Question 1.

In the **analyzed transient** for a Feedwater Controller Failure Open to 130% flow, what is the cause of the Reactor Scram?

_____ A. APRM High Flux

_____ B. MSIV Closure

_____ C. Turbine Stop Valve Closure

_____ D. RPV Low Level Scram

Point Value: 1

Question 2.

In order to **exit** the ATWS section of the EOPs, which of the following would indicate that the reactor would remain shutdown under all conditions?

_____ A. One rod at 46 and all other control rods inserted to position 00, SLC injecting with tank level at 60 inches.

_____ B. All control rods inserted to position 02, SLC injecting with tank level at 25 inches.

_____ C. Three rods indicate position 02 while all others indicate position 00, SLC injecting with tank level at 34 inches.

_____ D. Two rods indicate position 24, SLC injecting with tank level at 14 inches.

Point Value: 1

Question 3.

Following a Scram and MSIV Isolation the following occurred:
RPV Level decreased to 103 inches
RPV pressure increased to 1145 psig and several SRVs opened and reclosed. RPV Level increased to 215 inches when the SRVs opened.
Currently Reactor Level is 182 inches and slowly lowering.
You have been directed to place RCIC in service.

Which of the following actions are required to start RCIC under these conditions?

_____ A. Open F095, RCIC Stm Inlet Bypass Valve, wait 15 seconds and open F045, RCIC Steam Inlet Valve.

_____ B. Close and re-open F059, RCIC Turbine Inlet Trip Throttle Valve, then open F045, RCIC Steam Inlet Valve.

_____ C. Depress the Level 8 reset button, open F095, RCIC Stm Inlet Bypass Valve, wait 15 seconds and open F045, RCIC Steam Inlet Valve.

_____ D. Depress the Logic A and B Isolation reset button and open F059, RCIC Turbine Inlet Trip Throttle Valve.

Point Value: 1

Question 4.

During operation at 95% power the B21-N091A RPV (Wide Range) level transmitter fails low.

Based on this malfunction which one of the following instrument functions **remains operable** in accordance with technical specifications?

_____ A. Reactor Vessel High Water Level- L8, RCIC turbine trip

_____ B. Reactor Vessel Level Low - L3, Reactor Scram

_____ C. Reactor Vessel Level Low - L2, ATWS initiation

_____ D. Reactor Vessel Level Low - L1, Core Spray / LPCI / EDG start

Point Value: 1

Question 5.

Drywell Pressure is 1.87 psig. The EECW System has automatically initiated. The CRS has entered the EOP flowcharts and is implementing sheet 2 for primary containment control. The CRS directs you to lift leads for the EECW system in accordance with 29.ESP.08 and 29.ESP.23.
Which one of the following describes the reason the CRS has given this direction?

_____ A. This action will defeat the automatic trip of the drywell fans at L1, ensuring cooling is maintained.

_____ B. Total isolation of drywell cooling water is required at this time to ensure the EECW system is not overloaded.

_____ C. If interlocks are not defeated now, drywell cooling will automatically isolate causing drywell pressure to rise.

_____ D. Drywell cooling will be restored to stabilize or lower drywell temperature and pressure.

Point Value: 1

Question 6.

The plant was operating at 70% rated power when an increase in Main Generator megawatts was observed. The positions of the control rods and recirculation flow rate have not changed.

Which ONE of the following is the cause of the INCREASE in Main Generator megawatts?

_____ A. An SRV has inadvertently lifted.

_____ B. A turbine bypass valve is partially open.

_____ C. Xenon is building toward a peak in the core.

_____ D. There has been a loss of feedwater heating.

Point Value: 1

Question 7.

The plant was operating at 55% power when the following occured:

- 3 turbine stop valves have drifted to 80% open.
- 50% of the control rods fully inserted.
- The remaining are scattered throughout the core at positions 02 to 48.
- The individual blue lights for each control rod on the full-core display are illuminated.
- The eight scram solenoid group indicating lights are extinguished.

Based on these indications, which of the following is the cause for the failure of the rods to insert?

_____ A. Failure of scram inlet and outlet valves to open.

_____ B. Failure of the back-up scram valves to de-energize.

_____ C. Failure of RPS to detect the turbine stop valve closure.

_____ D. Failure of RPS to detect high water level in the scram discharge volume.

Point Value: 1

Question 8.

The plant was operating at 50% power when RPS actuated due to a spurious turbine trip.
You are the P603 operator and have reported to the CRS that RPS has properly actuated but the **reactor is not shutdown** and **all rods are not inserted** as displayed by the rod worth minimizer.
The scram has been reset and you are waiting to rescram the rods.
RPIS is functioning as expected.
You request a process computer control rod display update(OD7-opt 2) from the STA.

Based on the present plant conditions, which one of the following describes the indications on the updated control rod drive display CRT at the P603 panel?

_____ A. All rods that have scrammed indicate blue (XX), rods still out of the core indicate their location in red numerals.

_____ B. All midposition rods indicate their location in blue numerals, others indicate red (full out) or green (full in).

_____ C. All rods indicate either red (full out) or green (full in), except those that are midposition indicate magenta (XX).

_____ D. All rods indicate magenta (XX) for unknown position, except selected rods which indicate yellow (XX).

Point Value: 1

Question 9.

The Reactor has scrammed on high drywell pressure. The conditions are as follows:

- Reactor pressure .....690 psig (steady)
- Drywell pressure .....15 psig (rising)
- Drywell temperature .....300°F (rising)
- Torus water level .....10 inches (rising)
- Condenser Hotwell .....45 inches (lowering)

Which of the following actions will slow the drywell pressure increase?

_____ A. Shutdown and isolate Reactor Water Cleanup

_____ B. Isolate RCIC discharging into the "B" Feedwater line

_____ C. Close both 6N and 6S feedwater heater outlet isolation valves.

_____ D. Shutdown and isolate EECW flow to the Drywell

Point Value: 1

Question 10.

In an emergency event in which a reactor scram signal has been initiated, the following conditions exist :

- RPV level .....65 inches, steady
- RPV Pressure.....900 psig, steady
- SLC System.....injecting to RPV
- Reactor power.....6%, lowering slowly
- Torus water temperature .....130°F, steady

As the CRNSO, at which torus water level would you notify the CRS that Emergency Depressurization is required?

_____ A. +16.5 inches

_____ B. +10 inches

_____ C. -2 inches

_____ D. -28 inches

Point Value: 1

Question 11.

