ADMINISTERED WRITTEN EXAMINATION

U.S. Nuclear Regulatory Commission

Site-Specific RO Written Examination

Applicant Information

Name:	
Date: July 11, 2008	Facility/Unit: Palisades Nuclear Station
Region: I ☐ II ☐ III ✘ IV ☐	Reactor Type: W ☐ CE ✘ W ☐ GE ☐
Start Time: 0800	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	75	Points
Applicant's Score	_____	Points
Applicant's Grade	_____	Percent

U.S. Nuclear Regulatory Commission

Site-Specific SRO Written Examination

Applicant Information	
Name:	
Date: March 10, 2008	Facility/Unit: Dresden U1/U2
Region: I ☐ II ☐ III ✘ IV ☐	Reactor Type: W ☐ CE ✘ BW ☐ GE ☐
Start Time: 0800	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 overall, with 70.00 percent or better on the SRO-only items if given in conjunction with the RO exam; SRO-only exams given alone require a final grade of 80.00 percent to pass. You have 8 hours to complete the combined examination, and 3 hours if you are only taking the SRO portion.

Applicant Certification

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

_____
Applicant's Signature

Results

RO/SRO-Only/Total Examination Values	75 / 25 / 100 Points
Applicant's Scores	_____ / _____ / _____ Points
Applicant's Grade	_____ / _____ / _____ Percent

APPENDIX E
POLICIES AND GUIDELINES FOR TAKING NRC EXAMINATIONS

Each examinee shall be briefed on the policies and guidelines applicable to the examination category (written, operating, walk-through, and/or simulator test) being administered. The examinees may be briefed individually or as a group. Facility licensees are encouraged to distribute a copy of this appendix to every examinee before the examination begins. All items apply to both initial and requalification examinations, except as noted.

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. 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, programmable memories must be erased. Use black dark pencil for this examination.

5. Print your name in the blank provided on the examination cover sheet ***and*** the answer sheet.

6. Mark your answers on the answer sheet provided, and do not leave any question blank. Use only the paper provided; you may write anywhere on the provided examination.

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 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.

9. When you complete the examination, assemble a package that includes the examination cover sheet and the answer sheet, and give it to the 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 items at your examination table face down. The examination will be retained by the station training department.

10. After turning in your examination, leave the examination area as defined by the proctor. If you are found in this area while the examination is still in progress, your license may be denied or revoked.

11. Do you have any questions?

QUESTION: 001 (1.00)
Given the following conditions:

- A reactor trip from full power occurs
- Auxiliary Feedwater Actuation, AFAS, actuates as designed
- P-8A, AFW Pump, is in service
- Plant recovery is in progress in accordance with EOP-2.0, "Reactor Trip Recovery"
- AFW is aligned for normal operation in accordance with SOP-12 "Feedwater System"
- AFAS has NOT been reset

What will be the plant response if Auxiliary Feedwater Pump, P-8A, trips?

a. AFW Pump, P-8C, will immediately start.

b. AFW Pump, P-8B, will immediately start.

c. AFW Pump, P-8C, will start in approximately 30 seconds.

d. AFW Pump, P-8B, will start in approximately 30 seconds.

QUESTION: 002 (1.00)
A manual reactor trip has occurred due to a PZR vapor space LOCA event. The Reactor Operator notes the following during the performance of EOP-1.0, "Standard Post Trip Actions":

- Pressurizer Pressure is 1250 psia and lowering slowly
- PCS Temperature is 524°F

The Reactor Operator trips P-50A and P-50D, Primary Coolant Pumps. Which one of the following describes the reason for this action?

a. Prevents pump operation when PCS pressure is below the 25°F sub-cooling curve of EOP Supplement 1.

b. Prevents pump operation when PCS pressure is below the minimum pressure limit of EOP Supplement 1.

c. Minimizes PCS inventory loss while maintaining diametrically opposed PCPs in service for core heat removal.

d. Minimizes PCS inventory loss while still maintaining PCS pressure control via Pressurizer spray valves.

QUESTION: 003 (1.00)
Following a manual reactor trip due to a small break LOCA, the following conditions are noted during EOP-1.0, "Standard Post Trip Actions."

- Pressurizer Level Controller, LIC-0101B is in service
- Pressurizer level has slowly lowered to 34% on LIC-0101B
- Pressurizer Pressure is 1750 psia
- Charging and Letdown systems are aligned for normal operation in accordance with SOP2A, "Chemical and Volume Control System"

Which one of the following lists the response of the Chemical Volume Control System (CVCS) components due to this event?

	P-55B Status	P-55C Status	Orifice Stop Valves Open
a.	OFF	OFF	1
b.	ON	ON	1
c.	ON	ON	0
d.	OFF	OFF	0

QUESTION: 004 (1.00)
With the plant operating at 35% power, a loss of Component Cooling Water event occurs. Alarm EK-0908, "PRI COOLANT PUMP P-50B HI TEMP OVERLOAD" is annunciating. Which one of the following conditions requires a manual reactor trip?

a. Thrust Bearing temperature indicates 191°F.

b. Controlled Bleedoff temperature indicates 178°F.

c. Pump Motor Stator Temperature indicates 135°C.

d. Lower Seal temperature indicates 177°F.

QUESTION: 005 (1.00)
The Plant was operating at 50% power when ALL charging flow was lost. The following conditions exist:

- PZR level was at program level when letdown was immediately isolated
- PZR level is lowering at a rate of 1% every fifteen (15) minutes (after letdown was isolated)

Assuming charging and letdown systems are NOT restored, approximately how long can PZR heater operation be maintained?

a. 120 minutes

b. 205 minutes

c. 315 minutes

d. 360 minutes

QUESTION: 006 (1.00)
Given the following plant conditions:

- PCS cooldown is in progress with a 20°F/Hour cooldown rate
- Shutdown Cooling is in service
- A Loss of ALL Instrument Air occurs

Which one of the following describes the Shutdown Cooling System response to the loss of Instrument Air?

Shutdown Cooling...

a. flow is lost.

b. heat removal is lost.

c. flow is degraded.

d. heat removal is maximum.

QUESTION: 007 (1.00)
CV-0945 and CV-0946, CCW Heat Exchanger Inlet Valves, receive an open signal during emergency conditions. What condition generates the open signal and what is the reason for this signal?

a. Safety Injection Signal (SIS). Ensures 100% cooling is available post accident.

b. Recirculation Actuation Signal (RAS). Ensures 100% cooling is available post accident.

c. Safety Injection Signal (SIS). Maintains minimum flow for CCW pumps.

d. Recirculation Actuation Signal (RAS). Maintains minimum flow for CCW pumps.

QUESTION: 008 (1.00)
Given the following:

- Annunciator EK-0744 "PRESSURIZER SAFETY VALVE RV-1039 DISCH HI TEMP" is alarming
- ONP-23.1, "Primary Coolant Leak", is entered
- The CRS directs a manual reactor trip due to PCS leak rate trip criteria being exceeded
- Following the actions of EOP-1.0, "Standard Post Trip Actions," EOP-4.0, "Loss of Coolant Accident Recovery," is entered
- PCS pressure is 1895 psia and lowering slowly

The Control Room Supervisor directs the Reactor Operator to lower PCS pressure to a band of 1690 - 1790 psia in accordance with EOP-4.0. Which one of the following describes the reason for this action?

This pressure band is....

a. sufficiently above the Safety Injection Actuation setpoint yet is well below the Pressurizer Code Safety Valve setpoint.

b. high enough to maintain at least 50°F PCS subcooling yet is well below the Pressurizer Code Safety Valve setpoint.

c. high enough to maintain at least 50°F PCS subcooling yet is low enough to maximize the amount of time until Quench Tank, T-73, rupture disc actuates.

d. sufficiently above the Safety Injection Actuation setpoint yet is low enough to maximize the amount of time until Quench Tank, T-73, rupture disc actuates.

QUESTION: 009 (1.00)
With the plant at 100% power the following occurs:

- The Main Turbine trips due to a low vacuum condition, but the reactor does NOT trip
- The Reactor Operator attempts to trip the reactor using the pushbutton on panel C-02 but is unsuccessful
- The Turbine NCO successfully trips the reactor using the pushbutton on panel C06

Based on the above conditions, which one of the following describes the status of Reactor Trip Breakers, 42-1RPS/42-2RPS and EK-0972, Reactor Trip Alarm Red Tile Annunciator?

a. 42-1RPS and 42-2RPS are CLOSED. EK-0972 is OFF.

b. 42-1RPS and 42-2RPS are CLOSED. EK-0972 is LIT.

c. 42-1RPS and 42-2RPS are TRIPPED. EK-0972 is OFF.

d. 42-1RPS and 42-2RPS are TRIPPED. EK-0972 is LIT.

QUESTION: 010 (1.00)
During implementation of EOP-5.0, "Steam Generator Tube Rupture Recovery," which one of the following CANNOT be used to determine the most affected Steam Generator?

a. Steam Generator level change when not feeding.

b. Steam Generator sample analysis results.

c. Feed Regulating Valves position (prior to trip).

d. Steam Generator Blowdown Valves position.

QUESTION: 011 (1.00)
Given the following:

- The plant is in MODE 1 at full power
- A steam line break occurs OUTSIDE the Containment Building UPSTREAM of CV-0510, "A" Steam Generator Main Steam Isolation Valve (MSIV)
- "A" S/G Pressure indicates 475 psia
- "B" S/G Pressure indicates 850 psia

Which one of the following describes the expected response of the MSIVs and Feed Regulating Valves (FRVs) to this event?

a. BOTH "A" and "B" S/G MSIVs close.
BOTH "A" and "B" S/G FRVs close.

b. BOTH "A" and "B" S/G MSIVs close.
ONLY "A" S/G FRV closes.

c. ONLY "A" S/G MSIV closes.
BOTH "A" and "B" S/G FRVs close.

d. ONLY "A" S/G MSIV closes.
ONLY "A" S/G FRV closes.

QUESTION: 012 (1.00)
Given the following:

- Plant power is 76%
- MFPs, P-1A and P-1B are in service

Based on the above conditions, which one of the following requires an immediate reactor trip and entry into EOP-1.0, "Standard Post Trip Actions?" Consider each choice separately.

a. EK-0160, "FDWTR PUMPS LO SUCTION," alarms with MFP suction pressure indicating 280 psig.

b. EK-0143, "FW PUMP P1A TURBINE K7A TRIP," alarms with associated Trip & Throttle Valves indicating closed.

c. EK-0960, "STEAM GEN E-50A LO LEVEL," alarms with 'A' S/G level indicating 47% and lowering.

d. EK-0961, "STEAM GEN E-50A HI LEVEL," alarms with 'A' S/G level indicating 58% and lowering.

QUESTION: 013 (1.00)
Given the following plant conditions:

- A reactor trip has occurred
- 4160 Volt Buses 1A and 1B are de-energized
- EOP-1.0, "Standard Post Trip Actions" has been completed
- EOP-8.0, "Loss of Offsite Power/Forced Circulation Recovery," has been implemented

Which one of the following would indicate that natural circulation has NOT been established?

a. Loop hot leg and cold leg temperatures are constant.

b. Average CET temperature indicates 20°F PCS subcooling.

c. Average CET temperature is 43 above loop cold leg temperatures.

d. Loop hot leg temperatures are 10°F less than average CET temperature.

