

**U.S. Nuclear Regulatory Commission**

**Site-Specific RO Written Examination**

**Applicant Information**

Name:

Date: August 23, 2007

Facility/Unit: Clinton Power Station

Region: I  II  III  IV

Reactor Type: W  CE  BW  GE

Start Time:

Finish Time:

**Instructions**

Use the answer sheets provided to document your answers. Staple this cover sheet on top of the answer sheets. To pass the examination, you must achieve a final grade of at least 80.00 percent. Examination papers will be collected 6 hours after the examination begins.

**Applicant Certification**

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

\_\_\_\_\_  
Applicant's Signature

**Results**

Examination Value \_\_\_\_\_ Points

Applicant's Score \_\_\_\_\_ Points

Applicant's Grade \_\_\_\_\_ Percent



# Guidelines for Taking Written Examinations

## Part A: General Guidelines

1. **[Read Verbatim]** Cheating on any part of the examination will result in a denial of your application and/or action against your license.
2. If you have any questions concerning the administration of any part of the examination, do not hesitate to ask them before starting that part of the test.
3. SRO applicants will be tested at the level of responsibility of the senior licensed shift position (i.e., shift manager).
4. You must pass every part of the examination to receive a license or to continue performing license duties. Applicants for an SRO-upgrade license may require remedial training in order to continue their RO duties if the examination reveals deficiencies in the required knowledge and abilities.
5. The NRC examiner is not allowed to reveal the results of any part of the examination until they have been reviewed and approved by NRC management. Grades provided by the facility licensee are preliminary until approved by the NRC. You will be informed of the official examination results about 30 days after all the examinations are complete.

## Part B: Written Examination Guidelines

1. **[Read Verbatim]** After you complete the examination, 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.
2. To pass the examination, you must achieve an overall grade of 80.00 percent or greater, with 70.00 percent or greater on the SRO-only items, if applicable. If you only take the SRO portion of the exam (as a retake or with an upgrade waiver of the RO exam), you must achieve an overall grade of 80.00 percent or better to pass. SRO-upgrade applicants who do take the RO portion of the exam and score below 80.00 percent on that part of the exam can still pass overall, but may require remediation. Grades will not be rounded up to achieve a passing score. Every question is worth one point.
3. For an initial examination, the nominal time limit for completing the examination is 6 hours for the RO exam; 3 hours for the 25-question, SRO-only exam; and 8 hours for the combined RO/SRO exam. Notify the proctor if you need more time.
4. You may bring pens, pencils, and calculators into the examination room; however, programable memories must be erased. Use dark pencil only to facilitate machine grading.
5. Print your name in the blank provided on the examination cover sheet **and** the answer sheet. You may be asked to provide the examiner with some form of positive identification.

6. Mark your answers on the answer sheet provided. A line has been drawn through column 'e' to prevent recording in that column. Be careful to mark the correct column with your answer choice.
7. If you have any questions concerning the intent or the initial conditions of a question, do *not* hesitate to ask them before answering the question. Note that questions asked during the examination are taken into consideration during the grading process and when reviewing applicant appeals. Ask questions of the NRC examiner or the designated facility instructor *only*. A dictionary is available if you need it.

When answering a question, do *not* make assumptions regarding conditions that are not specified in the question unless they occur as a consequence of other conditions that are stated in the question. For example, you should not assume that any alarm has activated unless the question so states or the alarm is expected to activate as a result of the conditions that are stated in the question. Similarly, you should assume that no operator actions have been taken, unless the stem of the question or the answer choices specifically state otherwise. Finally, answer all questions based on actual plant operation, procedures, and references. If you believe that the answer would be different based on simulator operation or training references, you should answer the question based on the *actual plant*.

8. Restroom trips are permitted, but only one applicant at a time will be allowed to leave. Avoid all contact with anyone outside the examination room to eliminate even the appearance or possibility of cheating. You will be escorted to the restroom.
9. When you complete the examination, assemble a package that includes the examination answer sheets and the cover sheet. Give it to the NRC examiner or proctor. Remember to sign the statement on the examination cover sheet indicating that the work is your own and that you have neither given nor received assistance in completing the examination. Leave all other material at your desk. The examination sheets will be collected and retained by the facility.
10. After turning in your examination, leave the examination area as defined by the proctor or NRC examiner. If you are found in this area while the examination is still in progress, your license may be denied or revoked. The examination area is the area within the rope boundaries outside the examination exit door.
11. Do you have any questions?

QUESTION: 001 (1.00)

Annunciator 5002-4N, NSPS INV SOURCE XFR ALT SOURCE, has actuated in the Control Room.

Which ONE of the following describes how the equipment operator can determine if the Divisional NSPS Inverter 1A has automatically transferred from INVERTER to ALTERNATE source?

- a. The Forward Transfer lamp is lit.
- b. The Reverse Transfer lamp is lit.
- c. The Transfer Switch is in the BYPASS position.
- d. The AC Source Select Switch is in the BYPASS position.

QUESTION: 002 (1.00)

The unit is operating at rated power. Component Cooling Water (CC) pump 1A is out of service for repair. Annunciator 5040-1B, AUTO TRIP PUMP/MOTOR, actuates when CC pump 1C trips. A few seconds later annunciator 5003-3D, RECIRC MTR A WDG CLG WTR FLOW LO actuates.

Three minutes later annunciator 5003-1K, RECIRC PMP MTR A OR B TEMP HI actuates.

How can the control room operator determine which Reactor Recirculation (RR) Pump component temperature is causing the alarm?

- a. Direct the Equipment Operator to check RR temperatures at local panel 1B33-P001A(B).
- b. Direct the Equipment Operator to check RR temperatures at local HCU panel.
- c. Check Recirc pump temperatures on Control Room panel 1H13-P614 recorder.
- d. Check Recirc pump temperatures on DCS.

## QUESTION: 003 (1.00)

The plant was operating at 75% of rated power with power ascension in progress. A problem developed in the Feedwater Level Control (FWLC) System resulting in a continuing rise in Reactor Pressure Vessel (RPV) water level. The following are current RPV water level indications:

- DCS Narrow Range RPV water level indicates 52.5 inches
- RX WTR LEVEL C34-R608 Recorder (blue pen - Narrow Range) on P678 indicates 52 inches
- RX HIGH WATER LEVEL TRIP A and C amber trip status lights on P680 are lit
- 5002-1Q, RX HI WTR LVL TRIP, annunciator is alarming

No automatic actions have occurred.

Based on the indications above, which ONE of the following lists required actions in the preferred order to be performed?

- a. Manually scram the reactor then trip the main turbine.
- b. Trip the Main Turbine then manually scram the reactor.
- c. Trip ONE Reactor Feed Pump then trip the Main Turbine.
- d. Trip ONE Reactor Feed Pump then monitor RPV water level for further action.

## QUESTION: 004 (1.00)

The reactor was operating at rated power when a scram occurred. The scram has NOT been reset.

Control Rod 12-45 indication is alternating between green LED lit and blank numerical display. 'CHAN 1 DATA' and 'CHAN 2 DATA' lights are lit.

Select the statement that is applicable to Control Rod 12-45:

- a. Control Rod is full-in.
- b. Control Rod is full-out.
- c. Control Rod position is unknown.
- d. Both reed switches failed for the current Control Rod position.

QUESTION: 005 (1.00)

Which ONE of the following ALWAYS requires entering an Emergency Operating Procedure (EOP)?

- a. Exceeding a plant safety limit.
- b. NOT meeting a Limiting Condition for Operation.
- c. Occurrence of an anticipated operational transient.
- d. Exceeding a pre-defined limit of a specific set of plant parameters.

QUESTION: 006 (1.00)

The plant was operating at rated power. The Instrument Air (IA) header ruptured inside primary containment between the containment wall and 1IA006, Containment Inboard Isolation Valve, causing the containment Instrument Air header to depressurize.

- All automatic actions occurred as designed.
- The Safety mode will function for all SRVs.
- NO OPERATOR ACTIONS ARE PERFORMED.

Which ONE of the following describes the effect of this event on Safety Relief Valve (SRV) operation?

- a. All SRVs will continue to actuate in the Relief mode after automatic alignment to the backup air bottle air supply.
- b. Non-ADS valves will actuate once and ADS valves will continue to actuate on air supply from backup bottle air supply.
- c. Non-ADS valves will NOT actuate in the Relief mode and the ADS valves will actuate ONLY on accumulator pressure.
- d. Non-ADS valves will actuate once and ADS valves will actuate twice on accumulator pressure.

QUESTION: 007 (1.00)

Removing the 'QS' relay before a LOCA trip signal occurs allows continued operation of which of the following?

- a. Main EHC Pump A
- b. Stator Cooling Pump B
- c. Control Rod Drive Pump 1A
- d. RR Pumps Auxiliary Seal Injection Pump

QUESTION: 008 (1.00)

Plant operations are as follows:

- Reactor is at 70% power for performing a deep/shallow control rod exchange.

Select the condition that would cause a control rod to DRIFT OUT following insertion from position 48 to position 12.

- a. CRD flow control valve fails open.
- b. HCU accumulator depressurizes.
- c. Collet piston sticks at the upper limit of travel.
- d. Directional Control Valves 121 and 123 fail open.



QUESTION: 009 (1.00)

The operator took both SLC control switches to RUN and RELEASED. Two minutes later the operator observed light indications shown on the attached figure. Both pumps responded as designed.

Which ONE of the following describes the status of the Standby Liquid Control (SC) system?

- a. One SC pump injecting through squib valve B only.
- b. One SC pump injecting through squib valve A only.
- c. Both SC pumps injecting through one squib valve, the relief valves would be cycling.
- d. Both SC pumps injecting through one squib valve, the relief valves would remain closed.

QUESTION: 010 (1.00)

A reactor startup is in progress with Control Rod 20-21 at position 36 with a failed open "A" channel reed switch. It is desired to withdraw Control Rod 20-21 to position 48.

Which ONE of the following statements is correct concerning continued withdrawal of Control Rod 20-21?

The Reactor Operator . . .

- a. MAY withdraw Control Rod 20-21 ONLY after entering substitute data from the operable reed switch.
- b. MAY withdraw Control Rod 20-21 WITHOUT entering any substitute data from the operable reed switch.
- c. MAY NOT withdraw Control Rod 20-21 because BOTH channels' reed switch for each position is required for RC&IS to be operable.
- d. MAY NOT withdraw Control Rod 20-21 because BOTH channels' reed switches are required by Technical Specifications to be operable.

QUESTION: 011 (1.00)

A startup is in progress when a trip of 125 VDC MCC 1D occurs.

Select the ONE component whose operation COULD be affected by this event.

- a. Source Range Monitor B.
- b. Intermediate Range Monitor H.
- c. Main Steam Line Rad Monitor A.
- d. VG Exhaust Stack Monitor 0RIXPR003.

QUESTION: 012 (1.00)

Which ONE of the following describes the LOWEST power level that will result in a ROD OUT BLOCK initiation from the Source Range Monitoring (SRM) and Intermediate Range (IRM) Systems?

(NOTE: Choices are listed from LOWEST to HIGHEST power level.)