The plant is shutdown for a refueling outage.
RPV temperature is 140°F.
Division 2 RHR is operating in the shutdown cooling mode.
RHR pump B is running.
The following alarms and indications are noted:

3D156 REACTOR WATER LEVEL LOW
3D79 REAC VESSEL WATER LEVEL L3 CHANNEL TRIP

RPV water level 160" and steady on narrow range level indicators.
RPV water level 135" and lowering slowly on wide range level indicators.

Based on these conditions what action is taken in accordance with plant procedures?

_____ A. Enter 20.205.01 Loss of Shutdown Cooling and restore shutdown cooling using B RHR pump.

_____ B. Enter 20.205.01 Loss of Shutdown Cooling and restore shutdown cooling using D RHR pump.

_____ C. Enter 29.100.01 sheet 1 RPV control and restore level as directed using Table 1 systems.

_____ D. Enter 29.100.01 sheet 1 RPV control and restore level per RPV flooding due to level indication discrepancies.

Point Value: 1

Question 12.

The turbine tripped while the reactor was operating at 90% power. RPS has failed to insert the rods due to a hydraulic lock in the scram discharge volume(SDV).

Which one of the following describes the plant design feature that will operate **first** to provide a reactor power reduction during this load rejection with RPS failing to scram the reactor?

_____ A. Post Scram Feedwater Logic (PSFWL) actuates to reduce power by lowering the mass flowrate through the core.

_____ B. Back up scram valves actuate to add negative reactivity by inserting control rods.

_____ C. Recirc Pump Trip (RPT) system actuates to reduce power by causing the void fraction to increase.

_____ D. Alternate Rod Insertion (ARI) actuates to vent the SDV, thereby allowing rods to insert.

Point Value: 1

Question 13.

The reactor was operating in Mode 1 when a LOCA occurred. The following conditions exist:

- RPV pressure .....60 psig
- RPV level .....20" (wide range)
- Drywell pressure .....7 psig
- Division 1 and 2 Primary Containment H2/O2 Monitors are inoperable

In accordance with the EOP override statements, what action should be taken?

_____ A. Emergency RPV depressurization is required

_____ B. Shutdown drywell fans and H2 recombiners

_____ C. Initiate torus and drywell sprays

_____ D. Vent the drywell irrespective of offsite radiation release rate

Point Value: 1

Question 14.

The plant was initially operating at 90% power, when a maintenance technician caused a short in the Relay Room resulting in a trip of both Recirc MG Sets. What condition would first cause a scram after this transient?

_____ A. 3D79 - Reac Vessel Water Level L3 Channel Trip

_____ B. 4D69 - Reactor Water Level High Turb Trip

_____ C. 3D97 - APRM Neutron Flux Upscale Trip

_____ D. 3D75 - Reac Vessel High Press Channel Trip

Point Value: 1

Question 15.

Main condenser vacuum is 1 psia and a loss of vacuum is in progress. At what condenser pressure will the Reactor Feed Pumps trip?

_____ A. 2.2 psia

_____ B. 2.7 psia

_____ C. 6.8 psia

_____ D. 12.2 psia

Point Value: 1

Question 16.

A Station Blackout had occurred 1 hour ago.
AC power has not been restored.
An operator has reported to the control room that containment integrity has been verified IAW 23.427 Primary Containment Isolation System (PCIS) verification during a station blackout.

Which one of the following describes the reasons you would expect to find adequate containment isolation associated with (PCIS) prior to any operator action being taken?

_____ A. Containment inboard isolation motor operated valves are powered from DC sources which allow isolation upon a loss of AC power.

_____ B. Containment outboard isolation motor operated valves are powered from DC sources which allow isolation upon a loss of AC power.

_____ C. The PCIS system is designed such that all inboard and outboard isolation valves automatically close upon a loss of AC power.

_____ D. Isolation valves which require AC power are powered from the Uninterruptible Power Supply (UPS) and are therfore able to close when required.

Point Value: 1

Question 17.

Select the response which describes the effect of loss of the Division 1 ESF battery bus.

_____ A. The 'A' Recirc MG Set Scoop will not lock if required.

_____ B. EDG 11 will not auto start if required by a LOCA signal.

_____ C. HPCI Turbine Speed Control is unavailable to restore reactor water level.

_____ D. The main generator output breakers will not open when the main turbine generator trips.

Point Value: 1

Question 18.

Which one of the following describes the reason for isolating EECW to the drywell when drywell temperature has exceeded 242°F in accordance with the EOPs?

_____ A. To minimize runout conditions experienced by the EECW pumps due to increased system load.

_____ B. To minimize overloading of the EECW heat exchangers due to increased heat load.

_____ C. To prevent catastrophic failure of drywell coolers due to overloading.

_____ D. To prevent a loss of EECW due to a potential line break inside the drywell.

Point Value: 1

Question 19.

The plant was operating at 100% power when an spurious reactor scram occurred. The control rods are not completely inserted.
Reactor Power is 50%.
The EOPs have been entered and the CRS has ordered terminate and prevent based on exceeding the BIIT.
Assuming that the terminate and prevent is ended at TAF, how will the containment parameters respond during this evolution?

_____ A. Drywell temperature will rise when drywell cooling fans trip.

_____ B. Drywell temperature will rise due to a cooling water isolation.

_____ C. Drywell temperature will lower due to RPV pressure and temperature lowering.

_____ D. Drywell temperature will lower due to dual speed fans shifting to fast speed.

Point Value: 1

Question 20.

Ensuring there is sufficient thermal capacity in the Torus to accommodate a blowdown is the basis for which of the following curves?

_____ A. BIIT

_____ B. HCL

_____ C. PSP

_____ D. SRVTPLL

Point Value: 1

Question 21.

The reactor was operating at 100% power when the CRS directed a Control Room evacuation per 20.000.19 "Shutdown from outside the Control Room" at 0700. A cooldown rate had been establish by another operator at the Remote Shutdown Panel at 0830. The conditions are as follows:

- At 0900, RPV Pressure.....900 psig
- At 0940, RPV Pressure.....400 psig

At 0945, you have been directed to operate systems at the **Remote Shutdown Panel**to maintain the cooldown rate within Fermi 2 administrative limits. What action should be taken?

_____ A. Close Safety Relief Valve "A"

_____ B. Close Safety Relief Valve "G"

_____ C. Increase HPCI flow

_____ D. Increase RCIC flow

Point Value: 1

Question 22.

The following Override Statement is applicable to EOP Sheet 5 Rad Release, Steps RR-2 through RR-4:
If TB HVAC is S/D or TB HVAC is islolated due to high rad, then, restart TB HVAC (23.412) defeating interlocks if necessary (29.ESP.25).

Which of the following describes what this action accomplishes?