QUESTION: 014 (1.00)
Give the following conditions:

- The plant is in MODE 2
- Charging Pump P-55A is operating
- Charging Pumps P-55B and P-55C are in AUTO
- Letdown is in service
- A loss of Instrument AC Bus Y01 occurs

ONP-24.5, "Loss of Instrument AC Bus Y01" directs the operators to isolate PCP bleedoff from the Volume Control Tank (VCT) and realign it to the Primary System Drain Tank. Which one of the following describes the reason for this action?

a. Minimizes the likelihood of gas intrusion in to the PCP seals.

b. Minimizes the amount of pressure reduction in the VCT.

c. Prevents a complete draining of the VCT.

d. Prevents overfilling of the VCT.

QUESTION: 015 (1.00)
The following alarm is received in the control room:

- EK-0548 "125V DC BUS UNDERVOLTAGE/TROUBLE"

The cause of the alarm is determined to be 125V DC Bus D-20 tie breaker, 72-20, tripping and deenergizing DC Bus D-20L. Which one of the following actions will restore power to D-20L?

a. Place Battery Charger #2 in service from MCC-2.

b. Place Battery Charger #4 in service from MCC-2.

c. Place Battery Charger #2 in service from MCC-1.

d. Place Battery Charger #4 in service from MCC-1.

QUESTION: 016 (1.00)
Given the following conditions:

- The plant is operating at 100% power
- Service Water Pump, P-7A, is tagged out for maintenance
- P-7B is in service with motor amps indicating 80 amps
- P-7C is in service with motor amps indicating 83 amps

A problem develops with the Service Water System. The NCO then notes the following indications:

- EK-1163, "CRITICAL SERV WATER HEADER "B" LO PRESSURE" is annunciating
- "B" Critical SW Header Pressure indicates 40 psig
- P-7B motor amps indicate 86 amps
- P-7C motor amps indicate 93 amps

NO operator actions have been taken. Which one of the following accounts for the above conditions?

a. A break on the discharge pipe of P-7C, Service Water Pump.

b. A loss of instrument air to CV-0844, Critical SW Header B Isolation.

c. A loss of instrument air to CV-1318, P-7A SW Pump Cross Tie.

d. A plugged discharge basket strainer for P-7B and P-7C.

QUESTION: 018 (1.00)
Given the following initial conditions:

- Plant power is 100%
- Main Generator Load is 823 MW
- Main Generator Reactive load is zero (0) MVARs

A voltage disturbance occurs on the grid which causes Main Generator Reactive load to change to 300 MVARs IN. This is a concern because the Main Generator is now _____(1)____ which can cause ____(2)____.

a. (1) UNDER-excited
(2) High Stator end iron temperatures

b. (1) OVER-excited
(2) High Stator end iron temperatures

c. (1) UNDER-excited
(2) Rotor pole slippage

d. (1) OVER-excited
(2) Rotor pole slippage

QUESTION: 019 (1.00)
Given the following conditions:

- The plant is operating at 100% power
- Pressurizer Level Controller, LIC-0101B, is in service in the CASCADE mode
- Pressurizer Level Transmitter, LT-0101B, diaphragm ruptures, equalizing pressure across the diaphragm

Indicated Pressurizer level will ____(1)____ and the Pressurizer level control system will respond by __(2)____.

a. (1) rise
(2) opening CV-2004 and 2005, Letdown Stop Valves

b. (1) lower
(2) raising speed of P-55A, Charging pump

c. (1) rise
(2) securing P-55A, Charging pump

d. (1) lower
(2) closing CV-2003, Letdown Stop Valve

QUESTION: 020 (1.00)
The following conditions exist:

- The plant is in MODE 6
- The control room crew notices Reactor Cavity water level lowering on the refueling camera
- ONP-23.3, "Loss of Refueling Water Accident," is entered

ONP-23.3 requires the Containment to be evacuated if an alarm is received on either Fuel Handling Area Monitor, RIA-2316/2317 (set @ 80mr/hour). Which one of the following annunciators would indicate that radiation level exceeded 80mr/hr at the 649' level of Containment?

a. EK-1101, "CONTAINMENT INSTR AIR LO PRESS"

b. EK-0201, "CONT GAMMA RIA-2321 HIGH"

c. EK-1363, "CONTAINMENT HI RADIATION"

d. EK-1126, "CIS INITIATED"

QUESTION: 021 (1.00)
Which one of the following lists is inclusive of all Radiation Monitors that will all indicate an upward trend during a Steam Generator Tube Leak event?

a. RIA-0631, Condenser Off-Gas Monitor, ONLY.

b. RIA-0631, Condenser Off-Gas Monitor, AND Stack Gas Effluent Monitor (RGEM).

c. RIA-0631, Condenser Off-Gas Monitor, AND RIA-1809, Radwaste Ventilation Monitor.

d. RIA-0631, Condenser Off-Gas Monitor, AND RIA-1809, Radwaste Ventilation Monitor, AND Stack Gas Effluent Monitors (RGEM).

QUESTION: 022 (1.00)
The following conditions exist:

- The plant is in MODE 6
- Alarm EK-1366, "PLANT AREA MONITORING HI RADIATION," has alarmed due to RIA2313, SFP Criticality Monitor

The Alarm Response Procedure for EK-1366, ARP-8, directs you to place HS-1893, Fuel Handling Fan and Damper Emergency Trip switch, to the EMERGENCY TRIP position. Which one of the following describes the resultant equipment actuation and the reason for this action?

a. Trips V-69, Fuel Handling Area Supply Fan, AND V-70A/B, Fuel Handling Area Exhaust Fans. Isolates a direct path for radioactive release to the environment.

b. Trips V-69, Fuel Handling Area Supply Fan, ONLY. Maintains a negative pressure in the SFP while minimizing exhaust flow rate.

c. Trips V-69, Fuel Handling Area Supply Fan, AND V-70A/B, Fuel Handling Area Exhaust Fans. Ensures NO air is supplied to or removed from the SFP area.

d. Trips V-69, Fuel Handling Area Supply Fan, ONLY. Ensures contamination is not spread throughout the SFP Area by the supply fan.

QUESTION: 023 (1.00)
A fire occurs in the Service Building Annex which causes a significant amount of smoke to be released to the site. Which one of the following modes of Control Room HVAC System operation will allow the LEAST amount of smoke into the Control Room?

a. Normal.

b. Emergency.

c. Purge.

d. Recirculation.

QUESTION: 024 (1.00)
Given the following:

- The Reactor was tripped and the control room evacuated due to a fire in the CRHVAC system
- ONP-25.2, "Alternate Safe Shutdown Procedure," has been implemented
- EOP-1.0, "Standard Post Trip Actions," have been completed

When verifying PCS/Core heat removal safety function, which one of the following locations does ONP-25.2 direct Steam Generator pressure be determined?

a. Turbine Front Standard.

b. Redundant Safety Injection Panel, C-33.

c. Auxiliary Hot Shutdown panel, C-150A.

d. Auxiliary Feedwater Pump Room.

QUESTION: 025 (1.00)
In various places throughout the Emergency Operating Procedures, the term "degraded containment" is used. What is the definition of this term and its significance to the operating crew?

a. Containment integrity has been lost. The operating crew must now consider this safety function as jeopardized, and initiate immediate actions to restore containment integrity.

b. Containment radiation monitors are indicating > 10R/hour. The operating crew must ensure CHR has initiated.

c. Containment pressure has exceeded 3.0 psig AND temperature has exceeded 175°F. The operating crew may resume use of the non-degraded containment operating curves once BOTH containment parameters have returned to normal.

d. Containment pressure has exceeded 3.0 psig OR temperature has exceeded 175°F. Use of degraded containment operating curves must continue throughout the remainder of the EOP, even if containment parameters have returned to normal.

QUESTION: 026 (1.00)
Given the following:

- A Main Steam Line Break has occurred UPSTREAM of the 'B' S/G MSIV
- All AFW flow to 'B' S/G is isolated
- Main Steam Line Isolation has automatically actuated

Which one of the following is the basis for establishing a steaming path from 'A' Steam Generator prior to dryout of the 'B' Steam Generator?

To prevent ...

a. A void formation is the Reactor Vessel upper head region.

b. A rapid rise in core exit temperatures causing a loss of natural circulation.

c. A rapid rise in TC of the unaffected loop which would result in a loss of natural circulation.

d. A rapid pressurization of the PCS and subsequent pressurized thermal shock.

QUESTION: 027 (1.00)
Given the following:

- The plant is at 100% power
- CCW Surge Tank level is 50% and stable
- Then, a leak occurs in the Primary Coolant Pump Seal Cooler

Due to this leak, the following alarm annunciates:

- EK-1365, "PROCESS LIQ MONITORING HI RADIATION"

Which one of the following describes the expected indication for CCW Surge Tank Vent, CV0915, and CCW Surge Tank Makeup Valve, CV0918?

a. CV-0915 lined up to the Vent Gas Collection Header (VGCH).
CV-0918 closed.

b. CV-0915 lined up to the Vent Gas Collection Header (VGCH).
CV-0918 open.

c. CV-0915 lined up to the Waste Gas Surge Tank.
CV-0918 closed.

d. CV-0915 lined up to the Waste Gas Surge Tank.
CV-0918 open.

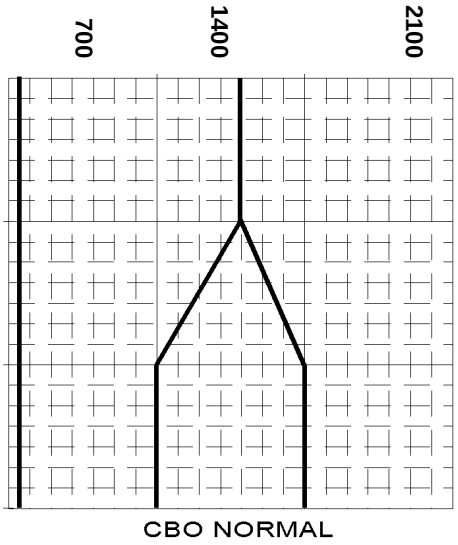
QUESTION: 028 (1.00)
Given the attached drawing of PR-0140B, Primary Coolant Pump, P-50D, Seal Pressure Recorder, which one of the following seal stages
have failed?

a. 1st stage only.

b. 2nd stage only.

c. 1st and 2nd stage only.

d. 2nd and 3rd stage only.



QUESTION: 029 (1.00)
Given the following plant conditions:

- The plant is at full power
- A severe thunderstorm is in progress
- An undetermined transient causes the following to occur:

- Plant trip
- An overcurrent fault condition on Startup Transformer 1-3
- Clearing of Switchyard 'R' Bus due to the fault

Assuming NO additional malfunctions and all other equipment functions as designed, which, if any, Primary Coolant Pumps will be operating?

a. ALL Primary Coolant Pumps.

b. ONLY P-50A and P-50C.

c. ONLY P-50B and P-50D.

d. NO Primary Coolant Pumps.