- a. SRM A: 5 cps, SRM B: 3 cps, SRM C: 5 cps, SRM D: 4 cps,  
ALL SRMs are FULLY INSERTED.  
ALL IRMS on Range 1.
- b. SRM A: 120 cps, SRM B: 100 cps, SRM C: 95 cps, SRM D: 140 cps,  
ALL SRMs are PARTIALLY WITHDRAWN.  
ALL IRMS on Range 1.
- c. SRM A: 600 cps, SRM B: 750 cps, SRM C: 700 cps, SRM D: 650 cps,  
ALL SRMs are PARTIALLY WITHDRAWN.  
ALL IRMS on Range 1.
- d. SRM A:  $1.0 \times 10^5$  cps, SRM B:  $1.2 \times 10^5$  cps, SRM C:  $1.1 \times 10^5$  cps,  
SRM D:  $1.2 \times 10^5$  cps,  
ALL SRMs are PARTIALLY WITHDRAWN.  
ALL IRMS on Ranges 2 or 3.

QUESTION: 013 (1.00)

A startup is in progress and power is 65% of rated power. A small fire in Division 2 NSPS Power Dist Panel (C71-P001B) has caused the Distribution Panel to de-energize.

Which ONE of the following components will generate a direct reactor scram signal as a result of this loss of power?

- a. Mode Switch
- b. APRM Channel
- c. Outboard MSIV position sensor
- d. Reactor Recirculation Flow Instrument

QUESTION: 014 (1.00)

Standby Gas Treatment (VG) System has automatically initiated.

- The VG initiation signal is valid.
- NO operator actions associated with the VG system have been performed.

Refer the attached figure and determine which parameter indicates that VG Train A is NOT operating properly.

- a. SGTS TRAIN A INLET FLOW
- b. SGTS TRAIN A OUTLET TEMP
- c. SGTS TRAIN A UPSM HEPA FILT DP
- d. SGTS TRAIN A DNSM HEPA FILT DP

QUESTION: 015 (1.00)

The Div 3 Emergency Diesel Generator is operating in parallel with the Reserve Auxiliary Transformer (RAT).

Which ONE of the following describes the impact, if any, on the two AC power supply breakers of turning OFF the Emergency Diesel Generator (DG) Synchroscope?

- a. ONLY the RAT feed breaker will trip.
- b. ONLY the DG output breaker will trip.
- c. BOTH the RAT feed breaker and DG output breaker will trip.
- d. BOTH the RAT feed breaker and DG output breaker remain closed.

QUESTION: 016 (1.00)

Reactor power is 80%.

Main Turbine Bypass valves are shut. Max Combined Flow Limiter is set at its normal setting.

Refer to the attached figure.

What would be the result of attempting to raise reactor power to 90%?

- a. Reactor power AND Generator load will rise to 90% with no resulting transient.
- b. Reactor power will rise to 90%, Generator load will remain ~ 80%, the reactor will NOT scram.
- c. Main Turbine Bypass valves will remain closed until after the reactor scrams on high RPV pressure.
- d. Main Turbine Bypass valves will open until 85% power AFTER which the reactor will scram on high RPV pressure.

QUESTION: 017 (1.00)

Plant conditions are:

- The Reactor is at rated power.
- Off-Gas Post Treatment Process Radiation Monitor 1RIX-PR035 goes into HIGH ALARM with Off-Gas Post Treatment Process Radiation Monitor 1RIX-PR041 secured for maintenance.

Select the set of three indications at panels 1H13-P845 and 1H13-P870 that represent the correct response of the Off Gas System to this condition.

- a. OFF GAS VENT DISCH ISOL 1N66-F060 closed, SJAЕ SUCTION VALVES 1CA002A/B closed, SJAЕ FINAL STAGE PROCESS FLOW LOW annunciator in alarm.
- b. OFF GAS VENT DISCH ISOL 1N66-F060 closed, OFF GAS STREAM FLOWS 1N66-R620 indicate low, NORMAL OFF GAS FLOW LOW RANGE LOW annunciator in alarm.
- c. ADSORBER TRAIN DISCHARGE VALVE N66-F053 closed, OFF GAS STREAM FLOWS 1N66-R620 indicate low, NORMAL OFF GAS FLOW LOW RANGE LOW annunciator in alarm.
- d. ADSORBER TRAIN DISCHARGE VALVE N66-F053 closed, SJAЕ SUCTION VALVES 1CA002A/B closed, SJAЕ FINAL STAGE PROCESS FLOW LOW annunciator in alarm.

QUESTION: 018 (1.00) **THIS QUESTION WAS DELETED FROM THE EXAMINATION**

The plant is operating at rated power with the following:

Weekly control rod exercising is in progress. The next control rod to be exercised is rod 28-21 which is currently at position 48.

Which ONE of the following identifies the REQUIREMENT regarding where the Control Room Supervisor (CRS) MUST be positioned in order to adequately supervise the performance of this rod movement?

- a. Anywhere within the "At the Controls" area.
- b. Immediately behind the Reactor Operator.
- c. Anywhere within the Main Control Room.
- d. In proximity to the Reactor Operator.

QUESTION: 019 (1.00)

A component being tested for operability has failed to meet the surveillance acceptance criteria.

Failing to meet the acceptance criteria constitutes a failure . . .

- a. to adequately prevent preconditioning.
- b. of the Preventive Maintenance Program.
- c. to comply with the applicable Tech Spec LCO.
- d. to meet the requirements of the Surveillance Program.

QUESTION: 020 (1.00)

RHR Loop B Shutdown Cooling is being secured.

Radiation levels in RHR Loop B are higher than desired.

Which ONE of the following actions is recommended to reduce the radiation levels in RHR Loop B to the desired levels?

- a. Reject RHR Loop flow to Radwaste for cleanup.
- b. Operate RHR Loop in Suppression Pool Cooling mode.
- c. Route RHR Loop flow through Fuel Pool Cleanup filter demineralizer.
- d. Dilute RHR Loop concentration by feed and bleed using Cycled Condensate.

QUESTION: 021 (1.00)

Which ONE of the following conditions may the Control Room Operators conclude that the reactor will remain shut down without consulting the Reactor Engineer?

- a. All control rods are inserted to at least position 04.
- b. One (1) control rod is at position 48, all other control rods are full in.
- c. Two (2) adjacent control rods are at position 24, all other control rods are full in.
- d. Three (3) control rods at position 16 are separated by at least two control rod cells in all directions, all other control rods are full in.

QUESTION: 022 (1.00)

Why does 10CFR50 Appendix R require that the Remote Shutdown Panel Transfer Switches disable the associated Main Control Room control switches?

- a. Defeat automatic operation of safe shutdown equipment.
- b. Allow rapid return of component operation from the main control room.
- c. Prevent short-circuits causing undesired operation or mis-operation of safe shutdown equipment.
- d. Prevent inadvertent operation of controls by non-licensed operators when Control Room is abandoned.

QUESTION: 023 (1.00)

An operator is ready to place the first Reactor Water Cleanup (RT) Filter/Demineralizer (F/D) in service. The most recent chemistry analysis shows I-131 equivalent activity  $1.2 \times 10E^{-4}$  microcuries per gram.

Which ONE of the following describes an allowed action to prevent an unwarranted RT isolation during this evolution?

- a. NO action is allowed due to current iodine level.
- b. Start second RT pump before placing F/D in service.
- c. Install back plane jumpers to bypass RT system isolation trips.
- d. Place RWCU System Leak Detection Bypass switches in BYPASS.



QUESTION: 024 (1.00)

Which ONE of the following describes a basis for Alternate Rod Insertion (ARI) due to high reactor pressure?

- a. ARI limits fuel damage due to pellet expansion to less than 1%.
- b. ARI reduces the challenge to the integrity of the Reactor Coolant Pressure Boundary.
- c. ARI reduces unnecessary safety relief valve operation, due to high pressure, that challenges SRV and SRV piping integrity.
- d. ARI reduces unnecessary safety relief valve operation, due to high pressure, that results in undesired heatup of the Suppression Pool.

QUESTION: 025 (1.00)

What indication that the 781 Switchgear Room fire suppression system has actuated is available to the Control Room Operator?

- a. Alarm and display on PMS
- b. Alarm and display at System XL3 Panel 1H13-P841
- c. Alarm and display at System XL3 Panel 1FP43J
- d. 'HALON SYSTEM ACTUATED' annunciator on Panel 1H13-P800

QUESTION: 026 (1.00)

An ATWS transient occurs and boron must be injected with the Standby Liquid Control System (SLC).

- Reactor pressure is 1000 psig
- SLC Pump A and B control switches were turned to the RUN position.
- SLC SUCT VLV B FM SLC STOR TANK did NOT open.

For these SLC conditions, which ONE of the following describes the expected control room indications of a SUCCESSFUL SLC INITIATION and INJECTION?

- a. Only Pump A running; pump discharge header pressure 1025 psig.
- b. Only Pump A running; pump discharge header pressure 1450 psig.
- c. Both pumps running; pump discharge header pressure 1025 psig.
- d. Both pumps running; pump discharge header pressure 1450 psig.

QUESTION: 027 (1.00)

The unit is operating in normal, full power lineup when a loss of off-site power occurs and the indicating lights for all breakers on the 6.9KV and 4.16KV 1A panels extinguish.

Which ONE of the following components will likely be damaged?

- a. Main Turbine
- b. Recirculation Pump A Motor
- c. Circulating Water Pump B Motor
- d. Motor Driven Reactor Feedwater Pump

QUESTION: 028 (1.00)

Service Air (SA) Dryers 0SA01D and 2SA01D are in service.

2SA01D AFTER-FILTER DP increases to 10.3 psid. 2SA01D Dryer outlet pressure is 100 psig and dropping at 10 psi per minute.

Which ONE of the following describes the impact of this event on 2SA01D Dryer operation and the expected Operator response?

- a. 2SA01D has automatically isolated; place the spare Dryer in service.
- b. 2SA01D bypass has automatically opened; place the spare Dryer in service and isolate the affected Dryer.
- c. 2SA01D will isolate in about 3 minutes; open the Dryer bypass valve then place the spare Dryer in service.
- d. 2SA01D bypass will open in about 3 minutes; place the spare Dryer in service and isolate the affected Dryer.

QUESTION: 029 (1.00)

As addressed by CPS fuel handling procedures, which ONE of the following is a direct responsibility of the Reactor Operator at the controls during Refueling activities?

- a. Verify in-core coordinates for fuel placement.
- b. Maintain the Control Room Tag Board updated.
- c. Terminate Core Alterations at any time with due cause.
- d. Act as the single point of contact for all Refuel Floor Communications.

QUESTION: 030 (1.00)

According to RP-AA-401, Operational ALARA Planning and Controls, which ONE of the following activities will require an ALARA OR a micro-ALARA Plan?

- a. Perform Equipment Operator D rounds.
- b. Change Emergency Diesel crankcase oil.
- c. Replace Service Building Ventilation inlet filter.
- d. Remove foreign material from the Suppression Pool.

QUESTION: 031 (1.00)

A failure of Division 3 Battery Charger has occurred.