_____ A. allows entry as a non-permit confined space

_____ B. preserves plant equipment operability

_____ C. ensures an elevated, monitored release point

_____ D. maintains the turbine building at a positive pressure

Point Value: 1

Question 23.

Which one of the following describes the operation and function of P50-F402, Station Air to Instrument Air Isolation Valve, during a loss of air event?

_____ A. Closes to isolate the safety related control air from the station air supply

_____ B. Closes to separate the two divisions of NIAS, from each other, to insure redundancy.

_____ C. Opens to crosstie the Interruptible Air Supply to allow the Station Air Compressors to supply Division 2 NIAS.

_____ D. Opens to allow the safety related Control Air Compressors to supply each division of NIAS.

Point Value: 1

Question 24.

The plant is operating at full power. A leak develops in the instrument line from B21-F510 Excess Flow Check Valve. The excess flow check valve closes and the associated instrument line depressurizes. The following transmitters fail **low** :

- B21-N080A Reactor Vessel Low Water Level - Level 3
- B21-N080B Reactor Vessel Low Water Level - Level 3
- B21-N095A Reactor Vessel Low/High Water Level - Level 3/Level 8
- B21-N095C Reactor Vessel Low/High Water Level - Level 3/Level 8

Which ONE of the following receives an actuation or isolation signal?

_____ A. Group 13 - Drywell Equipment and Floor Drains

_____ B. Main Turbine and Feedwater Pump Trip

_____ C. Group 10 - Reactor Water Cleanup

_____ D. Division 1 and 2 Control Air Compressor

Point Value: 1

Question 25.

The reactor is in Mode 2, with reactor pressure at 800 psig when the operating CRD pump trips. Before any action can be taken annunciator 3D10, CRD ACCUMULATOR TROUBLE, alarms for a withdrawn Control Rod.

What action is required in accordance with procedure 20.106.01, CRD Hydraulic System Failure?

_____ A. Immediately start the standby CRD pump.

_____ B. Immediately place the mode switch in SHUTDOWN.

_____ C. Within 20 minutes, close C1100-F034, CRD Charging Water Header Isolation Valve.

_____ D. Within 20 minutes restart at least one CRD pump or place the mode switch in SHUTDOWN.

Point Value: 1

Question 26.

The plant is in an emergency condition and the following primary containment parameters exist:

- Torus water level 0 inches
- Drywell temperature 275 ^{o} F (rising)
- Drywell pressure 4 psig (rising)

If the operating crew initiated drywell sprays under the above conditions, which of the following would be expected?

_____ A. Oxygen would be introduced into the primary containment from the reactor building.

_____ B. The non-condensible gases would quickly flow from the drywell into the torus air space.

_____ C. The torus-to-drywell vacuum breakers would not operate due to low differential pressure.

_____ D. The differential pressure limit between the torus and drywell would be exceeded and damage to the primary containment vent system would be expected.

Point Value: 1

Question 27.

The CRS is directing operations in accordance with 29.100.01 Sheet 1A "RPV Control -ATWS" and 29.100.01 Sheet 2 "Primary Containment Control". The CRS has directed you to terminate injection into RPV from **external sources** based on the following indications:

- All Rods are not inserted
- Standby liquid Control is injecting
- RPV pressure ..... 700 psig
- RPV water level ..... 100" (slowly lowering)
- Torus Water level .....13.5" (rising)
- All systems are operating as designed

What action should be taken?

_____ A. Shutdown Standy Liquid Control

_____ B. Shutdown RHR pumps

_____ C. Transfer RCIC from CST suction to torus suction

_____ D. Transfer HPCI from CST suction to torus suction

Point Value: 1

Question 28.

The Emergency Operating Procedures require emergency depressurization if torus water level cannot be maintained above -38 inches.

What is the basis for requiring emergency depressurization at this point?

_____ A. Prevent exceeding LPCI NPSH requirements.

_____ B. Prevent exceeding SRV tailpipe back pressure limits.

_____ C. Steam discharged from RCIC will not be suppressed.

_____ D. Suppression of steam discharged from the RPV cannot be assured.

Point Value: 1

Question 29.

The plant is operating at 100% power. The following alarm is observed:

16D6 REAC/AUX BLDG FIRST FLOOR HIGH RADN

H11-P816 panel indicates an alarm on:
Channel 12 - First floor RB neutron monitoring equipment room

Which one of the following plant conditions would be consistent with these indications?

_____ A. Transversing incore probes are being operated

_____ B. A steam leak has developed in the RCIC steam piping

_____ C. Spent fuel handling operations are in progress

_____ D. SRMs are being withdrawn for post maintainence testing

Point Value: 1

Question 30.

The plant is operating at 96% power when the following occurs:
1D66, Steam Leak Detection Ambient Temp High, alarms
1D70, Steam Leak Detection Diff Temp High, alarms
2D115, RWCU Diff Flow High, alarms
RWCU Groups 10 and 11 isolate
3D32, Div I/II RB Vent Exhaust Radiation Monitor Upscale, alarms
3D36, Div I/II RB Vent Exhaust Radiation Monitor Upscale/Trip, alarms
17D14, Div I/Div II SGTS AUTO start, alarms

A plant announcement is made per 20.000.02 "Abnormal release of Radioactive Materials". What is the purpose of this announcement?

_____ A. Notify personnel to stay clear of potentially radioactive areas

_____ B. To inform maintenance shops of upcoming work

_____ C. To notify personnel in the Reactor Building that RWCU has tripped

_____ D. To assemble the Fire Brigade

Point Value: 1

Question 31.

The plant was operating at 100% power when a LOCA occurred.
All rods are inserted.
Minor fuel damage has occured.
An offsite release is in progress through the SGTS.
RPV Pressure is 600 psig.
RPV level is 25" and stable.

Based on the present plant conditions which system would be used to obtain a PASS sample?

_____ A. Reactor Water Cleanup System (RWCU)

_____ B. Standby Gas Treatment System (SGTS)

_____ C. Reactor Recirculation System (RRS)

_____ D. Residual Heat Removal (RHR)

Point Value: 1

Question 32.

A fire has occured in the 4160V bus 65F. The reactor is shutdown and the fire is out. The fire brigade has been directed to stand down. You have been directed to fill out the fire alarm incident report as part of AOP 20.00.22 Plant Fires.

Which one of the following describes the type of fire you would select on the report?

_____ A. Class A

_____ B. Class B

_____ C. Class C

_____ D. Class D

Point Value: 1

Question 33.