QUESTION: 030 (1.00)
Which statement describes the consequence of a high Volume Control Tank (VCT) pressure with Primary Coolant Pump Controlled Bleed-Off (CBO) in service during a plant startup?

a. Excessive operator dose because the VCT must be manually vented locally to prevent PCP seal damage.

b. Potential PCP seal failure due to reverse CBO flow if VCT pressure is greater than PCS pressure.

c. Potential PCP seal failure due to excessive CBO flow if RV-2082, PCP CBO Relief Valve, lifts.

d. Auto isolation of Controlled Bleed-Off (CBO) due to closure of CV-2099, PCP CBO Cont. Isolation, on high VCT pressure.

QUESTION: 031 (1.00)
Given the following conditions:

- The plant is in MODE 5
- Shutdown Cooling System is in service
- PCS temperature is 175°F
- The control room crew notices PCS temperature RISING

Which one of the following (1) accounts for the PCS temperature rise AND (2) lists the maximum allowable heatup rate?

a. (1) CV-3025, SDC Heat Exchanger Outlet, failed open.
(2) 40°F/Hour.

b. (1) CV-3212, 'B' SDC Heat Exchanger Inlet, failed closed.
(2) 20°F/Hour.

c. (1) CV-3006, SDC Heat Exchanger Bypass, failed open.
(2) 20°F/Hour.

d. (1) CV-3006, SDC Heat Exchanger Bypass, failed open.
(2) 40°F/Hour.

QUESTION: 032 (1.00)
Given the following:

- A large break LOCA has occurred
- SIRWT Level is 20%
- PCS pressure is 275 psia
- Safety injection has actuated and all equipment operates as designed

LPSI Pumps, P-67A and P-67B, ____(1)____ currently injecting water into the PCS and will trip on a low SIRWT Level (RAS) of 2% _____(2)_____.

a. (1) are
(2) to prevent clogging the Containment Sump screens

b. (1) are NOT
(2) to prevent clogging the Containment Sump screens

c. (1) are
(2) because there is insufficient net positive suction head (NPSH) during RAS

d. (1) are NOT
(2) because there is insufficient net positive suction head (NPSH) during RAS

QUESTION: 033 (1.00)
With the plant in MODE 4 and Pressurizer steam bubble formation in progress in accordance with SOP-1C, "Primary Coolant System - Heatup," which one of the following methods are relied upon for PCS overpressure protection?

a. LTOP in the "SDC" mode.

b. LTOP in the "LTOP" mode.

c. Shutdown Cooling Relief Valve, RV-3164.

d. Pressurizer Code Safety Relief Valves.

QUESTION: 034 (1.00)
With the plant in MODE 1 at 100% power the following occurs:

- EK-0733, QUENCH TANK HI-LO LEVEL, alarm annunciates
- EK-0732, QUENCH TANK HI PRESS, alarm annunciates
- Quench Tank level indicates 81% with pressure indicating 12 psig
- The control room crew has diagnosed that RV-1039, Pressurizer Relief Valve, is leaking
- ONP-23.1, "Primary Coolant Leak," has been entered

What action will the control room crew take to prevent RUD-0162, Quench Tank Rupture Disc, from actuating?

a. Drain the Quench Tank to T-74, Primary System Drain Tank.

b. Drain the Quench Tank to T-80, Equipment Drain Tank.

c. Vent the Quench Tank to the Containment.

d. Vent the Quench Tank to the Vent Gas Collection Header (VGCH).

QUESTION: 035 (1.00)
Given the following conditions with the plant in MODE 1 at full power:

- EK-1170 "COMPONENT CLG EX E-54A HI-LO TEMP," has annunciated
- CCW temperature is 89°F and rising slowly
- CCW Pump P-52A is in service
- CCW Pump discharge header pressure is 107 psig
- CV-0821 and CV-0822, CCW HX E-54A and E-54B Temp. Control Valves, are full open
- Lake Michigan water temperature is 81°F with all 3 SW pumps in service

Which one of the following describes the effect on the plant due to the above conditions and the appropriate crew response?

a. CCW flow is inadequate for current plant conditions. Start P-52B or P-52C, CCW Pump, in accordance with SOP-16, "Component Cooling Water System."

b. Service Water flow is inadequate for current plant conditions. Throttle open CV-0823 and 0826, CCW HX SW High Cap. Outlet Valves, via their local air regulators.

c. Service Water flow is inadequate for current plant conditions. Make preparations to commence a normal plant shutdown to MODE 3 in accordance with LCO 3.0.3.

d. CCW flow is inadequate for current plant conditions. Place CV-2023, Demineralizers T-51A/B & T-52 Bypass Valve, to the BYPASS position.

QUESTION: 036 (1.00)
During a power escalation a transient occurs which causes Pressurizer pressure to change to 2045 psia. Assuming all equipment is functioning properly, what are the expected indications for the in service Pressurizer Pressure Controller?

a. Process Indication > Setpoint Indication.
Output signal > 66%.

b. Process Indication < Setpoint Indication.
Output signal > 66%.

c. Process Indication < Setpoint Indication.
Output signal < 66%.

d. Process Indication > Setpoint Indication.
Output signal < 66%.

QUESTION: 037 (1.00)
The following plant conditions exist:

- The reactor has tripped from 100% power due to a Loss of all Offsite Power
- EDG 1-1 and 1-2 are running and loaded
- PCS pressure is 1975 psia and lowering
- PZR level is at program level

Which one of the following describes how power is restored to the PZR Heaters per ONP-18, "Pressurizer Pressure Control Malfunctions" for the above conditions?

a. Restore Pressurizer Heaters by closing the Pressurizer Heater transformer feeder breakers from both Buses 1D and 1E.

b. Select Pressurizer Heater Control switches for ALL heaters to OFF then reclose Pressurizer Heater transformer feeder breaker from Bus 1D AND Bus 1E.

c. Select Pressurizer Heater Control switches for heaters powered from Bus 1D to OFF then reclose Pressurizer Heater transformer feeder breaker from Bus 1D.

d. Select Pressurizer Heater Control switches for heaters powered from Bus 1E to OFF then reclose Pressurizer Heater transformer feeder breaker from Bus 1E.

QUESTION: 038 (1.00)
With the plant operating in MODE 1 the following alarm annunciates:

- EK-0543, "PREFERRED AC BUS NO. 1 TROUBLE"

Which one of the following describes the effect on the Reactor Protection System (RPS) reactor trip logic?

Trip logic is now ____(1)____ and after Channel 'A' RPS trips are bypassed will be _____(2)_____.

a. (1) one out of three
(2) two out of three

b. (1) two out of three
(2) one out of three

c. (1) one out of three
(2) one out of three

d. (1) two out of three
(2) two out of three

QUESTION: 039 (1.00)
During normal full power operation, a Reactor Protection System (RPS) Logic Matrix Power Supply fails. How will this failure impact the RPS?

a. RPS trip logic will be one out of three.

b. The reactor will trip if another power supply associated with a different Logic Matrix fails.

c. RPS trip logic will be two out of three.

d. The reactor will trip if another power supply associated with the same Logic Matrix fails.

QUESTION: 040 (1.00)
Given the following with the plant operating in MODE 1:

- A fault occurs on Preferred AC Bus Y-40 which subsequently de-energizes Y-40
- The crew enters ONP-24.4, "Loss of Preferred AC Bus Y-40"
- Subsequently, the plant is manually tripped due to a Main Steam Line Break inside the Containment
- PCS pressure is 1720 psia
- Containment pressure is 5.3 psig

Due to these conditions, which one of the following describes the correct action(s), if any, to take?

a. Push PB12 (Right) INJECTION INITIATE pushbutton to initiate Right Channel SIS ONLY.

b. Open CV-3002, Spray Valve, and start, P-54A, Spray Pump ONLY

c. Push PB12 (Right) INJECTION INITIATE pushbutton AND Open CV-3002, Spray Valve, AND start, P-54A, Spray Pump.

d. No actions are necessary, Containment Spray and Safety Injection Actuation will operate automatically for this event.

QUESTION: 041 (1.00)
Consider two separate excess steam demand events inside containment on the 'A' Steam Generator. During both events the leak size is the same. The only difference between the two events is that service water to containment is secured on the second event.

During the second event, Pressurizer level indication will be ___(1)___ and 'B' Steam Generator level indication will be ____(2)____ than the first event. (Assume 1 to 2 hours into each event)

a. (1) Higher
(2) Lower

b. (1) Higher
(2) Higher

c. (1) Lower
(2) Higher

d. (1) Lower
(2) Lower

QUESTION: 042 (1.00)
Consider a Loss of Coolant Accident event in which SIRWT Level has reached the setpoint for a Recirculation Actuation (RAS). In the event that West Safeguards Containment Sump Isolation Valve, CV-3030, does not open on a RAS, which one of the following will occur? Assume all other equipment is operable and functioning.

a. ONLY CV3070, HPSI Pump, P-66B, Subcooling Valve, will not open.

b. CV3070, HPSI Pump, P-66B, Subcooling Valve, will not open AND CV3001, Containment Spray Valve, will close.

c. ONLY CV3001, Containment Spray Valve, will close.

d. Operator action is required to close CV3070, HPSI Pump, P-66B, Subcooling Valve, AND CV3001, Containment Spray Valve.

QUESTION: 043 (1.00)
The following plant conditions exist:

- A 75 gpm tube leak has occurred on the 'B' S/G
- A loss of offsite power occurred immediately following the reactor trip
- PCS pressure is 1900 psia
- PCS temperature is 535°F
- The CRS directs a cooldown be commenced per EOP-5.0, "Steam Generator Tube Rupture Recovery"

The preferred method of cooldown will be established using the __(1)__. The most limiting component for the specified cooldown rate limit is the __(2)__.

a. (1) Turbine Bypass Valve
(2) Reactor Vessel

b. (1) Turbine Bypass Valve
(2) Pressurizer

c. (1) Atmospheric Dump Valves
(2) Reactor Vessel

d. (1) Atmospheric Dump Valves
(2) Pressurizer

QUESTION: 044 (1.00)
Given the following conditions:

- A Reactor trip from 100% power has just occurred
- The Main Turbine tripped as designed
- Main Feed Pump speed control was in CASCADE at the time of the trip
- NO operator actions have been taken

As a result, Steam Generator Water Level Control (SGWLC) controllers, LIC0701 and LIC0703, will _____(1)_____ and the Main Feed Pumps will _____(2)_____.

a. (1) transfer to MANUAL
(2) ramp to minimum speed

b. (1) transfer to MANUAL
(2) remain at full speed

c. (1) remain in AUTO
(2) remain at full speed

d. (1) remain in AUTO
(2) ramp to minimum speed

QUESTION: 045 (1.00)
The plant is operating at full power. The control room crew is preparing to bypass Feedwater Heaters, E-3A and E-4A, due to a tube leak inside E-3A. What action is required to be taken prior to bypassing E-3A and E-4A and why?

a. Lower plant power to ? 97% to prevent excessive extraction steam velocity in the next highest pressure feedwater heater.

b. Lower plant power to ? 97% to compensate for expected lower feedwater temperatures.

c. Lower turbine load to ? 600 MWe to prevent excessive extraction steam velocity in the next highest pressure feedwater heater.

d. Lower turbine load to ? 600 MWe to compensate for expected higher turbine back pressure.