- Temporary battery charger has been connected at Div 3 DG CT/PT Cubicle.
- A loss of off-site power (LOOP) occurs.
- Division 3 DG starts and loads 4160 VAC Bus 1C1.
- Division 3 battery power is depleted.

What is the response of the Division 3 Emergency Diesel Generator (EDG) to the loss of DC power under these conditions?

Division 3 Diesel Generator will

- a. trip and the generator output breaker will open.
- b. coast to a stop and the generator output breaker will remain closed.
- c. continue supplying 4160 VAC Bus 1C1 and automatically maintain bus frequency and voltage.
- d. continue supplying 4160 VAC Bus 1C1 but will NOT automatically maintain bus frequency and voltage.

QUESTION: 032 (1.00)

Which ONE of the following is protected by requiring Reactor Pressure Vessel (RPV) blowdown before exceeding the Safety Relief Valve Tail Pipe Limit curve?

- a. RPV design pressure.
- b. Containment design pressure.
- c. Containment design temperature.
- d. Drywell to Containment design differential pressure.

QUESTION: 033 (1.00)

The Reactor Pressure Vessel was at rated pressure with Suppression Pool water level at 15 feet when ADS automatically initiated.

Which ONE of the following describes the expected plant response?

- a. Steam from the SRVs will cause excessive Containment pressure.
- b. The Low pressure ECCS pumps will cavitate due to insufficient NPSH.
- c. Reactor Core Isolation Cooling (RCIC) will isolate due to uncovering the RCIC turbine exhaust line.
- d. The top two Drywell to Containment horizontal vents will uncover resulting in excessive Containment pressure.

QUESTION: 034 (1.00)

The plant was at near rated power when a LOCA occurred. Both SGTS trains auto started. Train B of SGTS has been placed in PTL per procedure. The following parameters exist:

- SGTS A flow is 4000 scfm.
- Secondary Containment D/P is 0.0 inches of water.

The Station total radioactivity release

- a. is an elevated release.
- b. cannot be determined.
- c. is being monitored by the SGTS exhaust stack radiation monitor.
- d. is being monitored by the SGTS exhaust stack radiation monitor and the HVAC stack monitors.

QUESTION: 035 (1.00)

A Reactor Recirculation system pipe break has occurred, causing a reactor scram due to high Drywell pressure. H<sub>2</sub>/O<sub>2</sub> Monitors were started 10 minutes ago. SPDS indicates Drywell H<sub>2</sub> concentration 3.2%. SPDS indicates Containment H<sub>2</sub> concentration 0.0%.

The CRS has requested the highest Drywell and Containment values for Hydrogen concentration.

At this time, your response to the CRS should be?

- a. 3.2% as indicated on SPDS
- b. I need to obtain a printout from the H<sub>2</sub>/O<sub>2</sub> Monitors.
- c. I need to wait until SPDS indicates the highest value.
- d. I need to wait until the H<sub>2</sub>/O<sub>2</sub> monitors finish warming.

QUESTION: 036 (1.00)

A reactor coolant pressure boundary leak has occurred inside the Drywell.

- All control rods are fully inserted
- Drywell pressure is 4.6 psig and rising slowly
- Reactor water level has just reached -145.5 inches and is dropping slowly
- Reactor pressure is 885 psig and rising slowly
- CRD is the only high pressure injection source available
- All low pressure ECCS pumps have started

What is the status of the Automatic Depressurization System (ADS) and what procedural actions are required to mitigate the consequences of these conditions?

- a. ADS has automatically initiated. Verify the seven (7) ADS valves are open.
- b. ADS will automatically initiate in 105 seconds. Inhibit ADS at the direction of the CRS.
- c. ADS will automatically initiate in 105 seconds. Immediately inhibit ADS and notify the CRS.
- d. ADS will automatically initiate in 6 minutes. Reset the RPV water level low ADS seal-in logic.

QUESTION: 037 (1.00)

A fire alarm has occurred on MCR panel H13-P661 even though no smoke is present it cannot be immediately confirmed that a fire does NOT exist.

What action must be taken?

- a. Place both ADS Inhibit switches in INHIBIT.
- b. Place the Division 1 SRV handswitches in OFF.
- c. Place the Division 2 SRV handswitches in OFF.
- d. Place the Mode Switch in SHUTDOWN and close the MSIVs.

QUESTION: 038 (1.00)

CPS uses selective tripping in the electrical distribution system.

Selective tripping...

- a. isolates loads from faulty power supplies to protect the loads from damage.
- b. isolates faults as close as possible to the fault to protect the power distribution system.
- c. isolates non-safety related loads from safety related busses during accident conditions to protect the safety related busses.
- d. isolates non-safety power supplies from safety related busses during accident conditions to protect the safety related busses.

QUESTION: 039 (1.00)

Which ONE of the following Alternate Injection Systems would require the Turbine Building Elevation 737' to be accessible in order for plant personnel to perform local actions?

- a. Fire Protection System
- b. Shutdown Service Water
- c. Cycled Condensate System
- d. Fuel Pool Cooling and Cleanup System



QUESTION: 040 (1.00)

Below is a partial list of plant alarms

1. General Alarm 2. Plant Evacuation 3. Containment Evacuation 4. Fuel Building Evacuation

Which one of the following combination of alarms can be actuated from the Remote Shutdown Panel?

- a. 1 only
- b. 1 and 2 only
- c. 1, 2 and 3 only
- d. 1, 2, 3 and 4

QUESTION: 041 (1.00)

The plant was operating at near rated conditions when the Hydrogen Water Chemistry system automatically shutdown. The problem has been corrected and the Hydrogen Water Chemistry system is being restarted.

What effect will the restart of the Hydrogen Water Chemistry system have on the Main Steam Line and Off Gas Post Treatment process radiation indications?

- |    |   |                           |
|----|---|---------------------------|
| a. | Main Steam Line<br>Off Gas Post Treatment | Increase<br>Increase      |
| b. | Main Steam Line<br>Off Gas Post Treatment | Decrease<br>Decrease      |
| c. | Main Steam Line<br>Off Gas Post Treatment | Increase<br>Stay the same |
| d. | Main Steam Line<br>Off Gas Post Treatment | Decrease<br>Stay the same |

QUESTION: 042 (1.00)

The Div 1 Emergency Diesel Generator is operating in parallel with the Reserve Auxiliary Transformer (RAT).

A valid High Drywell Pressure signal is received.

Which ONE of the following describes the impact, if any, on the Div 1 Bus AC power supply breakers?

- a. ONLY the RAT feed breaker will trip.
- b. ONLY the DG output breaker will trip.
- c. BOTH the RAT feed breaker and DG output breaker remain closed.
- d. BOTH the RAT feed breaker and DG output breaker will trip and the ERAT feed breaker will close.

QUESTION: 043 (1.00)

Which of the following describes the double clutch method of withdrawing a control rod?

- a. Depress the INSERT push-button for up to 2 minutes, release the INSERT and immediately depress the CONT WITHDRAW and WITHDRAW push-buttons.
- b. Depress the IN TIMER SKIP and WITHDRAW push-buttons, release the IN TIMER SKIP and immediately depress the CONT WITHDRAW push-button.
- c. Depress the IN TIMER SKIP push-button, release the IN TIMER SKIP and immediately depress the CONT WITHDRAW and WITHDRAW push-buttons.
- d. Depress the INSERT and WITHDRAW push-buttons, release the INSERT and immediately depress the CONT WITHDRAW push-button.

QUESTION: 044 (1.00)

The plant in Mode 3. The B Recirc Loop is shutdown. The following plant conditions exist:

- Steam Dome temperature is 487°F
- Bottom Head Drain temperature is 417°F
- A RR Loop suction temperature is 467°F
- B RR Loop suction temperature is 415°F
- A RR Loop flow is 15,500 gpm

Can the B Recirc Loop be restarted and why or why not?

- a. Yes, all required limits are met.
- b. No, to prevent excess thermal stress.
- c. No, to prevent excess vibration of the reactor internal components.
- d. No, to prevent damage to the fuel cladding that would result from the sudden increase in power due to the injection of cold water.

QUESTION: 045 (1.00)

The Reactor is in MODE 4 with the following conditions:

- BOTH Reactor Recirculation Pumps shutdown.
- BOTH Control Rod Drive Pumps are secured.
- Reactor Water Cleanup is NOT in service.

A spurious Group 3 Isolation has occurred. Reactor water level is 12 inches Narrow Range.

Which one of the following actions is required?

- a. Raise Reactor water level above 44 inches on Shutdown Range.
- b. Start both Control Rod Drive Pumps and maximize CRD injection.
- c. Restore Reactor water level to between Level 3 and Level 8 Narrow Range.
- d. Start Reactor Water Cleanup with suction from the Reactor Recirculation loops ONLY.

QUESTION: 046 (1.00)

The plant is operating at 25% power. The Main EHC System Emergency Trip System pressure drops to 350 psig.

Using the attached DCS displays.

What will be the final steady state Feedwater temperature entering the Reactor?

- a. 87°F
- b. 90°F
- c. 286°F
- d. 312°F

QUESTION: 047 (1.00)

A pipe break outside containment has resulted in a breach of the reactor pressure boundary that CANNOT be isolated. Div. 1 low pressure ECCS is maintaining RPV water level above Level 3. All control rods are fully inserted. RPV pressure is <50 psig and decreasing.

When Suppression Pool water level drops below 18.6 feet, monitor Suppression Pool temperature on

- a. SPDS or recorders on P601.
- b. recorders on P601 and P678.
- c. recorders on P678 or on SPDS.
- d. SPDS only since inputs to recorders are not valid below 18.6 feet.

QUESTION: 048 (1.00)

A High Off-Site Release Rate is in progress. The Shift Manager is determining PARs. You have been directed to obtain wind speed and direction. When checked, the Environmental Monitoring recorders on 1H13-P826 are displaying a straight line.

Where can wind speed and direction be obtained?

- a. RTView
- b. Performance Monitoring System
- c. Microwave Tower - TI OMNI 800 Terminal
- d. Area and Process Radiation Monitoring System

QUESTION: 049 (1.00)

The Reactor Water Cleanup System connects to low pressure piping in the reject line going to Radwaste.

What protects this piping from over-pressurization?

- a. A high flow closure of the Drain Flow Regulator 1G33-F033
- b. A relief valve that discharges to the Backwash Receiving Tank
- c. A high pressure closure of the Drain Flow Regulator 1G33-F033
- d. A relief valve that discharges to the reject line going to the Main Condenser

QUESTION: 050 (1.00)

The plant is operating at near rated power. The Service Air supply line to the Screen House and the Makeup Water Pump House ruptures.

What automatic actions will occur and why?

- a. MSIV closure Reactor scram due to loss of air pressure.
- b. Level 3 Reactor scram due to the Feedwater minimum flow valves failing open.
- c. Isolation of the Turbine Building Service Air Ring Header to prevent a loss of Instrument Air pressure to the Containment.
- d. Isolation of the Turbine Building Instrument Air Ring Header to prevent a loss of Instrument Air pressure to the Containment.

QUESTION: 051 (1.00)

Irradiated fuel is being transferred from the Containment fuel storage pool to the Fuel Building spent fuel storage pool.