The plant is in extended maintenance shutdown in Mode 4. Division 1 RHR is in the shutdown cooling mode with the 'A' pump running.
The following events occur:

- The E11-F008 RHR SDC outboard isolation valve fails closed.
- The North Reactor Recirc pump is restarted by the crew.

Which ONE of the following is an allowable option for reestablishing decay heat removal under these conditions in accordance with 20.205.01, Loss of Shutdown Cooling?

_____ A. Bleed Steam Via Bypass Valves when pressure reaches 50 psig. Makeup with SBFW.

_____ B. Maximizing FPCCU flow and RBCCW Flow to the FPCCU Heat Exchangers.

_____ C. Place Division 2 RHR in shutdown cooling using the 'B' or 'D' pump.

_____ D. RWCU Blowdown to the Main Condenser, makeup with a SBFW pump.

Point Value: 1

Question 34.

The plant is in Mode 5 with a core shuffle in progress. The fuel grapple fails and a fuel bundle drops into the core. A Refueling Floor High Radiation alarm and a Fuel Pool Ventilation Exhaust Rad Monitor Upscale Trip occurs.

Which of the following systems or components would be expected to trip, actuate or isolate?

_____ A. MSIVs close

_____ B. Emergency Diesel Generators start

_____ C. Primary Containment Purge/Vent valves close

_____ D. CCHVAC System shifts to PURGE mode

Point Value: 1

Question 35.

The following initial conditions exist:

Reactor Power 96% and stable.
Control Room Pressure + 0.175" H_2O and stable.
Reactor Building Pressure +0.10" H_2O and stable.
Turbine Building Pressure -.10" H_2O and stable.
Which one of the following actions is required?

_____ A. Enter 20.413.01, Control Center HVAC System Failure.

_____ B. Enter 29.100.01, Secondary Containment and Radioactive Release.

_____ C. Enter ARP 8D13, Turbine BLDG Press High

_____ D. Enter ARP 8D9, MCR Building Pressure High/Low

Point Value: 1

Question 36.

The following conditions exist:
Reactor power 95%
Drywell temperature .... 138 ◦ F
Torus level ..... +1.4"
RWCU is S/D for a surveillance.
TWMS Relief is lifting.
Which of the following would require entry into 29.100.01 Sheet 5, Secondary Containment Control and Radioactive Release Control?

_____ A. HPCI Room Dose Rate is 25 mr/hr.

_____ B. HPCI Room Water Level is 1 ft. and is rising.

_____ C. RB SE Sump Water Level is 35 inches and the sump pump is running.

_____ D. HPCI Room Temperature is 110 o F.

Point Value: 1

Question 37.

Which one of the following describes the effect of a loss of air supply to the CRD hydraulic system?

_____ A. System flow would be reduced to zero, rod movement would be prevented.

_____ B. System flow would indicate higher than normal, rod speeds would be increased

_____ C. System flow would indicate lower than normal, rod motion could occur

_____ D. System flow is not affected, rod motion could occur

Point Value: 1

Question 38.

The reactor is shutdown after a refueling outage. Preparations for startup are underway.
RPV temperature is 140°F and steady.
RPV level is 245" and steady.
Division 1 RHR is running in SDC mode.
RWCU is lined up for blowdown to the hotwell.
The running CRD pump trips due to ground fault.

Which one of the following describes the plant response if no operator action is taken?

_____ A. CRD hydraulic temperatures will rise to the point where CRD mechanism damage occurs.

_____ B. CRD hydraulic system temperature stratification will occur due to low system flows.

_____ C. RPV water level will lower, the RHR pump will trip, and the system isolates.

_____ D. RPV water level slowly rises until the L8 trip setpoint is reached.

Point Value: 1

Question 39.

Which of the following rod blocks will occur **only** when the Reactor Mode Switch is in RUN?

_____ A. IRM Downscale

_____ B. IRM Upscale

_____ C. RBM Downscale

_____ D. SRM Upscale

Point Value: 1

Question 40.

The following initial conditions exists at 09:00:00

- Reactor Power 100%
- Total core flow .....98 Mlbm/hr
- Recirc Pump "A" speed.....85%
- Recirc Pump "B" speed.....84%

The following events occur:

- 09:10:00.....Breaker 65G-G3 trips open
- 09:10:20.....Recirculation Pump "A" trips
- 09:12:00.....Loss of Heater Drains due to power reduction

At 09:20:00, with no operator action, what is the indicated demand on the RR MG Set Speed Controllers?

_____ A. Loop A - 40% , Loop B - 40%

_____ B. Loop A - 28% , Loop B - 75%

_____ C. Loop A - 28% , Loop B - 40%

_____ D. Loop A - 75% , Loop B - 28%

Point Value: 1

Question 41.

The Division 2 RHR testable check valve E11-F050B is declared inoperable for opening. If this valve will not open, which modes of RHR are unavailable?

_____ A. LPCI injection and Drywell Spray

_____ B. LPCI injection and Shutdown Cooling

_____ C. Torus Spray and Drywell Spray

_____ D. Shutdown Cooling and Torus Cooling

Point Value: 1

Question 42.

The plant was operating at 65% power.
A LOCA has occurred.
Due to severe weather a loss of offsite power occurred.
The following conditions exist:
EDGs 11 and 12 are tripped.
EDGs 13 and 14 are running loaded.

If needed to mitigate the LOCA, which piping flowpaths of RHR are available using B and D RHR pumps?

_____ A. -Both Divisions for LPCI injection mode
-Only Division 2 for Torus Cooling & Spray, or Drywell Spray

_____ B. -Only Division 2 for LPCI injection mode
-Both Divisions for Torus Cooling & Spray, or Drywell Spray

_____ C. -Both Divisions for LPCI injection mode
-Both Divisions for Torus Cooling & Spray, or Drywell Spray

_____ D. -Both Divisions LPCI injection mode
-Only Division 1 for Torus Cooling & Spray, or Drywell Spray

Point Value: 1

Question 43.

High Pressure Coolant Injection (HPCI) has automatically initiated.
Reactor water level is +25 inches on wide range indicators.
You are directed to verify all HPCI components are operating properly.
When you inspect HPCI, you notice that the HPCI barometric condenser condensate and vacuum pumps are not running.
Is the HPCI system operating properly and what are your actions if any?
Select the correct response.

_____ A. No. Inform the CRS that these pumps are not running and HPCI must be tripped immediately because it cannot operate properly without these pumps.

_____ B. No. These pumps must be started locally at the local HPCI control panel (E4100-P037) as soon as possible after an automatic initiation of HPCI.

_____ C. Yes. These pumps automatically shutdown when HPCI turbine speed reaches 2300 RPM and the turbine gear driven condensate and vacuum pumps are driven fast enough to start pumping.