QUESTION: 046 (1.00)
Given the following plant conditions:

- A Plant Startup is in progress in MODE 3
- Auxiliary Feedwater (AFW) Pump, P-8A, is in service
- EK-1108 "CONDENSATE STORAGE TANK T-2 HI-LO LEVEL" annunciates
- Moments later EK-1115 "CONDENSATE STORAGE TANK T-2 LO-LO LEVEL" annunciates
- Condensate Storage Tank, T-2, level indicates 7% and lowering

Which one of the following describes the impact on the plant due to this event and the appropriate action to take?

a. AFW Pump damage will occur due to suction vortexing in T-2. Ensure all AFW Pumps are tripped and placed in MANUAL.

b. AFW Pump damage will occur due to suction vortexing in T-2. Continue P-8A operation while aligning Fire Water to P-8A/B suction.

c. Buckling on the bottom plate of T-2 will occur. Ensure all AFW Pumps are tripped and placed in MANUAL.

d. Buckling on the bottom plate of T-2 will occur. Continue P-8A operation while aligning Fire Water to P8A/B suction.

QUESTION: 047 (1.00)
The "In Sync" light on the front panel of ED-08, Preferred AC Inverter #3, compares the frequency of _____(1)_____ to the frequency of _____(2)_____ to ensure they are synchronized.

a. (1) the output of the inverter
(2) the input of the inverter

b. (1) the output of the inverter
(2) the Bypass Source, Y01

c. (1) Preferred AC Bus, Y30
(2) the Bypass Source, Y01

d. (1) the output of the inverter
(2) Preferred AC Bus, Y30

QUESTION: 048 (1.00)
EOP-3.0, "Station Blackout Recovery," directs operators to ensure all Primary Coolant Pump DC Lift Pumps secured after ____(1)____ minutes to prevent _____(2)_____.

a. (1) Ten
(2) Excessive DC Battery drain

b. (1) Ten
(2) Excessive oil transfer from the PCP motor lower to upper oil reservoir

c. (1) Five
(2) Excessive DC Battery drain

d. (1) Five
(2) Excessive oil transfer from the PCP motor lower to upper oil reservoir

QUESTION: 049 (1.00)
Given a loss of all AC power with no Diesel Generator operating, you are directed to depress the Shunt Trip push button on panel D-11A. Where is this panel located and what will be the resultant effect?

a. Bus 1C room. Isolates all loads from Station Battery #1 EXCEPT DC Panel D-11A.

b. D/G 1-2 room. Isolates all loads from Station Battery #1 EXCEPT DC Panel D-11A.

c. D/G 1-2 room. Isolates all loads from Station Battery #1 INCLUDING DC Panel D-11A.

d. Bus 1C room. Isolates all loads from Station Battery #1 INCLUDING DC Panel D-11A.

QUESTION: 050 (1.00)
Given the following plant conditions:

- The plant is operating at full power
- Emergency Diesel Generator 1-1 is supplying Bus 1C in parallel with Safeguards Transformer 1-1

Which one of the following describes the response if all off-site power is lost?

a. Diesel Generator 1-1 will remain operating, output breaker 152-107 will trip and then reclose, the NSD sequencer will load Bus 1C.

b. Diesel Generator 1-1 will trip then restart, output breaker 152-107 will trip and Bus 1C will be deenergized.

c. Diesel Generator 1-1 will remain operating, output breaker 152-107 will trip and then reclose, the DBA sequencer will load Bus 1C.

d. Diesel Generator 1-1 will remain running, output breaker 152-107 will trip and Bus 1C will be deenergized.

QUESTION: 051 (1.00)
Given the following conditions:

- T-101B, Waste Gas Decay Tank, release is in progress
- Annunciator EK-0207, “STACK EFF RAD C-169 HIGH” is received in the Control Room due to RIA-2326, Normal Range Noble Gas Monitor, in alarm

Which one of the following will occur?

a. Main Exhaust Fans, V-6A/V-6B, automatically trip and their associated dampers close.

b. RIA-2326, Normal Range Noble Gas Monitor, meter transfers from cpm to R/Hr.

c. RGEM transfers from Normal (RIA-2326) to High Range (RIA-2327) Noble Gas Monitor.

d. CWRT Vent Valves, CV-1064/1065, automatically close.

QUESTION: 052 (1.00)
A Waste Gas Decay Tank batch release is planned, but the Waste Gas Monitor, RIA-1113, is INOPERABLE.

For this condition, ALL of the following are actions that will allow initiating the release EXCEPT:

a. Setup local portable monitoring equipment at release point.

b. Perform independent verification of the discharge flowpath lineup.

c. Obtain an additional sample of the tank contents.

d. Perform independent verification of the release rate calculations.

QUESTION: 053 (1.00)
Which one of the following conditions will result in CV-1359, Non-Critical Service Water Isolation Valve, automatically closing? (Consider each condition separately)

a. A steam line break results in Containment pressure rising to 3.6 psig.

b. A fuel element failure results in Containment radiation rising to 12R/Hr.

c. A Primary Coolant leak results in Pressurizer pressure lowering to 1550 psia.

d. A Service Water leak results in SW Critical Header pressure lowering to 40 psig.

QUESTION: 054 (1.00)
From full power, a Safety Injection occurs concurrent with a loss of Instrument Air. Instrument Air pressure indicates 10 psig and lowering. Several minutes later, it is noted that FWP Air Cross-tie Valve, CV-1221, indicating RED light is ON. The GREEN light is OFF. The handswitch remains selected to CLOSE.

Which one of the following accounts for the status of CV-1221?

CV-1221 has ...

a. opened automatically due to the Safety Injection Signal.

b. received an open signal when Instrument Air header pressure lowered to 85 psig.

c. failed open due to a loss of Instrument Air to the operator.

d. failed open due to a loss of control power from 1E bus.

QUESTION: 055 (1.00)
Which one of the following describes interlock features on the Personnel Air Lock and Escape Air Lock doors which are designed to ensure Containment integrity?

a. Personnel Air Lock doors cannot be opened at the same time as Escape Air Lock doors.

b. Neither door can be opened after a Containment High Pressure (CHP) or Containment High Radiation (CHR) condition.

c. An electrical device prevents the inner door from being opened at the same time as the outer door for the Personnel and Escape Air Locks.

d. A mechanical device prevents the inner door from being opened at the same time as the outer door for the Personnel and Escape Air Locks.

QUESTION: 056 (1.00)
Given the following:

- A reactor trip from 100% power occurs
- The control room crew observes that 4 full length control rods are indicating NOT fully inserted on the Core Matrix display
- The Reactor Operator attempts to emergency borate but VCT Isolation, MO-2087, will NOT close

Which one of the following actions will allow successful completion of emergency boration in accordance with SOP-2A, "Chemical and Volume Control System?"

a. Open MO-2169 and MO-2170, Boric Acid Gravity Feed Valves.

b. Start P-56A, Boric Acid Pump, and open MO-2140, Pumped Feed Valve.

c. Open MO-3072, HPSI Train 2/Charging Cross Connect Valve.

d. Open MO-2160, SIRWT to Charging Pump Isolation.

QUESTION: 057 (1.00)
The Reactor Vessel Level Monitoring System (RVLMS) lights indicate ALL GREEN lights OFF and ALL RED lights ON. This indicates that Reactor Vessel water level is approximately:

a. at or above the Reactor Vessel flange.

b. at or below the top of the fuel assemblies.

c. at or below the center of the hot and cold legs.

d. at or above the In-Core instrument flanges.

QUESTION: 058 (1.00)
With the plant operating in MODE 1, Pressurizer Pressure Controller, PIC-0101A, loses power due to an internal fault within the controller. Assuming PIC-0101A is in service, which one of the following describes the immediate impact on the plant?

a. RPS TM/LP Channel 'A' trips AND Pressurizer Proportional heaters receive full amps.

b. Pressurizer Proportional heaters receive full amps AND Pressurizer Spray valves close.

c. RPS TM/LP Channel 'A' trips AND Pressurizer Spray valves close.

d. Pressurizer Proportional heaters receive full amps ONLY.

QUESTION: 059 (1.00)
With the plant operating in MODE 1, the following alarm is received in the control room:

- EK-1309, "SPENT FUEL POOL HI/LO LEVEL"

The control room crew determines the alarm is due to a LOW level condition in the Spent Fuel Pool (SFP) and is due to normal evaporative losses. The Control Room Supervisor directs SFP level be raised to 6" below the skimmers. Which one of the following describes (1) the source of water that will be used to refill the SFP under these conditions AND (2) the monitoring requirements during the fill operation?

a. (1) T-90, Primary System Makeup Storage Tank.
(2) The Control Room SFP TV Monitor is acceptable to be used to monitor SFP level.

b. (1) T-90, Primary System Makeup Storage Tank.
(2) An Operator must be stationed at the SFP in addition to monitoring the Control Room TV Monitor.

c. (1) T-91, Utility Water Storage Tank.
(2) The Control Room SFP TV Monitor is acceptable to be used to monitor SFP level.

d. (1) T-91, Utility Water Storage Tank.
(2) An Operator must be stationed at the SFP in addition to monitoring the Control Room TV Monitor.

QUESTION: 060 (1.00)
The plant is operating in MODE 1 at full power when a turbine trip causes a reactor trip. During subsequent actions per EOP-1.0, "Standard Post Trip Actions," the Turbine NCO discovers that 'A' Main Feed Pump speed will NOT lower. Which one of the following describes the impact of this condition and the appropriate action?

a. The Safety Injection Actuation setpoint may be reached due to PCS overcooling. Trip Main Feed Pump, P-1A.

b. Inadequate Shutdown Margin may occur due to PCS overcooling. Trip Main Feed Pump, P1A.

c. The Safety Injection Actuation setpoint may be reached due to PCS overcooling. Trip Main Feed Pumps, P-1A AND P-1B.

d. Inadequate Shutdown Margin may occur due to PCS overcooling. Trip Main Feed Pumps, P1A AND P-1B.

QUESTION: 061 (1.00)
Given the following conditions:

- The plant is in MODE 3 following a reactor trip from 100% power
- PCS temperature is being controlled with the Turbine Bypass Valve in AUTO
- The Atmospheric Steam Dumps are closed with Steam Dump Controller, HIC-0780A, in AUTO
- The Average Temperature Display Select Switch is in the LOOP 2 position

Which one of the following describes the effect of TAVE failing LOW from TYT-0200, Loop 2 TAVE Calculator, on the plant. (Assume NO operator action has been taken)

a. The only means of PCS heat removal with the secondary plant is via the Main Steam Code Safety valves.

b. The Turbine Bypass Valve fails closed and will NOT open until the Average Temperature Display Select Switch is placed in LOOP 1 position.

c. The Turbine Bypass Valve fails closed and will NOT open. The ADVs will open on a quick open signal.

d. The TBV will modulate open/closed to maintain Main Steam pressure at setpoint. The ADVs will NOT modulate open.

QUESTION: 062 (1.00)
The following plant conditions exist:

- The plant is in MODE 1 at 100% power
- EHC Pump, P-19A, is selected to RUN and is operating
- EHC Pump, P-19B, is selected to AUTO and is off
- Control Room annunciator EK-0113, ?EH SYSTEM LO-LO LEVEL TRIP? annunciates

Which one of the following describes the expected configuration of EHC Pumps, P-19A/B?

a. Both EHC pumps operating.

b. Both EHC pumps off.

c. P-19A operating, P-19B off.

d. P-19A off, P-19B operating.