1RIX-AR016 SPENT FUEL STORAGE FB 755' AH-117 ALERT and HIGH alarms simultaneously actuate.

The alarm procedure directs you to determine if the alarm is due to a spike.

How is this accomplished?

- a. Direct Radiation Protection to survey the area.
- b. Access DNA History Plot for the affected instrument.
- c. Access the digital recorder history for the affected instrument.
- d. Direct the Equipment Operator to verify radiation level on local instrument.

QUESTION: 052 (1.00)

The plant was operating at near rated power when drywell pressure increased to 1.9 psig. An assessment of the radiological conditions in the Drywell is required.

Which of the following will provide the most accurate data on the conditions in the Drywell?

- a. Fission Product Monitor
- b. Accident Range Monitors
- c. Drywell Continuous Air Monitor
- d. Drywell High Range Gamma Radiation Monitors

QUESTION: 053 (1.00)

The plant was operating at near rated conditions when a Station Blackout occurred.

It is now two (2) hours later.

RCIC is being used for Reactor water level and pressure control.

How can you, as the Control Room Operator, determine if a Suppression Pool high temperature entry condition to EOP-6 exists?

- a. Must obtain temperatures from IMD personnel.
- b. Monitor Suppression Pool temperature recorder on 1H13-P678.
- c. Monitor Suppression Pool temperature recorder on 1H13-P601.
- d. Monitor Suppression Pool temperature recorder on 1H13-P638.

## QUESTION: 054 (1.00)

The plant was at near rated power when a LOCA occurred. The following plant conditions exist:

- All Control Rods are fully inserted.
- Reactor Pressure is 200 psig.
- Reactor Water Level is -155 inches on Wide Range and steady.
- The Reserve Auxiliary Transformer has Locked out.
- The only ECCS pumps that will run are LPCI A and B which are injecting at maximum.
- Containment Temperature is 180°F and rising.

You have been directed to initiate Containment Spray to maintain Containment integrity. What action should you take?

- a. Initiate ONE loop of Containment Spray only.
- b. Initiate BOTH loops of Containment Spray.
- c. Do NOT initiate either loop of Containment Sprays.
- d. Initiate Shutdown Service Water in the Containment Spray mode of operation.

## QUESTION: 055 (1.00)

The plant is operating a near rated power. The following conditions exist:

- Containment Pressure = -0.09 psig
- Drywell Pressure = 0.10 psig
- Containment Temperature = 110°F
- Drywell Temperature = 149°F
- Suppression Pool Temperature = 93°F

Which ONE of the following Technical Specifications must be entered?

- a. 3.6.5.4 Drywell Pressure
- b. 3.6.5.5 Drywell Air Temperature
- c. 3.6.1.5 Primary Containment Air Temperature
- d. 3.6.2.1 Suppression Pool Average Temperature



QUESTION: 056 (1.00)

A plant shutdown is in progress due to HPCS and RCIC being Inoperable and unavailable.

- The plant is at 250 psig and performing a cooldown per CPS 3006.01 Unit Shutdown.
- The 3 inch Instrument Air line that supplies the non-ADS SRVs ruptures in the Drywell.

Assuming no operator actions and that Reactor pressure remains at 250 psig, which of the following will occur?

- a. LPCS and LPCI A, B and C will be running on minimum flow.
- b. LPCS will be injecting and LPCI A, B and C will be running on minimum flow.
- c. LPCS and LPCI C will be injecting and RHR A and B will continue running in Shutdown Cooling.
- d. LPCS will be injecting, LPCI C will be running on minimum flow and RHR A and B will continue running in Shutdown Cooling.

QUESTION: 057 (1.00)

A small break LOCA in the Drywell raised Drywell pressure to 3.9 psig. All low pressure injection systems are running.

- At Time 'T' RPV water level dropped below L-1.
- At 'T + 30 sec.' ECCS restored RPV water level above L-1.
- NO operator actions have been performed.

Which ONE of the following describes the current status of the Automatic Depressurization System (ADS) actuation logic?

- a. ADS will actuate 75 sec. after RPV water level again drops below L-1.
- b. ADS will actuate at T + 105 sec.
- c. ADS 105 sec. timer has reset.
- d. ADS will actuate at T + 6 min.

QUESTION: 058 (1.00)

Following entry into EOP-1A, ATWS RPV Control, CPS 4411.08, Alternate Control Rod Insertion, directs defeating ATWS interlocks as required.

What is accomplished by defeating ATWS interlocks?

- a. It bypasses RPS logic trips to drain the scram discharge volume and insert control rods.
- b. It bypasses the scram signal to allow all rods to be fully inserted using normal insertion with CRD.
- c. It vents the over piston area and enables control rod insertion using individual control rod scram switches.
- d. Allows the scram to be reset, the scram discharge volume drained, and the CRD accumulators recharged for subsequent manual scram attempts.

QUESTION: 059 (1.00)

EOP-9 has been entered and you have been directed to restart Turbine Building Ventilation.

From where is Turbine Building Ventilation restarted?

- a. 762' Turbine Building
- b. 719' Control Building
- c. 762' Radwaste Building
- d. 762' Diesel Generator Building

QUESTION: 060 (1.00)

The plant is near rated power. Reactor Recirc A LFMG needs to be started for periodic vibration monitoring.

Closing which one of the following breakers will start the A LFMG?

- a. Bkr 1A
- b. Bkr 2A
- c. Bkr 3A
- d. Bkr 5A

QUESTION: 061 (1.00)

The plant is near rated conditions when a Feed Water Pump trip causes reactor water level to drop to -10 inches and then recover to normal. The reactor does NOT scram. The RO places the Mode Switch in SHUTDOWN, arms and depresses the Manual Scram push buttons and initiates Div 1 of ARI. The RO then observes that all Control Rods are inserted. All other automatic actions occur.

What is the status of the Reactor Recirc Pumps?

- a. Both pumps are running in fast speed.
- b. Both pumps are running in slow speed.
- c. Pump A is off and Pump B is running in fast speed.
- d. Pump A is off and Pump B is running in slow speed.

QUESTION: 062 (1.00)

The following condition exists pertaining to the APRMs

- Sensor Bypass switches are in Normal
- 17 LPRMs bypassed in channel "C"
- 18 LPRMs bypassed in channel "D"
- APRM "B" AGAF is 0.95

APRM channel "A" is deenergized.

What is the effect, if any, of the above conditions?

- a. Reactor automatically scrams immediately.
- b. Reactor remains critical but a Rod Withdrawal Block is initiated.
- c. Reactor automatically scrams after the OPRMs reach 20 counts.
- d. No automatic actions but Technical Specifications actions are required.

QUESTION: 063 (1.00)

The unit was operating in normal, full power lineup.

- A small break LOCA occurred, dropping RPV water level to -52 inches.
- HPCS and RCIC started and raised RPV water level to Level 8.
- Current RPV water level is 30 inches and slowly lowering.
- RCIC has been placed in normal injection lineup for RPV water level and RPV pressure control.
- RCIC Storage Tank level instruments fail low.

Assuming NO additional operator actions are performed which ONE of the following automatic actions will occur next?

- a. RCIC turbine trips.
- b. RCIC suction transfers.
- c. HPCS injection valve opens.
- d. HPCS minimum flow valve opens.

QUESTION: 064 (1.00)

Given the following conditions:

- The plant is in Cold Shutdown.
- Both loops of Shutdown Cooling are in operation.
- A logic system failure causes a trip of the Div 1 channel of Containment and Reactor Vessel Isolation Control System for isolation Groups 2 and 3.

Assuming no operator actions, what would be the expected change in Reactor Vessel Temperature and RHR "B" Heat Exchanger Outlet SSW Temperature indications ?

	Reactor Vessel Temperature	RHR "B" Heat Exchanger Outlet SSW Temperature
a.	Raise	Raise
b.	Raise	Lower
c.	Remain the Same	Remain the Same
d.	Lower	Lower

QUESTION: 065 (1.00)

The following annunciators were just received:

- 5004-2B, DIV 1 OR 4 DWL HI PRESS TRIP
- 5005-2B, DIV 2 OR 3 DWL HI PRESS TRIP

Concerning the Reactor Recirculation (RR) system, which ONE of the following is the Control Room Operator required to perform?

- a. Emergency shutdown RR pumps within one minute.
- b. Shut RR pumps Seal Stage Shutoff valve immediately.
- c. Trip RR pumps and close the RR Flow Control valves immediately.
- d. Start the Recirc Pump Auxiliary Seal Injection Pump within one minute.

QUESTION: 066 (1.00)

The plant is performing a down power to shift Rod patterns.

- Annunciator 5007-4D, High Vibr Turb Shaft (Pre Trip), alarms.
- NO other annunciators are LIT on this panel.
- Bearing # 9 indicates 9 mils vibration and increasing.

(1) If NO operator action is taken, what will be the impact on the Main Turbine?

(2) What operator actions should be taken at this time?

- a. (1) The Main Turbine will trip.  
(2) Scram the reactor, trip the Main Turbine and fully open the vacuum breaker until Turbine speed is less than 1200 RPM.
- b. (1) The Main Turbine will NOT trip.  
(2) Scram the reactor, trip the Main Turbine and fully open the vacuum breaker until Turbine speed is less than 1200 RPM.
- c. (1) The Main Turbine will trip.  
(2) Scram the reactor, trip the Main Turbine and reduce vacuum to no lower than 24" Hg.
- d. (1) The Main Turbine will NOT trip.  
(2) Scram the reactor, trip the Main Turbine and reduce vacuum to no lower than 24" Hg.

QUESTION: 067 (1.00)

The unit is operating at near rated conditions.

Select the statement that describes the effect on the Condensate (CD) system of turning the SJAE CDSR 1A/1B selector switch clockwise one position from the "BOTH" position and the reason for that effect.

- a. CD flow and pressure reduction causes low Feedwater pump suction pressure due to SJAE Condenser/OG Recombiner inlet isolation valve 1CD006B closure.
- b. CD flow and pressure remain stable as SJAE Condenser/OG Condenser inlet isolation valve 1CD006A closes and the SJAE Condenser/OG Recombiner bypass valve 1CD066A opens.
- c. SJAE Condenser/OG Recombiner inlet isolation valve 1CD006A closes, which lowers CD flow and CB pressure because response of the bypass valve 1CD066A is too slow to adequately compensate.
- d. CD flow and pressure are reduced as SJAE Condenser/OG Recombiner inlet isolation valve 1CD006B closes then returns to previous values as the SJAE Condenser/OG Recombiner bypass valve 1CD066B opens.

QUESTION: 068 (1.00)

The plant is operating at near rated conditions with all systems in a normal lineup.

The equalizing valve on the level transmitter selected for input to the feedwater level control system vibrates open.

With no operator action, what will be the response of the plant and why?

- a. The reactor will scram on Level 8, due to the level transmitter indicating a low level.
- b. Reactor water level will increase but stabilize at less than Level 8 due to feed flow/steam flow mismatch.
- c. The reactor will scram on Level 3, due to the level transmitter indicating a high level.
- d. Reactor water level will decrease but stabilize at greater than Level 3 due to feed flow/steam flow mismatch.