_____ D. Yes. These pumps are not necessary for HPCI to function properly and they trip on Reactor Water Level 1.

Point Value: 1

Question 44.

The Core Spray System is lined up in the Normal Standby Mode when a plant transient occurs.

Drywell Pressure is 1.89 psig.
Reactor Pressure is 350 psig.
All systems are operating normally.

What is the status of the Core Spray System?

_____ A.
- Core Spray Pumps are running
- E21-F005A/B CSS Loop A/B Inboard Iso Valves are OPEN
- F006A/B CSS Loop A/B Inboard Check Valve OPEN

_____ B.
- Core Spray Pumps are running
- E21-F005A/B CSS Loop A/B Inboard Iso Valves are OPEN
- F006A/B CSS Loop A/B Inboard Check Valve CLOSED

_____ C.
- Core Spray Pumps are running
- E21-F005A/B CSS Loop A/B Inboard Iso Valves are CLOSED
- F006A/B CSS Loop A/B Inboard Check Valve OPEN

_____ D.
- Core Spray Pumps are not running
- E21-F005A/B CSS Loop A/B Inboard Iso Valves are CLOSED
- F006A/B CSS Loop A/B Inboard Check Valve CLOSED

Point Value: 1

Question 45.

Following an ATWS, SLC has been initiated to inject boron into the Reactor. SLC Pump "A" is running and its discharge pressure is 40 psig above RPV pressure.

Subsequently, a loss of 120KV power occurs, EDG 11 and 12 start and provide power to their associated buses. All systems operated normally.

What is the effect on SLC Pump operation?

_____ A. SLC Pump "A" trips, CMC must be taken to OFF-RESET then back to RUN

_____ B. SLC Pump "A" trips, MCC 72B-4C-2AR must be locally reset

_____ C. SLC Pump "A" loses power, SLC Pump "B" must be manually started

_____ D. SLC Pump "A" trips, then restarts on load sequencing

Point Value: 1

Question 46.

Which one of the following statements describes the SLC Squib Valve Continuity circuit and alarm?

_____ A. Current flow through the squib valves is monitored and an alarm is received if current flow in the bridge circuit becomes unbalanced between the firing primers.

_____ B. Current through the squib valves is monitored and alarmed if current lowers below a setpoint.

_____ C. Resistance of the squib valves is monitored and an alarm is received if resistance in the bridge circuit becomes unbalanced between the firing primers.

_____ D. Resistance of the squib valves is monitored and a alarm is received if resistance in the firing primers become too low.

Point Value: 1

Question 47.

Late in the operating cycle with all control rods withdrawn, RPS MG set B trips due to an electrical fault. A short time later the fuse (C71-F18C) supplying power to the Scram Trip System A Group 3 Scram Pilot Valve Solenoids blows.
No operator actions have been taken.

In response to these events, _____ control rods will scram into the core.

_____ A. 0

_____ B. 22

_____ C. 47

_____ D. 185

Point Value: 1

Question 48.

The plant is operating at 100% power.
A failure of the governor/pressure regulator occurs which causes the turbine control valves to slowly close without a corresponding opening of the bypass valves.
An overpressure transient results from this failure.
Which one of the following RPS functions will scram the reactor to limit cladding temperatures?

_____ A. Main Steam Isolation Valve Closure

_____ B. APRM flux - Upscale

_____ C. Low RPV water level

_____ D. Turbine Control Valve Closure

Point Value: 1

Question 49.

The reactor is operating in Mode 2 when an IRM mode switch is placed in STANDBY. In addition to a half scram occurring, the IRM will read:

_____ A. downscale on the meter and indicate an Inop trip

_____ B. downscale on the meter and indicate a Downscale trip

_____ C. current power level on the meter and indicate an Inop trip

_____ D. current power level on the meter and indicate a Downscale trip

Point Value: 1

Question 50.

Concerning SRM initiated Rod Blocks, choose the statement below which describes the SRM/IRM interface that provides a bypass for Rod Blocks during startup.

_____ A. IRM channels provide a bypass for detector retract permit on range 1.

_____ B. IRM channels provide a bypass for SRM DNSCL rod block on range 3.

_____ C. IRM channels provide a bypass for SRM UPSCL rod block on range 5.

_____ D. IRM channels provide a bypass for SRM INOP rod block on range 7.

Point Value: 1

Question 51.

The power supply for the APRMs is which one of the following?

_____ A. H11-P908A & B, 120 VAC instrument and control power.

_____ B. R3100S009A & B (UPS) Circuit 9.

_____ C. C71-P001A & B via QLVPS.

_____ D. 2PA-1 and 2PB-1 via static inverters.

Point Value: 1

Question 52.

The plant is being started up following a refueling outage. Heatup is in progress with RPV pressure about 125 psig. RPV water level as shown on the post-accident monitoring (PAM) instrumentation recorders is off-scale high. Water level indicators on H11-P603 are indicating 197 inches and stable. What is the reason for this level discrepancy.

_____ A. The (PAM) recorders receive input from core level transmitters. The top of the scale is +50 inches, therefore will read off-scale high at normal water level.

_____ B. The (PAM) recorders receive input from wide range level transmitter. Due to recirc flow and low RPV pressure they will read high until RPV pressure is about rated pressure.

_____ C. The (PAM) recorders will indicate only if RPV level reaches level 3 or RPV pressure reaches 1093 psig. They will read off-scale high unless one of these parameters occur.

_____ D. The (PAM) recorders are malfunctioning. They should indicate approximately equal to the level indicators on H11-P603 at all times.

Point Value: 1

Question 53.

A RCIC system outage was completed and RCIC was returned to service 48 hours ago. During a panel walkdown, you notice the following indications:

- E51-F012, RCIC Pump Discharge OB Iso Valve.....closed,energized
- E51-F007, RCIC Steam Supply IB Iso Valve.....open, energized
- E51-F008, RCIC Steam Supply OB Iso Valve.....open, energized

Which one of the following would describe (1) the impact on the plant and (2) what actions should be taken?

_____ A. 1) With the E51-F008 open Containment Integrity is not met
2) The E51-F008 valve should be closed and de-energized

_____ B. 1) The E51-F012 may not open upon RCIC initiation
2) The E51-F012 should be opened and de-energized

_____ C. 1) The E51-F007 is not evironmentally qualified, could damge MCC 72F-4A
2) The E51-F007 should be closed and de-energized for Tech. Specs.

_____ D. 1) No impact, all valves are in the correct standby lineup
2) No action is needed

Point Value: 1

Question 54.