QUESTION: 063 (1.00)
Given the following conditions:

- The plant is at 100% power
- A Steam Generator tube leak has been diagnosed by the crew
- Preparations are being made to estimate the size of the tube leak per ONP-23.2
- The Off-Gas flow rate was reported at 3 scfm earlier in the shift
- Unknown to the crew, Off-Gas flow rate rises to 10 scfm

What would be the effect of using the LOWER Off Gas flow rate of 3 scfm to estimate the tube leak rate?

a. No effect as long as Off-Gas Monitor, RIA-0631, reading is correct.

b. The estimated leak rate will be lower than the actual leak rate.

c. No effect because the PCS Activity value corrects for variations in Off Gas flow.

d. The estimated leak rate will be higher than the actual leak rate.

QUESTION: 064 (1.00)
RIA-1113, Waste Gas Discharge Monitor, has alarmed to stop an Authorized Waste Gas Batch. Which one of the following actions must be performed OUTSIDE the control room before the batch can be re-started?

a. Place HS-1113, Waste Gas Surge Tank Discharge control valve, to close then back to open.

b. Push CV-1113, Waste Gas Surge Tank Discharge, HIGH RADIATION RESET pushbutton.

c. Place HS-1123, Waste Gas Decay Tanks Discharge control valve, to close then back to open.

d. Push CV-1123, Waste Gas Decay Tank Discharge, HIGH RADIATION RESET pushbutton.

QUESTION: 065 (1.00)
All of the following Fire Alarms on Panel C-47B require IMMEDIATE sounding of the Fire Alarm and call out of the Fire Brigade EXCEPT:

a. Charging Pump Areas.

b. Corridor 106 on Elev. 590?.

c. Remote Shutdown Panel & Stairwell.

d. Injection & Spray Pumps.

QUESTION: 066 (1.00)
Given the following conditions:

- The plant is at full power
- T-2, Condensate Storage Tank, temperature is 100°F
- T-81, Primary System Makeup Storage Tank, temperature is 80°F
- QO-21, "Inservice Test Procedure - Auxiliary Feedwater Pumps" is to be performed
- Auxiliary Feedwater flow will be initiated to BOTH Steam Generators at the programmed value for an Auxiliary Feedwater Actuation (AFAS)

Immediately prior to initiation of AFW flow, which one of the following is the MAXIMUM allowable Heat Balance power level?

a. 99.5%

b. 99.4%

c. 99.3%

d. 99.2%

QUESTION: 067 (1.00)
The Operational Decision Making Issue (ODMI) process would most likely be used for which one of the following conditions?

a. Control Rod Drive seal leakage is steadily trending upwards and will reach a limit in 2 weeks.

b. The Operations Department staffing level is below the fleet recommended standard.

c. A Technical Specification Surveillance Test procedure cannot be performed as written.

d. The control room crew is preparing to maneuver the plant from MODE 2 to MODE 1.

QUESTION: 068 (1.00)
Preparations are being made to enter MODE 6.

Minimum PCS boron concentration must be at least _____(1)____ and sufficient to ensure that with all control rods withdrawn, the reactor remains shutdown by at least _____(2)____.

a. (1) 1720 ppm
(2) 5.0%

b. (1) 2500 ppm
(2) 5.0%

c. (1) 2500 ppm
(2) 2.0%

d. (1) 1720 ppm
(2) 2.0%

QUESTION: 069 (1.00)
When developing a tagout for a pump, which one of the following describes the correct component tagging sequence?

a. Discharge valve.
Suction valve.
Breaker for main power.

b. Breaker for main power.
Suction valve.
Discharge valve.

c. Breaker for main power.
Discharge valve.
Suction valve.

d. Suction valve.
Discharge valve.
Breaker for main power.

QUESTION: 070 (1.00)
Which one of the following describes when ALL Auxiliary Feedwater Pumps are required to be OPERABLE during a Plant Startup from MODE 5?

All AFW Pumps must be operable prior to ....

a. PCS reaching 325°F.

b. Reactor criticality.

c. entering MODE 4.

d. entering MODE 3.

QUESTION: 071 (1.00)
Which one of the following lists the minimum Containment Air Cooler Fans required to be in service to support operability of Containment Gas Radiation Monitor, RIA1817?

a. None, RIA-1817 has a sample pump.

b. One Containment Air Cooler Fan.

c. Two Containment Air Cooler Fans.

d. Three Containment Air Cooler Fans.

QUESTION: 072 (1.00)
During a batch release of T-68B, Waste Gas Decay Tank, with V-6A, Main Exhaust Fan, tagged for maintenance, the in-service Main Exhaust Fan, V-6B, trips. Which one of the following actions is required in accordance with SOP-18A, "RADIOACTIVE WASTE SYSTEM - GASEOUS?"

a. Depress the HIGH pushbutton on Waste Gas Discharge Radiation Monitor, RIA-1113.

b. Secure Radwaste Area Ventilation fans, V-10 and V-14A/B.

c. Lower Waste Gas Discharge Radiation Monitor, RIA-1113, trip setpoint.

d. Ensure CV-1816 and CV-1817, Main Exhaust Fan discharge dampers, are closed.

QUESTION: 073 (1.00)
EOP-7.0, "Loss of All Feedwater Recovery," contains the following guidance concerning restoration of feedwater to a dry Steam Generator. What is the reason for this guidance?

CAUTION

Limit feed flow to less than 300 gpm
for any S/G with level less than -84%

a. Avoids a loss of PCS pressure control due to Pressurizer insurges and outsurges.

b. Prevents a rapid PCS cooldown, avoiding a Pressurized Thermal Shock to the Rx vessel.

c. Prevents uneven cooling of the PCS which may result in a localized reactivity excursion.

d. Minimizes the probability of causing significant damage to the S/G tube bundle.

QUESTION: 074 (1.00)
Which one of the following is the minimum complement of personnel that satisfies the requirement for the Fire Brigade in accordance with FPIP-3, "Plant Fire Brigade?"

a. 2 Security Officers
2 Auxiliary Operators
1 Nuclear Control Operator

b. 2 Security Officers
3 Auxiliary Operators
1 Radiation Protection Technician

c. 2 Security Officers
2 Auxiliary Operators
2 Radiation Protection Technicians

d. 1 Security Officer
3 Auxiliary Operators
2 Radiation Protection Technicians

QUESTION: 075 (1.00)
Which one of the following describes the minimum requirements for receiving an alarm in the control room that is unexpected (i.e., not part of a planned activity)?

a. Announce the alarm ONLY if it is deemed critical by the ATC operator and reference the appropriate alarm response procedure EACH time the alarm comes in.

b. Announce the alarm to the operating crew for each occurrence and reference the appropriate alarm response procedure EACH time the alarm comes in.

c. Announce the alarm to the operating crew for each occurrence and reference the alarm response procedure the FIRST time the alarm comes in on each shift.

d. Announce the alarm ONLY if it is deemed critical by the ATC operator and reference the alarm response procedure the FIRST time the alarm comes in on each shift.

QUESTION: 076 (1.00)
Given the following conditions during a Loss of Shutdown Cooling event in MODE 5:

- PCS Level is 620' 6"
- Average of Qualified CETs indicates 192°F and rising
- Containment air temperature is 110°F
- Y-30, Preferred AC Bus, is de-energized for maintenance

Based on the above conditions, which one of the following safety functions does NOT meet the acceptance criteria of ONP-17, Loss of Shutdown Cooling, Safety Function Status Checks?

a. Maintenance of Vital Auxiliaries - Electric

b. Containment Atmosphere

c. PCS/Core Heat Removal

d. PCS Inventory Control

QUESTION: 077 (1.00)
Given the following conditions:

- The plant is at 100% power
- Preferred AC Bus Y-30 is de-energized due to a fault

Main Feed Pump, P-1A, trips causing 'B' Steam Generator water level to reach its RPS low level trip setpoint. The following indications are noted on RPS Clutch Power Supply Panel, C-06:

	AC ON (white)	DC ON (white)	TRIP (red)
Clutch Power Supply #1/2	OFF	OFF	OFF
Clutch Power Supply #3/4	ON	ON	OFF

After noting the above indications, the Reactor Operator depresses the reactor trip pushbutton on panel C-02. Which one of the following describes the change in light status for the Clutch Power Supply red TRIP lights as a result of the RO depressing the reactor trip push button AND Emergency Plan entry requirements, if any?

a. Clutch Power Supply #1/2 red TRIP light energizes ONLY. Emergency Plan entry is required.

b. Clutch Power Supply #1/2 red TRIP light energizes ONLY. Emergency Plan entry is NOT required

c. Clutch Power Supply #3/4 red TRIP light energizes ONLY. Emergency Plan entry is required.

d. Clutch Power Supply #3/4 red TRIP light energizes ONLY. Emergency Plan entry is NOT required.

QUESTION: 078 (1.00)
During a Loss of All Feedwater event with EOP-7.0, "Loss of All Feedwater Recovery," procedure implemented, which one of the following requires entry into EOP-9.0, "Functional Recovery Procedure"?

a. Once-through PCS cooling has been initiated.

b. 'A' Steam Generator level has reached - 84%.

c. Condensate Storage Tank, T-2, LO-LO level alarm is received.

d. 'A' Steam Generator pressure is 920 psia.

QUESTION: 079 (1.00)
With the plant operating in MODE 1, a reactor trip occurs due to a loss of off-site power. During the actions of EOP-1.0, "Standard Post Trip Actions," a fire develops in cable spreading causing ALL Preferred AC Buses to DEENERGIZE. Which one of the following describes the location for controlling the plant and the appropriate procedure to mitigate this event?

a. Panel C-150/C-150A. EOP-3.0, "Station Blackout Recovery."

b. Panel C-33. EOP-3.0, "Station Blackout Recovery."

c. Panel C-150/C-150A. EOP-9.0, "Functional Recovery Procedure."

d. Panel C-33. EOP-9.0, "Functional Recovery Procedure."

QUESTION: 080 (1.00)
While the plant is in MODE 1, an automatic reactor trip occurs. The control room team has determined that EOP-9.0, "Functional Recovery Procedure," is the most appropriate procedure to implement based on existing plant conditions. Following assessment of resources in accordance with Resource Assessment Trees to determine safety function success paths, it is determined that "Maintenance of Vital Auxiliaries - Electric" (MVAE) is in jeopardy and "Pressure Control" (PC) is challenged. Which one of the following describes the order that operator actions should be prioritized based on the above conditions?

a. 1. MVAE
   2. PC
   3. All other safety functions

b. 1. PC
   2. MVAE
   3. All other safety functions

c. Perform operator actions for Reactivity Control first, then all other safety functions.

d. Perform operator actions for MVAE first, then all other safety functions.