QUESTION: 069 (1.00)

A plant cool down is in progress with Reactor pressure at 750 psig.

- The MDRFP is unavailable and Reactor water level is being controlled with the A TDRFP.
- The A TDRFP is being controlled with M/A Station in manual.
- The A TDRFP is at 2370 rpm and Reactor water level is slowly increasing.

What action must be taken to maintain Reactor water level in the normal operating band?

- a. Shift Feedwater level control to the Condensate Booster Pumps.
- b. Depress the DECREASE push button on the A TDRFP M/A Station.
- c. Shift the TDRFP to the Startup Level Controller and DECREASE push button.
- d. Shift the A TDRFP to the Manual Potentiometer and turn the potentiometer counter clockwise.



QUESTION: 070 (1.00)

Refer to the attached figure.

- 1RIX-PR006A indicates 12 mr/hr
- 1RIX-PR006B indicates 8 mr/hr
- 1RIX-PR006C indicates 11 mr/hr
- 1RIX-PR006D indicates 7 mr/hr

(1) Are the alarming annunciators expected AND

(2) What are the required operator actions?

- a. (1) Yes  
(2) Place the control switches for 1VF04Y/9Y and 1VF06Y/7Y in OPEN and then direct C area to start Fuel Building Ventilation
- b. (1) No  
(2) Place the control switches for 1VF04Y/9Y and 1VF06Y/7Y in OPEN and then direct C area to start Fuel Building Ventilation
- c. (1) Yes  
(2) Place the control switch for a Standby Gas Treatment Fan in START
- d. (1) No  
(2) Place the control switch for a Standby Gas Treatment Fan in START

QUESTION: 071 (1.00) **THIS QUESTION WAS DELETED FROM THE EXAMINATION**

The plant is operating at near rated conditions when the following annunciators alarm:

- 5000-2A F-D INFL CNDCT HI-LO
- 5000-2B F-D EFL CNDCT HI-LO
- 5000-2C F-D System Trouble

The following RWCU parameters indicate:

- RWCU Filter Demin A flow indicates 0 gpm.
- RWCU Filter Demin B flow indicates 250 gpm
- RWCU Filter Demin B effluent conductivity indicates 1.0 s/cm

Which one of the following would occur as a result of this event?

- a. Reactor power increases and Main Steam Line radiation increases.
- b. Reactor power decreases and Main Steam Line radiation increases.
- c. Reactor power decreases and Main Steam Line radiation decreases.
- d. Reactor power remains stable and Main Steam Line radiation remains stable.

QUESTION: 072 (1.00)

The plant is operating at near rated power with all systems in normal lineups. A two (2) gallon per minute leak develops on the CCW expansion tank drain line. The relay activated by a CCW expansion tank Low Low Low Level fails so that it will NOT change state.

With no operator action, what will be the effect of this condition?

- a. The CCW expansion tank makeup valve will open and maintain level in the expansion tank.
- b. The Reactor will scram on High Scram Discharge Volume Level prior to the MSIV closure scram.
- c. The Reactor will scram on MSIV closure prior to the High Scram Discharge Volume Level scram.
- d. The CCW expansion tank makeup valve will open, fill the expansion tank and

pressurize the tank to the relief set point.

## QUESTION: 073 (1.00)

The plant is in Mode 4 with RHR B in Shutdown cooling.

- Reactor coolant temperature is 180°F.
- Lake temperature is 80°F.
- Plant cooldown rate is 50°F/hr.
- Decay heat will decrease by 60% over the next hour.
- 1E12-F003B, RHR B Hx Outlet Valve is 60% open.
- 1E12-F048B, RHR B Hx Bypass Valve is 50% open.

Assume that all heat being removed is from decay heat and ambient losses remain constant.

Which one of the following will maintain the 50°F/hr cooldown rate for the next hour?

- a. Throttle open 1E12-F048B, RHR B Hx Bypass Valve.
- b. Throttle open 1E12-F003B, RHR B Hx Outlet Valve.
- c. Start an additional Plant Service Water Pump.
- d. Leave components in current status.

## QUESTION: 074 (1.00)

A loss of offsite power and small break LOCA has occurred. LPCS and RHR A failed to start and the Div 1 Diesel Generator has been loaded to 600 KW for 12 hours.

What effect, if any, has this had on the Div 1 Diesel Generator and what actions need to be performed?

- a. This has had no adverse effect on the Diesel Generator and the engine may be immediately shutdown.
- b. This has caused a buildup of oil in the exhaust system and the engine needs to be loaded to approximately 1600 KW for 30 minutes.
- c. This has had no adverse effect on the Diesel Generator and the engine may be shutdown after it has been run at idle speed for 30 minutes.
- d. This has caused a buildup of oil in the exhaust system and the engine needs to be run at idle speed for 30 minutes.

QUESTION: 075 (1.00)

The plant is operating at near rated power. HPCS is running "tank to tank" mode per CPS 9051.01, HPCS Pump and HPCS Water Leg Pump Operability.

A spurious HPCS initiation signal is received.

NO other systems are affected.

What effect if any does this have on Reactor Pressure and Reactor Power?

- a. Reactor Pressure increases, Reactor Power increases.
- b. Reactor Pressure decreases, Reactor Power increases.
- c. Reactor Pressure decreases, Reactor Power decreases.
- d. Reactor Pressure and Reactor Power remain the same.

QUESTION: 076 (1.00)

The plant is operating at near rated power in the middle of summer.

- Several SRVs are leaking.
- Yesterday at 1500 Suppression Pool temperature was 97°F
- Today at 1500 Suppression Pool temperature is 107.8°F

The CRS should direct the panel operators to perform

- a. CPS 3006.01, Unit Shutdown and notify all onsite personnel via a plant announcement.
- b. CPS 4100.01, Reactor Scram and notify Plant Management only.
- c. CPS 3006.01, Unit Shutdown and notify Plant Management only.
- d. CPS 4100.01, Reactor Scram and notify all onsite personnel via a plant announcement.

QUESTION: 077 (1.00)

The following plant conditions exist:

- ALL AC power has been lost.
- Reactor water level and pressure are being controlled with RCIC.
- Reactor water level is -10 inches and slowly lowering.
- Reactor pressure is 1075 psig.
- Suppression Pool temperature is 145°F.
- Suppression Pool level is 17.0 feet.

Which of the following actions must be directed?

- a. Blowdown
- b. Depressurize RPV at less than 100°F/hr
- c. Depressurize RPV rapidly using main turbine bypass valves
- d. Stabilize RPV pressure below 1065 psig and minimize depressurization

QUESTION: 078 (1.00)

A reasonable expectation of operability does NOT exist a for piece of equipment and the onshift SRO determines that an OPERABILITY determination evaluation is required in accordance with OP-AA-108-115, Operability Determinations.

Which ONE of the following procedures is PRIMARILY used to track the status of the equipment?

- a. LS-AA-125 Corrective Action Program Procedure
- b. OP-AA-108-104 Technical Specification Compliance
- c. OP-AA-108-105 Equipment Deficiency Identification and Documentation
- d. OP-AA-108-111 Adverse Condition Monitoring and Contingency Planning

QUESTION: 079 (1.00)

An event has occurred and the TSC has NOT yet been activated.

Containment Venting that will exceed release rate limits is required per EOP-6, Primary Containment Control.

The CRS shall

- a. proceed with Containment venting with no additional authorization.
- b. proceed with Containment venting only after authorization from the Shift Manager.
- c. proceed with Containment venting only after authorization from the Plant Manager.
- d. delay Containment venting until the TSC has Command and Control and the venting is authorized by the Station Emergency Director.

QUESTION: 080 (1.00)

Which one of the following events must be reported to the NRC?

- a. LCO 3.0.3 is entered and then exited within one (1) hour with NO power reduction initiated.
- b. The plant is in Cold Shutdown and Primary Containment temperature has been 120°F for three (3) days.
- c. It is discovered that the Tech Spec Surveillance for Primary Containment temperature has NOT been performed for three (3) days. The surveillance is immediately performed with satisfactory results.
- d. Primary Containment temperature has been 120°F for two (2) hours. It is estimated that it will take ten (10) hours to restore Containment Ventilation. A plant shut down is commenced to fix this problem and other problems.

QUESTION: 081 (1.00)

Which one of the following isolations initiated by LCO 3.3.6.1, Primary Containment and Drywell Isolation Instrumentation, directly prevents a Safety Limit violation?

- a. RHR System - high pressure
- b. Main Steam Line - low pressure
- c. Primary Containment - high drywell pressure
- d. Reactor Water Cleanup system - SLC initiation



QUESTION: 082 (1.00)

The plant is operating at near rated power. The A RO reports parameters that have a potential for core shroud cracking and that NSED should be notified.

Who else must be notified?

- a. NRC
- b. Reactor Engineering
- c. Reactor Engineering and Radiation Protection
- d. Reactor Engineering, Radiation Protection and Chemistry

QUESTION: 083 (1.00)

The plant is operating at near rated conditions.

The attached data has been extracted from the last four (4) Jet Pump Operability Tests.

Assuming any TRENDS continue, what action will be required and what is the bases for this action?

- a. Place the plant in Hot Shutdown to prevent a decrease in the blowdown area during a LOCA.
- b. Shut down one Recirculation Loop to ensure there is sufficient flow coastdown during a LOCA.
- c. Shut down one Recirculation Loop to maintain fuel thermal margins during abnormal operational transients.
- d. Place the plant in Hot Shutdown to place the plant in a condition where the Recirculation System is NOT required.

QUESTION: 084 (1.00)

The plant is operating at near rated conditions. Sixteen (16) minutes ago a small fire caused a loss of all power to panel 1H13-P630, NSSS Annunciator Electronics Cabinet. The fire self extinguished in 5 minutes.

The A RO informs you that a Main Turbine Trip and Reactor Scram have just occurred and NO annunciators have alarmed.

Which one of the following is required?

- a. Declare an Unusual Event per HU6
- b. Declare an Unusual Event per MU6
- c. Declare an Alert per MA6
- d. Declare a Site Area Emergency per MS6

QUESTION: 085 (1.00)

The plant is operating at near rated power. Both trains of SLC are inoperable. It is estimated that it will take one (1) week to restore either train of SLC.

Which one of the following is the EARLIEST condition that meets Technical Specification requirements?

Note: choices are listed EARLIEST to LATEST.

	Reactor Mode Switch	Average Reactor Coolant Temperature	Reactor Vessel Head Closure Bolts
a.	SHUTDOWN	208°F	fully tensioned
b.	SHUTDOWN	198 °F	fully tensioned
c.	REFUEL	150 °F	fully tensioned
d.	SHUTDOWN	198 °F	detensioned

QUESTION: 086 (1.00)

A loss of Service Air/Instrument (SA/IA) Pressure with the reactor at 90% resulted in the following conditions:

Reactor scrammed, three (3) rods indicate position 02 all other rods are full in. RPV pressure is being manually controlled 800 to 1050 psig with RCIC and SRVs. Equalizing header pressure is 0 psig.

At this time SA/IA pressure is increasing and is at the value shown in the attached figure.