A LOCA concurrent with a loss of offsite power has occured and the following conditions exist :

- RPV water level.....45 inches (slowly lowering)
- RPV pressure.....650 psig
- Drywell pressure.....1.95 psig (rising)
- EDGs 11 and 12..... failed to start
- EDGs 13 and 14.....tripped (will not restart)

Given the above conditions and assuming no ADS related operator actions are taken, identify the expected response of the ADS System.

When the RPV water level drops below RPV Level-1, the 105 second timer will :

_____ A. Start, time out, then ADS will initiate.

_____ B. NOT start and ADS will NOT initiate.

_____ C. Start and time out but ADS will not initiate.

_____ D. Start after the 7 minute timer times out, then ADS will initiate.

Point Value: 1

Question 55.

Drywell to Torus differential pressure is limited during normal operation to prevent:

_____ A. damage or failure from "water slugs" if an SRV were to lift.

_____ B. bypassing the suppression pool in the event of a steam blowdown from the drywell.

_____ C. failure of the primary containment due to high external pressure on the vent pipes.

_____ D. damage or failure from "water slugs" in the event of a steam blowdown from the drywell.

Point Value: 1

Question 56.

The plant is in Mode 3 with RHR Div 1 in Shutdown Cooling operation.
RHR pump A is running.
Annunciator 1D33, RHR System Overpressure, is received.

Which one of the following describes the system response to this condition?

_____ A. RHR system isolates and pump 'A' trips.

_____ B. Discharge flowpath isolates, pump 'A' runs on min flow.

_____ C. RHR pump mechanical seal temperatures rise rapidly. Sump leakage increases.

_____ D. RHR suction line rupture disc fails, drywell sump levels rise.

Point Value: 1

Question 57.

The plant is operating at 85% power.
RPS MG set 'A' trips deenergizing RPS/NSSSS power supplies.
Alarm 1D39 NSSSS Isolation CH A/C trip is illuminated.
Alarm 2D36 NSSSS Isolation CH B/D trip is clear.
Various other alarms related to the loss of power are in on the P603 panel.

Select the response that describes (1) the immediate effect of this loss of power and (2) the action required to be taken.

_____ A. (1) Inboard MSIVs, F022A-D close
(2) Place the mode switch in shutdown

_____ B. (1) All MSIVs close
(2) Place the mode switch in shutdown

_____ C. (1) Outboard MSIVs, F028A-D close
(2) Transfer RPS to alternate and reset the half scram

_____ D. (1) All MSIVs remain open
(2) Transfer RPS to alternate and reset the half scram

Point Value: 1

Question 58.

The following condtions exist:

- Reactor has scrammed due to a Group 1 isolation
- RPV pressure is being controlled with SRV "A" on LLS.
- SRV "A" vacuum breaker fails in the closed position

What is the impact on plant operations?

_____ A. RPV steam will bypass the torus resulting in high drywell pressure

_____ B. SRV "G" will begin controlling reactor pressure

_____ C. Torus to drywell differential pressure will not equalize

_____ D. T- quencher may fail upon subsequent SRV "A" actuation

Point Value: 1

Question 59.

The plant is operating with the following conditions:

- Reactor power 35%
- Generator output .....350 MWe
- Main Turbine in normal lineup

The CRNSO lowers the Speed/Load Demand setpoint to 250 MWe.
What effect does this have on plant operations?

_____ A. The reactor will not scram on a turbine trip signal

_____ B. Reactor pressure will increase to the scram setpoint

_____ C. Reactor power decreases due to increase feedwater temperature

_____ D. Turbine Control Valves will open, depressurizing the reactor

Point Value: 1

Question 60.

During a plant startup, reactor power is 75% and slowly rising as Reactor Recirc flow is raised. Generator load is stable. The Pressure Control In Control light is ON. The Turbine Bypass Valves are closed, and reactor pressure is unexpectedly rising.

Which Governor/Pressure Control signal is currently in control of reactor pressure?

_____ A. Wide Range Speed Governor

_____ B. Narrow Range Speed Governor

_____ C. Turbine Flow Limiter

_____ D. Reactor Flow Limiter

Point Value: 1

Question 61.

The plant was operating at 25% power when a station blackout occurs.
Which one of the following describes the operations of the reactor feed pump during this event?

_____ A. The emergency oil pump starts. The turbine coasts down to the point where the turning gear engages to prevent rotor bowing.

_____ B. The emergency oil pump starts. The turbine coasts to a stop. The turning gear will not engage. The emergency pump is manually stopped to preserve power.

_____ C. Both the standby and emergency oil pumps start. When the turbine coasts to zero rpm, the oil pumps stop to preserve power.

_____ D. All oil pumps trip. The turbine is designed for coastdown without oil pressure. The turning gear will not engage and the rotor may bow.

Point Value: 1

Question 62.

The reactor is operating at 100% power when MSIV "A" Outboard valve drifts CLOSED. The reactor remains at 100% power, with a slight increase in RPV pressure. The MSL flow meters for the three inservice steam lines are reading 4.0 Mlbm/hr (upscale).

Which one of the following describes the steady state level at which the feedwater digital control system will stablize RPV level and the mode of level control?

_____ A. 197" in three element control

_____ B. 203" in forced single element control

_____ C. 197" in forced single element control

_____ D. 191" in three element control

Point Value: 1

Question 63.

The plant is operating at 65% power.
RBHVAC is shutdown for maintenance.
Both divisions of SGTS are operable. Division 2 SGTS is running.
Drywell pressure is 19"wc.
Torus pressure is 19"wc.
The CRNSO is directed to vent the drywell through the normal 1" line flowpath IAW 23.406 Primary Containment Nitrogen Inerting and Purge System.
While venting, the CRNSO opens the 6" line vent path instead.

Which one of the following describes the effect on drywell pressure and any actions that may occur as a result of this lineup?

_____ A. Drywell pressure remains constant. An alternate flowpath must be aligned to vent the drywell or torus through the SGTS to reduce the risk of system damage during a LOCA.

_____ B. Drywell pressure lowers. As torus pressure becomes greater than drywell pressure the drywell to torus vacuum breakers will open.

_____ C. Drywell pressure rises. As drywell pressure rises above torus pressure a Group 14 isolation occurs to limit the pressure rise.

_____ D. Drywell and Torus pressure lower simultaneously. When pressure is < 0" wc the Reactor Bldg to Torus vacuum breakers open and deinert the containment.

Point Value: 1

Question 64.

The reactor was at 96% power when 65 Transformer failed. The following has occurred:

- Reactor was manually scrammed
- EDG 13 has started and loaded
- EDG14 has started and loaded
- EDG 14 Lube oil temperature control valve fails CLOSED
- 10D9 "Div 2 EDG 14 Lube Oil Temperature HIGH/LOW" has alarmed

Which one of the following describes the status of EDG 14?