QUESTION: 081 (1.00)
Given the following conditions with the plant operating at full power:

- P-7B, SW Pump, is out of service for repairs
- P-7A and P-7C, SW Pumps, are in service
- Alarm EK-1163, "CRITICAL SERV WATER HEADER 'B' LO PRESSURE," annunciates
- Alarm EK-1347, "CONTAINMENT AIR COOLERS SERV WATER LEAK," annunciates
- The leak is located on the Containment Service Water supply header INSIDE Containment

After isolating the leak, 100% post accident cooling capability ___(1)___ satisfied for the Containment Cooling System and ___(2)___ satisifed for the Service Water System.

a. (1) IS
(2) IS

b. (1) IS
(2) IS NOT

c. (1) IS NOT
(2) IS

d. (1) IS NOT
(2) IS NOT

QUESTION: 082 (1.00)
With the plant in MODE 5 and Control Rod Testing in progress, EK-0972, "REACTOR TRIP," alarm annunciates and all full length control rods indicate on the bottom of the core. Which one of the following describes: (1) An indication that the Reactor trip was due to a continuous rod withdrawal event and; (2) The applicable Technical Specification Basis for the function?

a. (1) EK-0601D, "ZERO POWER MODE BYPASS," alarm clears.
(2) The Zero Power MODE Bypass Removal function is required to be operable in MODE 5 so that the bypass is automatically removed by Source Range Nuclear Instruments if a continuous control rod bank withdrawal event occurs.

b. (1) EK-0601D, "ZERO POWER MODE BYPASS," alarm clears.
(2) The Zero Power MODE Bypass Removal function is required to be operable in MODE 5 so that the bypass is automatically removed by Wide Range Nuclear Instruments if a continuous control rod bank withdrawal event occurs.

c. (1) EK-0601A, "VARIABLE HIGH POWER LEVEL CHANNEL TRIP," alarm annunciates.
(2) The Variable High Power Trip is required to be operable in MODE 5 to provide reactor core protection against positive reactivity excursions any time a control rod is capable of being withdrawn.

d. (1) EK-0602A, "HIGH POWER RATE CHANNEL TRIP," alarm annunciates.
(2) The High Power Rate Trip is required to be operable in MODE 5 to provide protection from transients such as a continuous control rod withdrawal event from low power levels any time a control rod is capable of being withdrawn.

QUESTION: 083 (1.00)
With the plant operating in MODE 1, it is determined that two (2) Safety Injection Tanks are INOPERABLE. Which one of the following describes the required action AND the basis for the action?

a. Immediately restore operability of one Safety Injection Tank due to potential inadequate volume in the Containment Sump during the recirculation phase (RAS) of a LOCA.

b. Immediately restore operability of one Safety Injection Tank because the plant is in a condition outside of the accident analysis.

c. Within 1 hour initiate action to place the plant in MODE 3 due to potential inadequate volume in the Containment Sump during the recirculation phase (RAS) of a LOCA.

d. Within 1 hour initiate action to place the plant in MODE 3 because the plant is in a condition outside of the accident analysis.

QUESTION: 084 (1.00)
Which one of the following describes (1) the accident, in addition to a Steam Generator Tube Rupture and Main Steam Line Break, that Primary to Secondary leakage is a factor in the amount of dose released to the public and (2) the safety analysis assumption for primary to secondary leakage from all steam generators for this accident?

a. (1) Control Rod Ejection.
(2) 0.3 GPM.

b. (1) Control Rod Ejection.
(2) 0.1 GPM.

c. (1) Loss of all Feedwater.
(2) 0.3 GPM.

d. (1) Loss of all Feedwater.
(2) 0.1 GPM.

QUESTION: 085 (1.00)
Which one of the following requires a 1 HOUR report to the NRC in accordance with 10CFR50.72?

a. A plant shutdown is initiated in accordance with LCO 3.0.3.

b. The Reactor is automatically tripped by the Reactor Protection System.

c. A confirmed violation of Fitness for Duty requirements has occurred.

d. The Control Room is evacuated due to hazardous conditions.

QUESTION: 086 (1.00)
Given the following conditions:

- The Reactor was tripped due to a Loss of Coolant Accident AND a Loss of all Off-site Power
- EOP-1.0, "Standard Post Trip Actions," have been completed and EOP-4.0, "Loss of Coolant Accident Recovery," has been implemented
- Containment Spray Pump, P-54A, is out of service for maintenance
- Containment Pressure is 21 psig
- Safety Injection Refueling Water Tank, T-58, level is 1%
- The Pressurizer is empty
- Containment Spray Pump, P-54B, trips

Which one of the following describes the impact AND and the appropriate procedure to mitigate this event?

a. Inadequate Containment cooling. Transition to EOP-9.0 "FUNCTIONAL RECOVERY PROCEDURE."

b. Runout of Containment Spray Pump, P-54C. Perform actions of EOP Supplement 42, "PRE AND POST RAS ACTIONS."

c. Inadequate Containment cooling. Perform actions of EOP Supplement 42, "PRE AND POST RAS ACTIONS."

d. Runout of Containment Spray Pump, P-54C. Transition to EOP-9.0 "FUNCTIONAL RECOVERY PROCEDURE."

QUESTION: 087 (1.00)
Given the following:

- The Plant is in MODE 5
- All 2400 Volt Buses are being supplied by Safeguards Transformer 1-1
- Switchyard "R" Bus is de-energized for maintenance
- The load tap changer on Safeguards Transformer 1-1 malfunctions and is determined to be inoperable
- The Control Room team determines that 2400 Volt Buses must be transferred to Station Power Transformer 1-2 via backfeed from the Main Generator 345 kV line

Which one of the following describes the Technical Specification implications for this event and why?

a. The applicable condition of LCO 3.8.2, "AC Sources - Shutdown," must be entered because two qualified offsite sources are required to be operable in MODE 5.

b. NO LCO actions apply because no offsite power sources are required to be operable in MODE 5 as long as both Diesel Generators are Operable.

c. NO LCO actions apply because Station Power Transformer 1-2 is considered a qualified offsite power source and only one offsite power source is required in MODE 5.

d. The applicable condition of LCO 3.8.2, "AC Sources - Shutdown," must be entered because there are no operable qualified offsite power sources available.

QUESTION: 088 (1.00)
Given the following with the plant in MODE 1 at 100% power:

- LIA-1400, Diesel Fuel Oil Storage Tank T-10A level indication, is out of service
- Auxiliary Operator reports that T-10A level indicates 51" by dipstick

Which one of the following describes the appropriate action to take AND the basis for the action?

a. Immediately declare BOTH EDGs inoperable. The EDG fuel oil supply is less than the required 15 hour supply.

b. Within 1 HOUR initiate action to transfer fuel oil from T-926, Feedwater Purity Fuel Oil Tank. The EDG fuel oil supply is less than the required 7 day supply.

c. Immediately declare BOTH EDGs inoperable. The EDG fuel oil supply is less than the required 7 day supply.

d. Within 1 HOUR initiate action to transfer fuel oil from T-926, Feedwater Purity Fuel Oil Tank. The EDG fuel oil supply is less than the required 15 hour supply.

QUESTION: 089 (1.00)
With the plant in MODE 1 at full power the following occurs:

- EK-1370, "RADIATION MONITORS SAMPLERS FLOW FAILURE," annunciates on panel C13 due to low sample flow from RIA-1811, W ENG Safeguards Radwaste Ventilation Monitor
- Sample Flow to RIA-1811 CANNOT be established

Which one of the following describes the action that must be taken and the Technical Specification basis for the action?

a. WITHIN 1 HOUR initiate action to close PO-1811 and PO-1812, West Engineered Safeguards Radwaste Isolation Dampers. This action lowers the potential dose at the site boundary to less than 10CFR 100 guidelines if an accident occurs.

b. WITHIN 1 HOUR initiate action to close PO-1811 and PO-1812, West Engineered Safeguards Radwaste Isolation Dampers. This action minimizes post RAS dose in the Auxiliary Building to less than 10CFR 20 guidelines.

c. IMMEDIATELY initiate action to close PO-1811 and PO-1812, West Engineered Safeguards Radwaste Isolation Dampers. This action lowers the potential dose at the site boundary to less than 10CFR 100 guidelines if an accident occurs.

d. IMMEDIATELY initiate action to close PO-1811 and PO-1812, West Engineered Safeguards Radwaste Isolation Dampers. This action minimizes post RAS dose in the Auxiliary Building to less than 10CFR 20 guidelines.

QUESTION: 090 (1.00)
With the plant operating in MODE 1 the following alarms annunciate in the Control Room:

- EK-1101, "CONTAINMENT INSTR AIR LO PRESS"
- EK-1102, "INSTRUMENT AIR LO PRESS"
- EK-1103, "SERVICE AIR LO PRESS"
- EK-1105, "AIR COMPRESSORS STBY COMP RUNNING"

The Reactor Operator then informs the Control Room Supervisor of the following indications:

- All Instrument Air Compressors are running
- Instrument Air header pressure is 83 psig and lowering
- Instrument Air Flow as read on FI-1210 indicates 325 cfm
- Instrument Air Dryer, M-2, pre-filter ?p indicates 3.8 psi

Based on these conditions, which one of the following describes the cause of the above symptoms and the procedural action that the Control Room Supervisor will direct that will restore Instrument Air Pressure?

a. A leak exists on the Instrument Air system. Open CV-1221, Service/Instrument Air Tie-in from the FWP Building, in accordance with ONP-7.1, "Loss of Instrument Air."

b. The Instrument Air Dryer pre-filter is clogged. Alternate pre-filters to the standby pre-filter in accordance with SOP-19, "Instrument Air System."

c. The Instrument Air Dryer pre-filter is clogged. Open CV-1221, Service/Instrument Air Tie-in from the FWP Building, in accordance with ONP-7.1, "Loss of Instrument Air."

d. A leak exists on the Instrument Air system. Cross-tie T9C, High Pressure Control Air Receiver, with Instrument Air in accordance with SOP-19, "Instrument Air System."

QUESTION: 091 (1.00)
With the plant in MODE 1 at full power the following conditions exist:

- EK-0954, "ROD DRIVE SEAL LEAK OFF HI TEMP," annunciates
- Control Rod Seal leakoff temperature for Rod #26 is indicating 225°F on TRA0150, CRDM Seal Leakoff Temperature Alarm Recorder
- All other CRDM Leak Off temperatures indicate normal

Which one of the following describes the required action that the Control Room Supervisor will direct?

a. Enter ONP-6.2, "Loss of Component Cooling Water," due to an elevated CRDM seal leak off temperature for CRD-26.

b. Initiate a work request for repairs because an indication of > 212°F on CRDM leakoff temperature indicates a failed temperature element.

c. Verify CRDM Cooling Fans, V-49A/B, are in service and perform a normal plant shutdown to MODE 3 in accordance with GOP-8.

d. Perform a Primary Coolant System leakage calculation in accordance with DWO-1, "Operator's Daily/Weekly Items, MODE 1, 2, 3, 4," to verify seal leakage from CRD-26.

QUESTION: 092 (1.00)
Given the following conditions during implementation of EOP-8.0, "Loss of Forced Circulation Recovery":

- Pressurizer pressure is 1800 psia and stable
- Pressurizer level is 14% and slowly lowering
- Average CET temperature is 569°F and stable
- Bus 1C is de-energized due to a fault
- PCS Loop deltaT is 36°F and stable
- 'A' S/G level is 45% and slowly lowering; 'B' S/G level is 42% and slowly lowering
- Feedwater is NOT in service

Based on the above conditions, which one of the following is the highest priority Safety Function that is NOT satisfied?

a. PCS Inventory Control.

b. PCS Heat Removal.

c. Core Heat Removal.

d. Maintenance of Vital Auxiliaries, Electric.