Which of the following actions should ROs be directed to perform NEXT?

- Inhibit ADS
- Place all SRV control switches to OFF
- Place MSIVs control switches to CLOSE
- Open IA ring header to the Control Building

QUESTION: 087 (1.00)

You are the CRS. The A Reactor Operator informs you that Drywell Average Air Temperature indicates 155°F on SPDS.

This (1) exceed the Technical Specification Limit, which is based on NOT exceeding (2) during a DBA LOCA.

- a. (1) DOES  
(2) 330°F in the drywell
- b. (1) DOES NOT  
(2) 330°F in the drywell
- c. (1) DOES  
(2) 185°F in the containment
- d. (1) DOES NOT  
(2) 185°F in the containment

QUESTION: 088 (1.00)

The plant was at near rated conditions.

- One (1) minute ago both Recirc Pumps tripped to OFF due to a spurious signal.
- All automatic actions occurred.

What procedure should panel operators be directed to perform to control Reactor Water Level?

- a. 4002.01, Abnormal RPV Level-Loss of Feedwater at Power
- b. 4008.01, Abnormal Reactor Coolant Flow
- c. 4100.01, Reactor Scram
- d. EOP-1, RPV Control

QUESTION: 089 (1.00)

The plant is operating at near rated conditions.

- Annunciator 5002.01, REACTOR PRESSURE HI is received.
- DCS indicates Reactor pressure is 1047 psig.

Which one of the following describes the LATEST time that action to restore Reactor Pressure must be taken and the bases for this?

- a. 15 minutes; to maintain a valid analysis for MCPR.
- b. 30 minutes; to maintain a valid analysis for MCPR.
- c. 15 minutes; to maintain a valid analysis for LHGR.
- d. 30 minutes; to maintain a valid analysis for LHGR.

QUESTION: 090 (1.00)

The plant was operating at near rated conditions. The Main Control Room has been evacuated due to toxic gas. No Main Control Room actions could be performed. Reactor pressure and water level control have been established at the Remote Shutdown Panel. Required actions from outside the Main Control Room have been performed.

Twenty (20) minutes later, the CRS is informed that one SRV has been continuously open since the Remote Shutdown Panel was manned and a second SRV has been cycling periodically.

(1) Reactor Power is determined to be (2) What Emergency Classification must be declared?

- a. (1) Between 6% and 14% (2) Alert
- b. (1) Between 15% and 23% (2) Alert
- c. (1) Between 6% and 14% (2) Site Area Emergency
- d. (1) Between 15% and 23% (2) Site Area Emergency

QUESTION: 091 (1.00)

The plant is being controlled per 3005.01 Unit Power Changes. You are the CRS and CPS 9031.06, Main Turbine Stop Valve and Combined Intermediate Valve Tests is being performed.

The attached figures show the present plant conditions.

- (1) What Technical Specification actions, if any, must be taken?
- (2) What is the bases for the Technical Specification actions or reasons for no actions needed?
  - a. (1) Place one channel in trip within 48 hours.  
(2) Ensures the MCPR Safety Limit is NOT exceeded.
  - b. (1) No Technical Specification actions needed.  
(2) Power is less than 33.3%.
  - c. (1) Place one channel in trip within 48 hours.  
(2) Ensures the RPV Pressure Safety Limit is NOT exceeded.
  - d. (1) No Technical Specification actions needed.  
(2) The Recirc Pumps are in slow speed.

QUESTION: 092 (1.00)

A plant transient has resulted in the following conditions:

- Drywell pressure: 3.95 psig stable
- Drywell temperature 305°F stable
- Containment pressure 1.8 psig rising very slowly
- Containment temperature 128 °F rising at 0.1 °F/minute

Reactor Water Level

- Narrow Range level (all) 0.0 inches stable
- Fuel Zone level (both) 275 inches erratic
- Wide Range level
  - A 158 inches stable
  - B 60 inches stable
  - C 159 inches stable
  - D 60 inches stable
- RPV pressure is being controlled between 600 and 800 psig using manual SRV operation.
- SLC is injecting to the RPV.
- No other high pressure injection sources are available.
- All control rods are fully inserted.

What action is required next?

- a. Enter EOP-2.
- b. Enter EOP-3.
- c. Enter all SAG flowcharts.
- d. Rapidly depressurize the RPV using the Bypass Valves.

QUESTION: 093 (1.00)

The plant is detensioning the Reactor Vessel Head for a refueling.

Which of the following events must be reported FIRST to the NRC?

- a. LPCS injects from a valid signal.
- b. The HPCS Water Leg Pump trips.
- c. Engineering determines that a calculation for RCIC response time is non-conservative.
- d. A surveillance for Control Room Ventilation is found to be overdue including the allowed extension.

QUESTION: 094 (1.00)

Refer to SRO Question 19 Figures 1 and 2.

A plant startup is in progress with Reactor pressure at 920 psig.

All conditions to enter Mode 1 are met.

The High Voltage Power Supply for IRM H fails low.

Which figure shows the expected annunciators and which action needs to be directed to correct this situation?

- a. Figure 1 Place the Reactor MODE Switch in RUN per 3002.01, Heatup And Pressurization.
- b. Figure 2 Place the Reactor MODE Switch in RUN per 3002.01, Heatup And Pressurization.
- c. Figure 1 Place the Div 4 Sensor Bypass switch in BYPASS per CPS 3305.01, Reactor Protective System.
- d. Figure 2 Place the Div 1 Sensor Bypass switch in BYPASS per CPS 3305.01, Reactor Protective System.



QUESTION: 095 (1.00)

The plant is operating at near rated power.

- At T=0 An inadvertent dump of the upper Containment Pool occurs.
- At T=Two (2) minutes, Annunciators 5062-3E and 5063-3E, Suppression Pool Water Level High, are received.
- At T=Two (2) minutes and ten (10) seconds, Annunciator 5060-2E, Undervoltage 125V DC MCC 1A is received and voltage is confirmed to be 0 Volts.

Which one of the following describes the impact of these events and the actions needed to mitigate the impact?

- a. RCIC has lost its fill and vent and must be prevented from auto starting per 3310.01, RCIC.
- b. HPCS has lost its fill and vent and must be prevented from auto starting per 3309.01, HPCS.
- c. The RCIC Closed Loop Outside of Containment has been lost and one of the RCIC suction valves shall be manually closed per 3310.01, RCIC.
- d. The HPCS Closed Loop Outside of Containment has been lost and one of the HPCS suction valves shall be manually closed per 3309.01, HPCS.

QUESTION: 096 (1.00)

The plant is operating at near rated conditions.

- A zero ground occurs on 6900V Bus 1B.
- All plant equipment operates as designed.

For the stated conditions, which of the following procedures list IMMEDIATE ACTIONS that the CRS SHALL ensure are performed?

- a. 4100.01, Reactor Scram only.
- b. 4008.01, Abnormal Reactor Coolant Flow only.
- c. 4008.01, Abnormal Reactor Coolant Flow and 4100.01, Reactor Scram only.
- d. 4008.01, Abnormal Reactor Coolant Flow, 4100.01 Reactor Scram and 4200.01, Loss of AC Power.

QUESTION: 097 (1.00)

A plant startup is in progress. The following conditions exist:

- Reactor power is 11%.
- The Mode Switch is in RUN.
- One (1) and one half (1/2) Bypass Valves are open.
- Raw Data is selected.

Control Rod 16-33 is withdrawn to position 08 and both position 08 reed switches fail open.

What Technical Specification and procedural actions must be performed to mitigate the consequences of the failed reed switches?

- a. Declare Control Rod 16-33 inoperable, enter Substitute Position Data per 3304.02, Rod Control and Information System, and then move Control Rod 16-33 to a position with an operable reed switch.
- b. Prior to the Control Rod Position Surveillance due time, enter Substitute Position Data per 3304.02, Rod Control and Information System, and then move Control Rod 16-33 to a position with an operable reed switch.
- c. Declare Control Rod 16-33 inoperable, bypass Control Rod 16-33 position at both RACS per 3304.02, Rod Control and Information System, and then move Control Rod 16-33 to a position with an operable reed switch.
- d. Prior to the Control Rod Position Surveillance due time, bypass Control Rod 16-33 position at both RACS per 3304.02, Rod Control and Information System, and then move Control Rod 16-33 to a position with an operable reed switch.

QUESTION: 098 (1.00)

The plant was at power when a LOCA occurred. The following conditions exist:

- Reactor water level is -90 inches and slowly rising from a low of -146 inches.
- Reactor Pressure is 900 psig and steady.
- Drywell pressure is 5.0 psig and rising.
- Drywell temperature is 225°F and steady
- Containment pressure is 3.0 psig and rising.
- Containment temperature is 130°F and rising.
- Suppression Pool water level is 20 ft and steady.
- Suppression Pool water temperature is 140°F.

Which of the following actions must be directed?

- a. Start Containment Sprays per 3312.01 Residual Heat Removal
- b. Verify the Auto start of Containment Sprays per 3312.01 Residual Heat Removal
- c. Start all available Suppression Pool Cooling per 3312.01 Residual Heat Removal
- d. Depressurize the RPV rapidly using Main Turbine Bypass Valves per 4411.09 RPV Pressure Control Sources

QUESTION: 099 (1.00)

The plant is operating at near rated power.

The annunciators shown in the attached figure are alarming.

Which one of the following describes the impact this has and which procedural actions need to be performed to correct the situation?

- a. The Suppression Pool will overflow into the Drywell and the Reactor needs to be Shutdown per 4304.01 Flooding.
- b. Figure Q, SRV Tail Pipe Limit, of EOP-6 will be exceeded and the Reactor needs to be scrammed per 4100.01 Reactor Scram.
- c. The Fuel Pool Cooling and Cleanup Pumps will trip and Suppression Pool water needs to be transferred to the Upper Containment Pool per 3312.01 Residual Heat Removal.
- d. The High Pressure Core Spray suction will transfer to the Suppression Pool and the suction needs to be shifted back to the RCIC Storage Tank per 4410.00C002 Defeating HPCS Interlocks.

QUESTION: 100 (1.00)

Core Alterations are in progress. The Refueling Bridge needs to be moved outside the preprogrammed Safe Zone.

Who is the LOWEST authority that can grant permission to use the Travel Override Push-Button?

Authorities are listed lowest to highest.

- a. Refuel Floor Supervisor
- b. Refuel SRO
- c. Control Room Supervisor
- d. Shift Manager

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

## REFERENCES

ANSWER: 001 (1.00)

b.

REFERENCE:

CPS 5002.04(N), NSPS INV SOURCE XFR  
ALT SOURCE, Rev. 32b LP85434, Nuclear  
System Protection System, Rev. 8

NEW

FUNDAMENTAL

262001A3.01 ..(KA's)

ANSWER: 002 (1.00)

c.

REFERENCE:

CPS 5003-1K, RECIRC PMP MTR A OR B  
TEMP HI, Rev. 34b CPS 3302.01, REACTOR  
RECIRCULATION, Rev. 29c

FUNDAMENTAL

NEW

295018A201 ..(KA's)

ANSWER: 003 (1.00)

a.