_____ A. EDG 14 will continue to run providing power to Bus 65F

_____ B. EDG 14 will continue to run as long as jacket coolant temperature is normal

_____ C. EDG 14 will trip on high lube oil temp and remain shutdown

_____ D. EDG 14 will trip on high lube oil temp and restart on bus undervoltage

Point Value: 1

Question 65.

During a Reactor Heatup, on IRM Range 7, the collet fingers on a Control Rod Drive stick in the withdraw position. The control rod is being withdrawn from position 08 to 12.

Which one of the following statements describes the consequences of this event?

_____ A. The rod will drift into the core reducing power and heatup rate.

_____ B. The rod will remain at position 12, and power and heatup rate will stabilize.

_____ C. The rod will drift out of the core, and power and heatup rate will increase.

_____ D. The rod will remain at position 08 until drive header pressure has been increased sufficiently to free the collet.

Point Value: 1

Question 66.

The plant is shutting down for a mid-cycle outage.
The RWM indicates TRANSITION ZONE.
The P603 operator inserted the selected Control Rod past its Group Insert Limit.
All other Control Rods are at their correct positions.
For these conditions, which of the following indications would result?

_____ A. An Insert Error and Insert Block

_____ B. A Withdraw Error and Withdraw Block

_____ C. An Insert Error

_____ D. A Withdraw Error.

Point Value: 1

Question 67.

The reactor is operating at 100% power.
Due to a logic relay failure the G33-F001 RWCU Inboard Isolation valve receives an isolation signal and automatically closes.
Which one of the following describes the effect on the plant if this malfunction cannot be corrected for several weeks?

_____ A. Decreased RPV bottom head thermal gradients.

_____ B. Decreased hydrogen buildup in the offgas system

_____ C. Increased radiation levels in the offgas system

_____ D. Increased fouling of RPV internal heat transfer surfaces

Point Value: 1

Question 68.

The plant is in Mode 5 with fuel movements in progress. The refueling bridge is currently over the spent fuel pool when the "Full In" reed switch for rod 30-31 failed. The green "Full In" light for 30-31 is OFF.

Which of the following would describe (1) the effect on the plant and (2) what action should be taken?

_____ A. 1) 3D80 "Control Rod Drift" alarms
2) Enter 20.106.07 "Control Rod Drift"

_____ B. 1) Refuel bridge movement over the reactor pressure vessel is blocked
2) Install RPIS Probe jumper per 23.623

_____ C. 1) 3D113 "Control Rod Withdrawal Block" alarms
2) Insert rod 30-31 to position "00"

_____ D. 1) Fuel bundles may not be loaded by rod 30-31 in accordance with Tech Specs
2) Insert rod 30-31 to meet Tech Spec action

Point Value: 1

Question 69.

The reactor is operating at 32% power. You are the P603 operator.
You have selected rod 02-19 (edge rod) by depressing the associated button on the rod select matrix.
Which of the following describes which controls and indications are available to you when this rod is selected?

_____ A. **Four rod display** - position indication
RWM - position indication bypassed
RBM - LPRM indications bypassed

_____ B. **Four rod display** - position indication
RWM - position indication
RBM - LPRM indications

_____ C. **Four rod display** - position indication bypassed
RWM - position indication
RBM - LPRM indications

_____ D. **Four rod display** - position indication bypassed
RWM - position indication bypassed
RBM - LPRM indications bypassed

Point Value: 1

Question 70.

Following a small break LOCA the following conditions exist:
Drywell pressure 11 psig, rising
RPV Level 25 inches, lowering (wide range)
RPV Pressure 600 psig, lowering
Div 1 RHR Loop operating in the LPCI Mode
Div 2 Loop operating in the Torus Spray/Cooling Mode
E11-F010 RHR crosstie valve is closed

5 minutes later:
RPV Level -45 inches, lowering (core level)
RPV pressure 280 psig, lowering
Which one of the following describes the operation of the RHR systems?

_____ A. **Div 1 RHR:** discharge pressure constant
Div 2 RHR: discharge pressure rising

_____ B. **Div 1 RHR:** discharge pressure lowering
Div 2 RHR: discharge pressure rising

_____ C. **Div 1 RHR:** discharge pressure lowering
Div 2 RHR: discharge pressure constant

_____ D. **Div 1 RHR:** discharge pressure constant
Div 2 RHR: discharge pressure lowering

Point Value: 1

Question 71.

The plant was operating at 65% power when a LOCA occurred.
The following conditions exist:
Drywell pressure 22 psig and rising.
RPV level 0 inches and lowering
RPV pressure 450 psig and lowering

"A" RHR pump is placed in the torus cooling/spray mode with cooling maximized.
Div 2 RHR is placed is placed in drywell spray at 20,000 gpm.

A loss of offsite power occurs and EDGs 11,12,14 start and load.
EDG 13 does not start.

Assuming no operator actions are taken from this point, select the answer that describes how
much RHR flow is available to the reactor as RPV pressure and level continue to lower.

_____ A. 10000 gpm

_____ B. 20000 gpm

_____ C. 30000 gpm

_____ D. 40000 gpm

Point Value: 1

Question 72.

During a LOCA drywell pressure has risen to 12 psig.
The 'B' and 'D' RHR Pumps are injecting in the LPCI Mode.
The CRS directs the CRNSO to place Division 1 RHR in torus cooling and spray mode in preparation for spraying the drywell.
The CRNSO takes the following actions in order to line up the RHR system as directed.
1. Unlocks E1150-F028A, Div 1 RHR Torus Iso Vlv
2. Depresses the OPEN pushbutton for E1150-F028A.
3. Depresses the OPEN pushbutton for E1150-F024A, Div 1 RHR Torus Clg Iso Vlv
4. Depresses the OPEN pushbutton for E1150-F027A, Div 1 RHR Torus Spray Iso Vlv

Which one of the following will occur based on the plant conditions and the actions taken by CRNSO?

_____ A. The valves will NOT open due to LPCI initiation signal still present.

_____ B. The valves open but will immediately close due to a LPCI Initiation interlock signal.

_____ C. E1150-F028 and F027A will open, but E11-F024A will NOT open.

_____ D. All three valves can be opened after the LPCI Loop Selection Circuitry has timed out.

Point Value: 1

Question 73.

The capacity of the Safety Relief Valves is sufficient to prevent exceeding a pressure within the Reactor Pressure Vessel of:

_____ A. 1135 psig

_____ B. 1245 psig

_____ C. 1375 psig

_____ D. 1450 psig

Point Value: 1

Question 74.