QUESTION: 093 (1.00)
Which one of the following describes why Reactor power is limited to ? 70% RTP when two Power Range Excore Nuclear Instrument channels are inoperable?

a. This is below the power at which Quadrant Power Tilt (QPT) is required to be monitored.

b. Due to the increased uncertainty associated with the input to Thermal Margin/Low Pressure (TMLP) and Variable High Power (VHPT) trips.

c. This is below the power at which Axial Shape Index (ASI) is required to be monitored.

d. Due to the increased uncertainty associated with the input to Loss of Load and Variable High Power (VHPT) trips.

QUESTION: 094 (1.00)
During a Site Area Emergency with the Technical Support Center operational, which one of the following persons is responsible for ensuring PA announcements regarding emergency conditions occur at regular intervals?

a. Shift Manager.

b. Site Emergency Director.

c. Operational Support Center Director.

d. Control Room Technical Information Facilitator (TIF).

QUESTION: 095 (1.00)
Given the following with the Plant in MODE 1:

- CV-1101, Waste Gas Surge Tank, T-67, Inlet Containment Isolation Valve, is determined to be INOPERABLE at 0600 on July 11th
- CV-1102, Waste Gas Surge Tank, T-67, Inlet Containment Isolation Valve, is failed closed at 0800 on July 11th to meet required action A.1 (see below)

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more penetration flow paths with one containment isolation valve inoperable (except for purge exhaust valve or air room supply valve not locked closed).	A.1 Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, blind flange, or check valve with flow through the valve secured. AND A.2 Verify the affected penetration flow path is isolated.	4 hours Once per 31 days

Using the above actions from Technical Specification 3.6.3, "Containment Isolation Valves," which one of the following is the latest date and time that CV-1102 can be verifed closed to meet the completion time of required action A.2?

a. 0600, August 11th

b. 0800, August 11th

c. 1000, August 11th

d. 0900, August 17th

QUESTION: 096 (1.00)
Given the following:

The plant is in an emergency The control room crew determines that an action must be taken to maintain the plant in a safe condition but the action deviates from the Palisades operating license

The MINIMUM permission required to take this action is _____(1)_____ and the NRC must be notified of this action no later than ___(2)___ from the time that it was taken.

a. (1) The Shift Manager
(2) 30 minutes

b. (1) An On-Shift Licensed Senior Reactor Operator
(2) 30 minutes

c. (1) The Shift Manager
(2) one hour

d. (1) An On-Shift Licensed Senior Reactor Operator
(2) one hour

QUESTION: 097 (1.00)
Two Auxiliary Operators are preparing to enter Containment to perform a Control Rod Drive seal leakoff measurement. Given the following conditions:

- Reactor power is 100%
- Containment pressure is 0.1 psig
- Containment temperature is 105°F
- Radiation Protection Manager approval has been obtained

Based on the above conditions, which one of the following requirements is associated with this entry?

a. Reactor power must be lowered to ? 80%.

b. Reactor power must be maintained constant.

c. Containment Monitor readings must be < 100mr/Hour.

d. Containment Temperature must be ? 100°F.

QUESTION: 098 (1.00)
A Site Area Emergency has been declared due to a LOCA outside Containment. An Auxiliary Operator has been assigned to make an emergency entry into the Auxiliary Building to attempt to isolate the leak. This action will result in protecting the offsite population from receiving significant dose. As the Site Emergency Director, you have approved this individual to enter. While briefing prior to entry, what will you instruct the operator is their MAXIMUM exposure limit for this activity?

Given the following information for the Auxiliary Operator:

- Total Lifetime exposure: 3800 mrem TEDE
- Current Year exposure: 800 mrem TEDE

a. 1200 mrem TEDE.

b. 4200 mrem TEDE.

c. 24200 mrem TEDE.

d. 25000 mrem TEDE.

QUESTION: 099 (1.00)
Which one of the following does NOT restrict entry into EOP-2.0, "Reactor Trip Recovery," in accordance with EOP-1.0, attachment 1, "Event Diagnostic Flow Chart?"

a. Loss of DC Buses D21-1 AND D21-2.

b. Containment pressure indicates 1.5 psig.

c. PCS pressure indicates 1620 psia and stable.

d. Loss of 2400V Bus 1C AND DC Bus D11A.

QUESTION: 100 (1.00)
Which one of the following instruments is identified as Post Accident Instrumentation per LCO 3.3.7, "Post Accident Monitoring Instrumentation"?

a. Source Range neutron flux indication.

b. Wide Range neutron flux indication.

c. AFW Flow indication.

d. SIRWT Level indication.

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

ANSWER: 001 (1.00)
c.
REFERENCE:
E-17 Sh 21, 21A
BANK
HIGH
000007EK2. ..(KA's)

ANSWER: 002 (1.00)
d.
REFERENCE:
EOP-1.0 Basis, page 21
EOP Supplement 1
BANK
FUNDAMENTAL
000008AK3. ..(KA's)

ANSWER: 003 (1.00)
c.
REFERENCE:
ARP-4, window 63/64; SOP-2A, attachment 2
BANK
HIGH
000009EA10 ..(KA's)

ANSWER: 004 (1.00)
a.
REFERENCE:
ONP-6.2 section 4.3, ARP-5 window 8
BANK
FUNDAMENTAL
000015/17A2.08 ..(KA's)

ANSWER: 005 (1.00)
b.
REFERENCE:
SOP-1A, attachment 10; ONP-18, 4.2.1
BANK
HIGH
000022 2.2.44 ..(KA's)

ANSWER: 006 (1.00)
b.
REFERENCE:
ONP-7.1, section 4.1, M-204 sheet 1
BANK
HIGH
000025AK1.01 ..(KA's)

ANSWER: 007 (1.00)
b.
REFERENCE:
DBD 1.01, 3.2.3.3; M-209, sheet 3
BANK
FUNDAMENTAL
000026K302 ..(KA's)

ANSWER: 008 (1.00)
a.
REFERENCE:
EOP-4.0 Basis, step 10.f
NEW
FUNDAMENTAL

000027K303 ..(KA's)

ANSWER: 009 (1.00)
d.
REFERENCE:
ARP-5, window 72; Drawing M1Q-114
NEW
HIGH
000029A112 ..(KA's)

ANSWER: 010 (1.00)
d.
REFERENCE:
EOP-5.0, step 21
NEW
HIGH
000038A203 ..(KA's)

ANSWER: 011 (1.00)
b.
REFERENCE:
M-207, sheet 1; EOP Supplement 6
NEW
HIGH
000040 2.4.2 ..(KA's)

ANSWER: 012 (1.00)
d.
REFERENCE:
ONP-3, 3.2 and 4.1
NEW
HIGH
000054EK1.3 ..(KA's)

ANSWER: 013 (1.00)
b.
REFERENCE:
EOP-8.0, step 19
MODIFIED
HIGH
000056K101 ..(KA's)

ANSWER: 014 (1.00)
d.
REFERENCE:
ONP-24.5, section 2.0 and note prior to 4.4
BANK
FUNDAMENTAL
000057K301 ..(KA's)

ANSWER: 015 (1.00)
d.
REFERENCE:
ONP-2.3, attachment 1; ARP-3, window 48
BANK
HIGH
000058A101 ..(KA's)

ANSWER: 016 (1.00)
a.
REFERENCE:
M-213, M-208, sheet 1A
BANK
HIGH
000062A202 ..(KA's)

ANSWER: 017 (1.00)
c.
REFERENCE:
ONP-7.1, Attachment 1 and Attachment 2
BANK
HIGH
000065 2.1.7 ..(KA's)

ANSWER: 018 (1.00)
a.
REFERENCE:
ARP-2, window 6; SOP-8, attachment 1, 4.3
NEW
HIGH
000077K103 ..(KA's)

ANSWER: 019 (1.00)
a.
REFERENCE:
SOP-2A, attachment 2
NEW
HIGH
000028 2.1.31 ..(KA's)

ANSWER: 020 (1.00)
d.
REFERENCE:
ONP-23.3, 4.6; E-17, sheet 7
NEW
FUNDAMENTAL
000036K101 ..(KA's)

ANSWER: 021 (1.00)
b.
REFERENCE:
ONP-23.2; M-206, sheet 1C; M-218, sheet 2
NEW
HIGH
000037A207 ..(KA's)

ANSWER: 022 (1.00)
a.
REFERENCE:
ARP-8, window 66; M-658, sheet 1
NEW
FUNDAMENTAL
000061K302 ..(KA's)

ANSWER: 023 (1.00)

000067A1.05 ..(KA's)

ANSWER: 024 (1.00)
c.
REFERENCE:
ONP-25.2, step 40
NEW
FUNDAMENTAL
000068A204 ..(KA's)

ANSWER: 025 (1.00)
d.
REFERENCE:
EOP Supp 1, page 4; EOP Supplement 1 Basis, page 4
NEW
FUNDAMENTAL
000069 2.4.9 ..(KA's)

ANSWER: 026 (1.00)
d.
REFERENCE:
EOP-6.0, Basis, step 16
BANK
FUNDAMENTAL
CE/A11 AK1.2

ANSWER: 027 (1.00)
a.
REFERENCE:
ARP-8, window 65 and attachment 3, page 3
BANK
HIGH
CE/A16 AK2.1 ..(KA's)

ANSWER: 028 (1.00)
b.
REFERENCE:
ARP-5, Attachment 1, page 2
BANK
HIGH
003K1.03 ..(KA's)

ANSWER: 029 (1.00)
d.
REFERENCE:
E-1, sheet 1; E-17, sheet 9
BANK
HIGH
003K2.01 ..(KA's)

ANSWER: 030 (1.00)
b.
REFERENCE:
SOP-1C note prior to 7.1.2.m
BANK
FUNDAMENTAL
004K304 ..(KA's)

ANSWER: 031 (1.00)
d.
REFERENCE:
M-204, sheet 1; Tech Spec 3.4.3
MODIFIED
HIGH
005K603 ..(KA's)

ANSWER: 032 (1.00)
d.
REFERENCE:
DBD-2.01, 3.2 and 3.3.1.5.H
NEW
HIGH
006K508 ..(KA's)

ANSWER: 033 (1.00)
b.
REFERENCE:
SOP-1C, 7.1.4.h.2; SOP-3, 7.3.9.k
NEW
HIGH
007K502 ..(KA's)

ANSWER: 034 (1.00)
a.
REFERENCE:
ARP-4, window 32 and 33
NEW
HIGH
007A101 ..(KA's)

ANSWER: 035 (1.00)
b.
REFERENCE:
ARP-7, window 70
NEW
HIGH
008A203 ..(KA's)

ANSWER: 036 (1.00)
c.
REFERENCE:
Operator Aid OA-116
BANK
HIGH
010A302 ..(KA's)

ANSWER: 037 (1.00)
c.
REFERENCE:
ONP-18, 4.2.1.c
BANK
HIGH
010A402 ..(KA's)

ANSWER: 038 (1.00)
a.
REFERENCE:
ONP-18, 4.2.1.c
NEW
FUNDAMENTAL
012 2.2.37 ..(KA's)