REFERENCE:

CPS 5002.01, ALARM PANEL 5002  
ANNUNCIATORS, ROW 1, Rev. 31d  
(5002-1Q) 4100.01, REACTOR SCRAM, Rev.  
19 EOP-1, RPV CONTROL, Rev. 27  
OP-AA-101-111, ROLES AND  
RESPONSIBILITIES OF ON-SHIFT  
PERSONNEL, Rev. 1

HIGH

BANK

295008A107 ..(KA's)

ANSWER: 004 (1.00)

a.

REFERENCE:

CPS 3304.02, ROD CONTROL AND  
INFORMATION SYSTEM (RCIS), Rev. 16d  
CPS 4100.01, REACTOR SCRAM, Rev. 19

HIGH

NEW

295006A202 ..(KA's)

ANSWER: 005 (1.00)

d.

REFERENCE:

CPS 1005.09, EOP and SAG Program,  
Rev.8c LP87551, Introduction To EOPs

FUNDAMENTAL

NEW

2.4.1 ..(KA's)

ANSWER: 006 (1.00)

d.

REFERENCE:

CPS 4004.01, Instrument Air Loss, Rev. 9d  
CPS 3214.01, Rev. 23e, Plant Air (IA and SA)  
CPS 3101.01, Rev. 19d, Main Steam (MS, IS,  
ADS) LP85239, Main Steam, Rev. 9 HIGHER

MODIFIED

239002K602 ..(KA's)

ANSWER: 007 (1.00)

d.

REFERENCE:

CPS 3304.01E001, Rev. 7, CRDH Electrical  
Lineup CPS 4411.02, Rev. 7, Terminating and  
Preventing Injection

FUNDAMENTAL

NEW

201001K201 ..(KA's)

ANSWER: 008 (1.00)

c.

REFERENCE:

CPS 3304.01, Rev. 32c, Control Rod  
Hydraulic and Control (RD)

FUNDAMENTAL

BANK

201003K407 ..(KA's)

## REFERENCES

ANSWER: 009 (1.00)

d.

REFERENCE:

CPS 3314.01, Rev. 11b, Standby Liquid Control (SC)

HIGH

NEW

211000A303 ..(KA's)

ANSWER: 010 (1.00)

a.

REFERENCE:

CPS 3304.02, Rev. 16d, Rod Control and Information System (RC)

FUNDAMENTAL

BANK

214000K106 ..(KA's)

ANSWER: 011 (1.00)

b.

REFERENCE:

CPS 3306.01E001, Rev. 6, SRM / IRM Electrical Lineup

FUNDAMENTAL

NEW

215003K201 ..(KA's)

ANSWER: 012 (1.00)

d.

REFERENCE:

CPS 3306.01, Rev. 11, Source / Intermediate Range Monitors (SRM / IRM)

HIGH

BANK

215004A104 ..(KA's)

ANSWER: 013 (1.00)

b.

REFERENCE:

CPS 3509.01C002, Rev. 10, Div. 2 NSPS Bus (1C71-P001B) Outage CPS 3509.01C001, Rev. 8, Div. 1 NSPS Bus (1C71-P001A)

Outage

FUNDAMENTAL

NEW

215005K202 ..(KA's)

ANSWER: 014 (1.00)

a.

REFERENCE:

CPS 9067.03, Rev. 27, Standby Gas Treatment System Operability

HIGHER

NEW

261000A301 ..(KA's)

ANSWER: 015 (1.00)

b.

REFERENCE:

CPS 3506.01, Rev.32c,

FUNDAMENTAL

BANK

264000K505 ..(KA's)

ANSWER: 016 (1.00)

b.

REFERENCE:

3105.01, TG, EHC, TS R 34b 3105.04, SB R 12a E02-1MS99 and 1EH99

HIGHER

BANK

245000K308 ..(KA's)

## REFERENCES

ANSWER: 017 (1.00)

b.

REFERENCE:

CPS 5130.06, Rev. 28c, Alarm Panel 5130  
Annunciators - Row 6 (5130-6D)

HIGHER

NEW

271000A301 ..(KA's)

ANSWER: 022 (1.00)

c.

REFERENCE:

LP85433, Rev. 5, Remote Shutdown

FUNDAMENTAL

NEW

295016K303 ..(KA's)

ANSWER: 018 (1.00)

DELETED

REFERENCE:

OP-AB-300-1001, Rev. 3, BWR CONTROL  
ROD MOVEMENT REQUIREMENTS

HIGHER BANK

2.1.1 ..(KA's)

ANSWER: 023 (1.00)

d.

REFERENCE:

CPS 3303.01, Rev. 30, Reactor Water  
Cleanup (RT)

FUNDAMENTAL

NEW

295020K204 ..(KA's)

ANSWER: 019 (1.00)

c.

REFERENCE:

CPS 9061.01, Rev. 27a, Primary Containment  
Integrity Verification

FUNDAMENTAL

NEW

2.2.12 ..(KA's)

ANSWER: 024 (1.00)

b.

REFERENCE:

SER ATWS Rule - 10CFR50.62

FUNDAMENTAL

BANK

295025K306 ..(KA's)

ANSWER: 020 (1.00)

b.

REFERENCE:

CPS 3312.03, Rev. 5e, RHR-SDC & FPC&A  
FUNDAMENTAL

NEW

2.3.10 ..(KA's)

ANSWER: 025 (1.00)

b.

REFERENCE:

CPS 3213.02, Rev. 4e, Plant Fire Detection  
System

FUNDAMENTAL

NEW

600000A108 ..(KA's)

ANSWER: 021 (1.00)

b.

REFERENCE:

CPS 4100.01, Rev. 19, Reactor Scram  
FUNDAMENTAL

BANK

295015K101 ..(KA's)

ANSWER: 026 (1.00)

a.

REFERENCE:

CPS 4411.10, Rev. 4e, SLC Operations  
HIGHER

MODIFIED

211000A408 ..(KA's)

## REFERENCES

ANSWER: 027 (1.00)

a.

REFERENCE:

CPS 3503.01E001, Rev. 11b, Battery and DC Electrical Distribution Lineup LP85263, Rev. 10, Battery and DC Distribution System

HIGHER

MODIFIED

263000K201 ..(KA's)

ANSWER: 031 (1.00)

d.

REFERENCE:

CPS 3503.01C005, Rev. 3, Temporary Battery Charger Feed to Div 3 1E22-S001C DG CT/PT Cub Checklist

HIGHER

NEW

295004K203 ..(KA's)

ANSWER: 028 (1.00)

d.

REFERENCE:

CPS 5041.03(D), Rev. 26, Trouble Instrument Air Dryer 2SA02J CPS 3214.01, Rev. 23e, Plant Air (IA & SA)

HIGHER

NEW

300000A201 ..(KA's)

ANSWER: 032 (1.00)

b.

REFERENCE:

Clinton EOP Technical Bases 11 - Variables and Curves R 5

FUNDAMENTAL

MODIFIED

295029K301 ..(KA's)

ANSWER: 029 (1.00)

c.

REFERENCE:

CPS 3007.01, Rev. 14b, Preparation and Recovery from Refueling Operations

FUNDAMENTAL

NEW

2.2.27 ..(KA's)

ANSWER: 033 (1.00)

a.

REFERENCE:

Clinton EOP Technical Bases 11, Variables and Curves R 5

FUNDAMENTAL

BANK

295030K103 ..(KA's)

ANSWER: 030 (1.00)

d.

REFERENCE:

RP-AA-401, Operational ALARA Planning and Controls R 7

FUNDAMENTAL

NEW

2.3.2 ..(KA's)

ANSWER: 034 (1.00)

b.

REFERENCE:

USAR 6.5.1.1 and 6.5.1.2 EOP-8 Technical Bases R 5

HIGHER

NEW

295035K203 ..(KA's)



## REFERENCES

ANSWER: 035 (1.00)

d.

REFERENCE:

CPS 4411.11, Rev. 4c, Hydrogen Control  
System Operation

HIGHER

NEW

500000A201 ..(KA's)

ANSWER: 036 (1.00)

b.

REFERENCE:

CPS 3101.01, Rev. 4c, Main Steam (MS, IS,  
& ADS) EOP-1, RPV Control

FUNDAMENTAL

NEW

218000A206 ..(KA's)

ANSWER: 037 (1.00)

b.

REFERENCE:

CPS 1893.04 Fire Fighting R 10e

FUNDAMENTAL

NEW

2.4.27 ..(KA's)

ANSWER: 038 (1.00)

b.

REFERENCE:

LP85796 Breakers, Relays and Disconnects  
R 3

FUNDAMENTAL

NEW

295003K302 ..(KA's)

ANSWER: 039 (1.00)

a.

REFERENCE:

CPS 4411.03, Rev. 6c, Injection/Flooding  
Sources

FUNDAMENTAL

MODIFIED

2.4.35 ..(KA's)

ANSWER: 040 (1.00)

c.

REFERENCE:

CPS 1021.01, Site Communications R 7a

FUNDAMENTAL

NEW

2.1.16 ..(KA's)

ANSWER: 041 (1.00)

c.

REFERENCE:

CPS 3215.01 Off Gas R 33d

FUNDAMENTAL

NEW

272000K501 ..(KA's)

ANSWER: 042 (1.00)

b.

REFERENCE:

CPS 3506.01 Diesel Generator and Support  
Systems R 32d

FUNDAMENTAL

NEW

262001K101 ..(KA's)

ANSWER: 043 (1.00)

b.

REFERENCE:

CPS 3304.04, Control Rod Exercising R 1a

FUNDAMENTAL

NEW

2.2.1 ..(KA's)

ANSWER: 044 (1.00)

b.

REFERENCE:

CPS 3302.01 Reactor Recirculation R 29c  
USAR 5.3.3.6

HIGHER

NEW

295001 2.1.32 ..(KA's)

## REFERENCES

ANSWER: 045 (1.00)

a.

REFERENCE:

CPS 4006.01, Loss of Shutdown Cooling R 4c

HIGHER

NEW

295021K102 ..(KA's)

ANSWER: 050 (1.00)

c.

REFERENCE:

CPS 3214.01, Plant Air R 23e

HIGHER

NEW

295019K303 ..(KA's)

ANSWER: 046 (1.00)

b.

REFERENCE:

5007-1B, R 27b, Turbine Trip 4005.01 R 17,

Loss Of Feedwater Heating

HIGHER

NEW

295005A206 ..(KA's)

ANSWER: 051 (1.00)

b.

REFERENCE:

CPS 5140.08, Rev. 0, AR/PR Annunciator -

Spent Fuel Storage - 1RIX-AR016

FUNDAMENTAL

NEW

295023A104 ..(KA's)

ANSWER: 047 (1.00)

c.

REFERENCE:

CPS 3315.01, Rev. 15b, Containment

Monitoring (CM)

FUNDAMENTAL

NEW

203000A413 ..(KA's)

ANSWER: 052 (1.00)

d.

REFERENCE:

CPS 3315.01, Containment Monitoring R 15b

HIGHER

NEW

295024A208 ..(KA's)

ANSWER: 048 (1.00)

c.

