABN-712
KA: 000001G010 (3.9/4.0)
000001G010 ..(KA's)

ANSWER: 095 (1.00)

a.

REFERENCE:

CP: LO21.MCO.MI2.LP, REV. 10/8/92.
KA: 006000G001 (4.1/4.3)
006000G001 ..(KA's)

ANSWER: 096 (1.00)

d.

REFERENCE:

CP: LO21.MCO.MI3.LP, REV. 10/9/92.
KA: 000074K103
000074K103 ..(KA's)

ANSWER: 097 (1.00)

d.

REFERENCE:

CP: LO21.RLS.XG1, REV. 12/11/92.
KA: 000011G012 (4.0/4.1)
000011G012 ..(KA's)

ANSWER: 098 (1.00)

b.

REFERENCE:

CP: PROCEDURE FRP-0.1A, REV. 6.
KA: 000040K304 (4.5/4.7)
000040K304 ..(KA's)

ANSWER: 099 (1.00)

a.

REFERENCE:

CP: LO21.RLS.SI1.LP, REV. 10/6/92.
KA: 006020K603 (2.8/3.1)
006020K603 ..(KA's)

ANSWER: 100 (1.00)

d.

REFERENCE:

CP: PROCEDURE SOP-206A, REV. 6.
KA: 028000A401 (4.0/4.0)

028000A401 ..(KA's)

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