ANSWER: 039 (1.00)
d.
REFERENCE:
FSAR 7.2.7.8, Vendor Drawing M1Q 113/114
BANK
HIGH
012K602 ..(KA's)

ANSWER: 040 (1.00)
c.
REFERENCE:
ONP-24.4, step 4.1
BANK
HIGH
013K201 ..(KA's)

ANSWER: 041 (1.00)
b.
REFERENCE:
EOP Supplement 9, 10, and 11
BANK
HIGH
022K301 ..(KA's)

ANSWER: 042 (1.00)
b.
REFERENCE:
M-204 sheet 1A; M-204 sheet 1; M-203 sheet 2; DBD-2.03
NEW
FUNDAMENTAL
026K401 ..(KA's)

ANSWER: 043 (1.00)
c.
REFERENCE:
SOP-1B, section 4.4; SOP-1B section 7.1.1.e.5
EOP-5.0, step 32
BANK
HIGH
039K505 ..(KA's)

ANSWER: 044 (1.00)
a.
REFERENCE:
E-17, sheet 9
BANK
FUNDAMENTAL
059K418 ..(KA's)

ANSWER: 045 (1.00)
c.
REFERENCE:
SOP-10, section 4.5
NEW
FUNDAMENTAL
059A103 ..(KA's)

ANSWER: 046 (1.00)
a.
REFERENCE:
ARP-7, window 15
NEW
HIGH
061A204 ..(KA's)

ANSWER: 047 (1.00)
b.
REFERENCE:
SOP-30, 7.6.2.h; Vendor Drawing E-11B, sheet 16, 17
BANK
FUNDAMENTAL
062A304 ..(KA's)

ANSWER: 048 (1.00)
c.
REFERENCE:
EOP-3.0, step 12 basis
NEW
FUNDAMENTAL
063A403 ..(KA's)

ANSWER: 049 (1.00)
a.
REFERENCE:
ONP-2.3 step 11 and attachment 1
NEW
FUNDAMENTAL
063 2.1.30 ..(KA's)

ANSWER: 050 (1.00)
a.
REFERENCE:
E-17, sheet 4, 9, 10, 13
NEW
HIGH
064K101 ..(KA's)

ANSWER: 051 (1.00)
c.
REFERENCE:
ARP-33, window 7
BANK
FUNDAMENTAL
073A401 ..(KA's)

ANSWER: 052 (1.00)
a.
REFERENCE:
SOP-18A, 7.5.d
BANK
FUNDAMENTAL
073K301 ..(KA's)

ANSWER: 053 (1.00)
c.
REFERENCE:
E-17, sheet 3, 4; M-213
BANK
FUNDAMENTAL
076K406 ..(KA's)

ANSWER: 054 (1.00)
c.
REFERENCE:
ONP-2.3, Attachment 4, page 7; M-212, sh. 1
BANK
HIGH
078K402 ..(KA's)

ANSWER: 055 (1.00)
d.
REFERENCE:
FSAR 5.8.6.2.1
BANK
FUNDAMENTAL
103K105 ..(KA's)

ANSWER: 056 (1.00)
b.
REFERENCE:
SOP-2A, attachment 14
NEW
HIGH
001K301 ..(KA's)

ANSWER: 057 (1.00)
b.
REFERENCE:
SOP-1A, 7.3.1.d; Tech Spec Bases 3.3.7
BANK
FUNDAMENTAL
002K402 ..(KA's)

ANSWER: 058 (1.00)
b.
REFERENCE:
DBD-2.11, 3.2.3.1 and 3.3.1.4; M-201, sheet 2
NEW
HIGH
016K501 ..(KA's)

ANSWER: 059 (1.00)
a.
REFERENCE:
ARP-8, window 9; SOP-27, attachment 2, 3.5
NEW
FUNDAMENTAL
033A101 ..(KA's)

ANSWER: 060 (1.00)
a.
REFERENCE:
EOP-1.0, step 3; EOP-1.0 basis, step 3
NEW
HIGH
035A202 ..(KA's)

ANSWER: 061 (1.00)
d.
REFERENCE:
ONP-13, 4.2 NOTE; DBD-1.09, 3.2.2.2
BANK
HIGH
041K603 ..(KA's)

ANSWER: 062 (1.00)
c.
REFERENCE:
ARP-1, window 13
BANK
FUNDAMENTAL
045A305 ..(KA's)

ANSWER: 063 (1.00)
b.
REFERENCE:
ONP-23.2, attachment 1
BANK
HIGH
055K106 ..(KA's)

ANSWER: 064 (1.00)
d.
REFERENCE:
SOP-18A, 7.5.u
MODIFIED
FUNDAMENTAL
071 2.1.30 ..(KA's)

ANSWER: 065 (1.00)
d.
REFERENCE:
ARP-7 window 48
BANK
FUNDAMENTAL
086A402 ..(KA's)

ANSWER: 066 (1.00)
c.
REFERENCE:
SOP-12, attachment 16 (PROVIDE); QO-21, step 5.4.4
BANK
HIGH
2.1.25 ..(KA's)

ANSWER: 067 (1.00)
a.
REFERENCE:
EN-OP-111
NEW
HIGH
2.1.39 ..(KA's)

ANSWER: 068 (1.00)
a.
REFERENCE:
Tech Spec section 1.1
BANK
FUNDAMENTAL
2.1.42 ..(KA's)

ANSWER: 069 (1.00)
c.
REFERENCE:
EN-OP-102, attachment 9.2, section 7.2
NEW
FUNDAMENTAL
2.2.13 ..(KA's)

ANSWER: 070 (1.00)
b.
REFERENCE:
TS 3.7.5
BANK
FUNDAMENTAL
2.2.40 ..(KA's)

ANSWER: 071 (1.00)
b.
REFERENCE:
SOP-38, 4.0.d; SOP-5, 4.1.9
NEW
FUNDAMENTAL
2.3.5 ..(KA's)

ANSWER: 072 (1.00)
c.
REFERENCE:
SOP-18A, Step 7.5.f
BANK
FUNDAMENTAL
2.3.13 ..(KA's)

ANSWER: 073 (1.00)
d.
REFERENCE:
EOP-7.0, step 8
BANK
FUNDAMENTAL
2.4.20 ..(KA's)

ANSWER: 074 (1.00)
b.
REFERENCE:
FPIP-3, section 5.2; FPIP-4 attachment 8, 9.6.7.3
BANK
FUNDAMENTAL
2.4.25 ..(KA's)

ANSWER: 075 (1.00)
c.
REFERENCE:
EN-OP-115, 5.9
NEW
FUNDAMENTAL
2.4.31 ..(KA's)

ANSWER: 076 (1.00)
c.
REFERENCE:
ONP-17, attachment 4
NEW
HIGH
000025 2.4.11 ..(KA's)

ANSWER: 077 (1.00)
c.
REFERENCE:
EI-1, attachment 1; Drawing M1Q-114
NEW
HIGH
000029A207 ..(KA's)

ANSWER: 078 (1.00)
a.
REFERENCE:
EOP-7.0, step 19
NEW
FUNDAMENTAL
000054 2.4.6 ..(KA's)

ANSWER: 079 (1.00)
c.
REFERENCE:
ONP-25.1, attachment 2; ONP-25.2, step 13; EOP-1.0 attachment 1
NEW
HIGH
000055A204 ..(KA's)

ANSWER: 080 (1.00)
a.
REFERENCE:
EOP-9.0, step 13
NEW
HIGH
000056 2.4.21 ..(KA's)

ANSWER: 081 (1.00)
a.
REFERENCE:
M-208, sheet 1B; Tech Spec 3.6.6 Basis; Tech Spec 3.7.8 basis
NEW
HIGH
000062A203 ..(KA's)

ANSWER: 082 (1.00)
b.
REFERENCE:
ARP-21, window D1; Tech Spec 3.3.1 basis, page 3.3.1-16
NEW
HIGH
000001A205 ..(KA's)

ANSWER: 083 (1.00)
d.
REFERENCE:
LCO 3.0.3; LCO 3.5.1.d; TS 3.5.1 basis page 7
NEW
HIGH
000024 2.2.38 ..(KA's)

ANSWER: 084 (1.00)
a.
REFERENCE:
TS 3.4.13 basis page 2
NEW
FUNDAMENTAL
000037A210 ..(KA's)

ANSWER: 085 (1.00)
d.
REFERENCE:
EI-1, attachment 1; 10CFR50.72(a)(3)
MODIFIED
HIGH
000068 2.4.30 ..(KA's)

ANSWER: 086 (1.00)
b.
REFERENCE:
EOP Supplement 42 step 2.0. 1.k; EOP Supplement 42 basis
NEW
HIGH
026A204 ..(KA's)

ANSWER: 087 (1.00)
c.
REFERENCE:
Tech Spec 3.8.2 basis, page 1
NEW
HIGH
062 2.2.44 ..(KA's)

ANSWER: 088 (1.00)
c.
REFERENCE:
SOP-22, Attachment 3 (PROVIDE); LCO 3.8.3.G; Tech Spec 3.8.3
basis
NEW
HIGH
064A202 ..(KA's)

ANSWER: 089 (1.00)
c.
REFERENCE:
ARP-8, window 70; LCO 3.3.10; Tech Spec Basis 3.7.13
NEW
FUNDAMENTAL
073 2.2.39 ..(KA's)

ANSWER: 090 (1.00)
a.
REFERENCE:
ONP-7.1, step 4.1.b
BANK
HIGH
078A201 ..(KA's)

ANSWER: 091 (1.00)
d.
REFERENCE:
ARP-5, window 54
NEW
HIGH
001A208 ..(KA's)

ANSWER: 092 (1.00)
a.
REFERENCE:
EOP-8.0, attachment 1, safety function status checks; EOP
introduction document
BANK
HIGH
002A203 ..(KA's)

ANSWER: 093 (1.00)
b.
REFERENCE:
Tech Spec Basis 3.3.1.F.1
NEW
FUNDAMENTAL
015 2.1.32 ..(KA's)

ANSWER: 094 (1.00)
b.
REFERENCE:
EI-2.1, 6.6
NEW
FUNDAMENTAL
2.1.14 ..(KA's)

ANSWER: 095 (1.00)
a.
REFERENCE:
PL-EGAD-EP-12, page 70; LCO 3.6.3; TS Basis 3.6.3 page 7; TS 1.3, Completion Times
NEW
HIGH
2.1.29 ..(KA's)

ANSWER: 096 (1.00)
d.
REFERENCE:
10CFR50.54(x) and (y); 10CFR50.72(b)
BANK
FUNDAMENTAL
2.2.38 ..(KA's)

ANSWER: 097 (1.00)
b.
REFERENCE:
HP-2.6, 4.1.1
NEW
FUNDAMENTAL
2.3.12 ..(KA's)

ANSWER: 098 (1.00)
d.
REFERENCE:
EI-2.1, section 6.14
BANK
FUNDAMENTAL
2.3.14 ..(KA's)

ANSWER: 099 (1.00)
d.
REFERENCE:
EOP-1.0, attachment 1
NEW
FUNDAMENTAL
2.4.2 ..(KA's)

ANSWER: 100 (1.00)
b.
REFERENCE:
LCO 3.3.7
NEW
FUNDAMENTAL
2.4.3 ..(KA's)

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

MULTIPLE CHOICE

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

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