REFERENCE:

CPS 3323.01 Seismic and Environmental

Monitoring R 10c

HIGHER

NEW

295017A205 ..(KA's)

ANSWER: 053 (1.00)

a.

REFERENCE:

CPS 4200.01, Rev. 16a, Loss of AC Power

HIGHER

NEW

295026A103 ..(KA's)

ANSWER: 049 (1.00)

d.

REFERENCE:

M05-1076 Sh 4

FUNDAMENTAL

NEW

204000K402 ..(KA's)

ANSWER: 054 (1.00)

c.

REFERENCE:

EOP-6 R 27

HIGHER

NEW

295027K101 ..(KA's)

## REFERENCES

ANSWER: 055 (1.00)

b.

REFERENCE:

Technical Specifications 3.6.5.5 R 7

FUNDAMENTAL

NEW

2.1.33 295028 ..(KA's)

ANSWER: 056 (1.00)

b.

REFERENCE:

CPS 5004.02

HIGH

Drywell Pressure R 28e USAR Table 6.3-8

HIGHER

NEW

203000K607 ..(KA's)

ANSWER: 057 (1.00)

c.

REFERENCE:

LP85218 ADS Actuation Logic Schematic R 5

HIGHER

NEW

295031K208 ..(KA's)

ANSWER: 058 (1.00)

d.

REFERENCE:

CPS 4411.08, Rev. 5c, Alternate Control Rod

Insertion

FUNDAMENTAL

NEW

295037K201 ..(KA's)

ANSWER: 059 (1.00)

c.

REFERENCE:

EOP-9 R 27 CPS 3410.01 Turbine BLDG

HVAC R 11b

FUNDAMENTAL

NEW

2.1.30 295038 ..(KA's)

ANSWER: 060 (1.00)

a.

REFERENCE:

NEW

202002A401 ..(KA's)

ANSWER: 061 (1.00)

b.

REFERENCE:

CPS 5008.01 1K ARI System 1 Initiated R 27

HIGHER

NEW

212000K103 ..(KA's)

ANSWER: 062 (1.00)

a.

REFERENCE:

CPS 5005.01 1J APRM D UPSC Trip or INOP

R 29b

HIGHER

BANK

2.1.28 215005 ..(KA's)

ANSWER: 063 (1.00)

b.

REFERENCE:

CPS 5063-2E, Rev. 31a, RCIC Storage Tank

Level Low

HIGHER

NEW

217000K407 ..(KA's)

ANSWER: 064 (1.00)

b.

REFERENCE:

CPS 4001.02 C001 Automatic Isolation

Checklist R 14c

HIGHER

NEW

223002K308 ..(KA's)

## REFERENCES

ANSWER: 065 (1.00)

a.

REFERENCE:

CPS 3302.01, Rev. 29c, Reactor Recirculation (RR)

HIGHER

NEW

2.1.23 223002 ..(KA's)

ANSWER: 066 (1.00)

c.

REFERENCE:

CPS 3105.01 Turbine R 34b

HIGHER

NEW

241000A222 ..(KA's)

ANSWER: 067 (1.00)

c.

REFERENCE:

CPS 3104.01, Rev. 26a, Condensate - Condensate Booster (CD-CB)

HIGHER

NEW

256000A101 ..(KA's)

ANSWER: 068 (1.00)

c.

REFERENCE:

USAR Chapter 7, Control Systems Not Required For Safety

HIGHER

NEW

259002K101 ..(KA's)

ANSWER: 069 (1.00)

d.

REFERENCE:

CPS 3103.01 Feed water R 24b CPS 3006.01 Unit Shutdown R36a

HIGHER

NEW

259002A401 ..(KA's)

ANSWER: 070 (1.00)

c.

REFERENCE:

CPS 5050.07, Rev. 32b, Alarm Panel 5050 Annunciators - Row 7 (5050-7F) CPS

5052.07, Rev. 33b, Alarm Panel 5052

Annunciators - Row 7 (5052-7F)

OP-AA-101-111 R 1, Roles and

Responsibilities of On-Shift Personnel

HIGHER

NEW

2.4.50 290001 ..(KA's)

ANSWER: 071 (1.00)

deleted

REFERENCE:

OE6144 - Resin Intrusion

HIGHER

NEW

290002K607 ..(KA's)

ANSWER: 072 (1.00)

c.

REFERENCE:

3203.01 Component Cooling Water R 32

4004.01 Instrument Air Loss R 9d

HIGHER

NEW

400000K607 ..(KA's)

ANSWER: 073 (1.00)

a.

REFERENCE:

CPS 3312.03 Shutdown Cooling R 5e

LP85727 Thermodynamics

HIGHER

NEW

205000K503 ..(KA's)

ANSWER: 074 (1.00)

b.

REFERENCE:

3506.01 Diesel Generator R32c HIGHER

NEW

209001K303 ..(KA's)

## REFERENCES

ANSWER: 075 (1.00)

b. & c.

REFERENCE:

CPS 3309.01 HPCS R15c LER 88-022  
Inadvertent HPCS Initiation HIGHER NEW  
209002A104 ..(KA's)

ANSWER: 076 (1.00)

a.

REFERENCE:

OP-AA-104-101, Communications R 1 Tech  
Spec 3.6.2.1  
HIGHER  
BANK  
295026 2.1.14 ..(KA's)

ANSWER: 077 (1.00)

d.

REFERENCE:

CPS 4200.01 Loss of AC Power R 16a EOP-6  
R 27  
HIGHER  
NEW  
295007A201 ..(KA's)

ANSWER: 078 (1.00)

b.

REFERENCE:

OP-AA-108-104 Technical Specification  
Compliance R 0  
FUNDAMENTAL  
NEW  
2.2.23 ..(KA's)

ANSWER: 079 (1.00)

b.

REFERENCE:

EOP-6 R 27  
FUNDAMENTAL  
BANK  
2.3.8 ..(KA's)

ANSWER: 080 (1.00)

d.

REFERENCE:

TS 3.6.1.5 and LS-AA-1400 Event Reporting  
Guidelines R 2  
HIGHER  
NEW  
2.4.30 295011 ..(KA's)

ANSWER: 081 (1.00)

b.

REFERENCE:

T/S LCO 3.3.6.1  
HIGHER  
MODIFIED  
2.2.22 223002 ..(KA's)

ANSWER: 082 (1.00)

b.

REFERENCE:

CPS 4008.02 Core Shroud Cracking, R 2a  
OP-AA-101-111 Roles and Responsibilities of  
On-Shift Personnel R 1  
FUNDAMENTAL  
NEW  
2.1.14 ..(KA's)

ANSWER: 083 (1.00)

d.

REFERENCE:

9041.01 Jet Pump Operability Test R 36b  
Technical Specification 3.4.3 Jet Pumps  
HIGHER  
NEW  
2.4.47 ..(KA's)

ANSWER: 084 (1.00)

c.

REFERENCE:

Clinton Station NEI R 4 EAL set  
HIGHER  
NEW  
2.4.32 ..(KA's)

## REFERENCES

ANSWER: 085 (1.00)

b.

REFERENCE:

CPS Technical Specifications LCO 3.1.7

HIGHER

NEW

2.1.22 ..(KA's)

ANSWER: 086 (1.00)

c.

REFERENCE:

CPS 4004.01, Instrument Air Loss R 9d

HIGHER

MODIFIED

295019A201 ..(KA's)

ANSWER: 087 (1.00)

a.

REFERENCE:

Technical Specifications LCO 3.6.5.5 and

3.6.5.5 Bases

FUNDAMENTAL

BANK

295012A201 ..(KA's)

ANSWER: 088 (1.00)

c.

REFERENCE:

4002.01, Abnormal RPV Level-Loss of

Feedwater at Power R 3f 4100.01, Reactor

Scram R 19

HIGHER

NEW

295006A203 ..(KA's)

ANSWER: 089 (1.00)

a.

REFERENCE:

Technical Specification LCO 3.4.12 Action

A.1 and its Bases

HIGHER

NEW

295025 2.2.22 ..(KA's)

ANSWER: 090 (1.00)

c.

REFERENCE:

CPS 4003.01, Remote Shutdown R 13c

EP-AA-1003, Radiological Emergency Plan

Annex For Clinton Station R 10

HIGHER

NEW

295016A201 ..(KA's)

ANSWER: 091 (1.00)

a.

REFERENCE:

Technical Specification 3.3.1.1

HIGHER

NEW

295005A203 ..(KA's)

ANSWER: 092 (1.00)

a.

REFERENCE:

EOP-1 R 27

HIGHER

MODIFIED

295031A201 ..(KA's)

ANSWER: 093 (1.00)

a.

REFERENCE:

LS-AA 1110, Reportability Manual Table

Event SAF R 8

HIGHER

NEW

209001 2.4.30 ..(KA's)

ANSWER: 094 (1.00)

a.

REFERENCE:

3305.01 RPS R 11b 5005-2J RPS CH D IRM

UPSC TRIP OR INOP R 29b

HIGHER

NEW

215003A201 ..(KA's)

## REFERENCES

ANSWER: 095 (1.00)

c.

REFERENCE:

CPS 3310.01, RCIC R 26c

HIGHER

NEW

217000A205 ..(KA's)

ANSWER: 098 (1.00)

a.

REFERENCE:

EOP-6 Containment Control

HIGHER

NEW

226001A215 ..(KA's)

ANSWER: 096 (1.00)

b.

REFERENCE:

4008.01, Abnormal Reactor Coolant Flow.

HIGHER

NEW

262001A205 ..(KA's)

ANSWER: 099 (1.00)

c.

REFERENCE:

3312.01 RHR R 37c 4011.01, Reactor Cavity

Leakage During Refueling R 4d

HIGHER

NEW

233000A203 ..(KA's)

ANSWER: 097 (1.00)

c.

REFERENCE:

3304.02, Rod Control and Information System

R 16d SR 3.0.1 SR 3.1.3.1

HIGHER

NEW

214000A201 ..(KA's)

ANSWER: 100 (1.00)

b.

REFERENCE:

3703.01 Core Alterations R 25c

FUNDAMENTAL

NEW

2.2.18 ..(KA's)

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

REFERENCES

A N S W E R K E Y  
M U L T I P L E C H O I C E

001 b	021 b	041 c	061 b	081 b
002 c	022 c	042 b	062 a	082 b
003 a	023 d	043 b	063 b	083 d
004 a	024 b	044 b	064 b	084 c
005 d	025 b	045 a	065 a	085 b
006 d	026 a	046 b	066 c	086 c
007 d	027 a	047 c	067 c	087 a
008 c	028 d	048 c	068 c	088 c
009 d	029 c	049 d	069 d	089 a
010 a	030 d	050 c	070 c	090 c
011 b	031 d	051 b	071 deleted	091 a
012 d	032 b	052 d	072 c	092 a
013 b	033 a	053 a	073 a	093 a
014 a	034 b	054 c	074 b	094 a
015 b	035 d	055 b	075 b & c	095 c
016 b	036 b	056 b	076 a	096 b
017 b	037 b	057 c	077 d	097 c
018 deleted	038 b	058 d	078 b	098 a
019 c	039 a	059 c	079 b	099 c
020 b	040 c	060 a	080 d	100 b

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