The reactor is operating at 90% reactor power with the East Offgas train in service. An electrical fault in MCC 72R-3B-4D causes N2000-F611 "East Offgas Condenser Condensate Inlet Valve" to fail CLOSED.

With no operator action, what is the effect on the plant?

_____ A. Offgas flow increases due to uncondensed steam, delay pipe pressure will rise

_____ B. West OG condenser condensate inlet and outlet valves will auto OPEN

_____ C. Heater Feed Pumps will trip on low suction, resulting in a Level 3 scram

_____ D. H_2 recombiner temperatures lower, causing hydrogen concentration to increase

Point Value: 1

Question 75.

A fault occurs in the secondary windings of Transformer SST-64 while being supplied from Bus 11, which of the following describes the resulting breaker configuration?

_____ A. Bus 11 Position A OPEN, Bus 11 Position C OPEN

_____ B. Bus 11 Position D OPEN, Bus 1-2B Position A6 OPEN

_____ C. Bus 11 Position B OPEN, Bus 1-2B Position A7 OPEN

_____ D. Bus 11 Position A OPEN, Bus 101 Position GB open

Point Value: 1

Question 76.

Which of the following Technical Specification related loads are served by UPS?

_____ A. ERIS, ADS logic.

_____ B. RPIS, RWM

_____ C. RCIC Relay Cabinet, Turbine Governor Control.

_____ D. Motor Bearing and Winding Temperature System, Feedwater Control.

Point Value: 1

Question 77.

To limit the discharge on BOP Batteries, AOP 20.300.Offsite, directs that emergency pumps be shutdown when no longer needed **if:**

_____ A. Power cannot be restored within 30 minutes.

_____ B. CTG-11 Unit 1 fails to start.

_____ C. The reactor fails to scram.

_____ D. The BOP Batteries have been depleted.

Point Value: 1

Question 78.

The plant is operating at rated power when annunciator 3D35 DIV I/II FP VENT EXH RADN MONITOR UPSCALE TRIP is received. It is determined that radiation monitors have the following readings:
D11-K609A, B, and C are all indicating 7 mr/hr and slowly increasing.
D11-K609D indicates a steady 3 mr/hr and has not tripped.

Based on this rad monitoring status, which of the following automatic actions will be observed?

_____ A. Div. 1 RBHVAC isolation; Div.1 SGTS auto starts; Div. 1 CCHVAC shifts to Emergency Recirc Mode.

_____ B. Div. 2 RBHVAC isolation; Div.2 SGTS auto starts; Both divisions of CCHVAC shift to Emergency Recirc Mode.

_____ C. Div. 1 and 2 RBHVAC isolations; Div.1 SGTS auto starts; Div. 1 CCHVAC shifts to Emergency Recirc Mode.

_____ D. Div. 1 and 2 RBHVAC isolations; Div.1and 2 SGTS auto start; Both divisions of CCHVAC shift to Emergency Recirc Mode.

Point Value: 1

Question 79.

In accordance with MOP10, "Fire Brigade", which one of the following individuals could be assigned to the fire brigade with the plant operating in mode one?
Assume each individual has met the physical and training requirements.

_____ A. Radwaste Operator -assigned as shift communicator

_____ B. Outside Rounds Operator - assigned as safe shutdown NO

_____ C. Senior Reactor Operator - assigned as the shift manager

_____ D. Reactor Operator - assigned as the Patrol NSO

Point Value: 1

Question 80.

Emergency Operating Procedure 29.100.01 Sheet 5, Secondary Containment and Rad Release, Step SC-4 requires that:

"WHEN a primary system is discharging into secondary containment", action is to be taken.

Which of the following components would be isolated for the purposes of this step?

_____ A. Main steam drain lines

_____ B. Core spray suction line from torus

_____ C. Standby gas treatment vent piping to drywell

_____ D. RBCCW supply to drywell atmospheric coolers

Point Value: 1

Question 81.

When in Recirculation mode, how is the positive differential pressure in the Control Center Envelope maintained?

_____ A. Modulating vanes on the CCHVAC Exhaust fans.

_____ B. Modulating the Emergency Makeup and Recirculation dampers.

_____ C. Modulating the Emergency Exhaust and Inlet Pressure control dampers.

_____ D. Modulating the Emergency Makeup and Inlet Pressure control dampers.

Point Value: 1

Question 82.

The plant is operating at 100% power. The Center Station Air Compressor is running, and the East Station Air Compressor is in AUTO. How would the Station Air System respond if all TBCCW flow is lost to the Station Air Compressors?

_____ A. The Center compressor will continue to run until it trips on high temperature, then the East compressor will auto start and run until it trips on high temperature.

_____ B. The Center compressor will continue to run until it trips on high temperature, and the East compressor will not start due to low TBCCW flow.

_____ C. The Center compressor will trip on low TBCCW flow, then the East compressor will auto start and run until it trips on high temperature.

_____ D. The Center compressor will trip on low TBCCW flow, and the East compressor will not start due to low TBCCW flow.

Point Value: 1

Question 83.

Reactor Power is raised from 25% to 75%.
Which of the following describes the response of the RBCCW/EECW system?

_____ A. The RBCCW differential pressure control valve opens.

_____ B. The RBCCW differential pressure control valve closes.

_____ C. The RBCCW temperature control valve opens.

_____ D. The EECW temperature control valve closes.

Point Value: 1

Question 84.

The reactor is operating at 100% power. A Reactor Engineer is performing a TIP run per 23.606 "TIP System". The reactor scrams due to a loss of feedwater. The following conditions exist:

- RPV level (wide range) .....120" (increasing)
- RPV pressure .....920 psig
- Drywell pressure .....1.5 psig (slowly rising)

How will the TIP system respond?

_____ A. The ball valve will close after the detector automatically retracts into the shield chamber.

_____ B. The shear valve will fire if the ball valve has not closed before drywell pressure reaches 1.68 psig.

_____ C. Any TIP probe inserted past its Indexing Mechanism Limit will be withdrawn into the Indexing Mechanism.

_____ D. The Indexing Mechanism and Drive Mechanism purge valves will close.

Point Value: 1

Question 85.

The CRNSO is in the process of starting up the FPCCU system. After the FPCCU pumps are started, Annunciator 2D13, FUEL POOL COOLING TROUBLE, is received in the Control Room. A NO is sent to investigate and reports the G41-R009 "FPCCU Surge Tank Level" reads 4.0 feet (steady).

What a action should be taken/directed by the CRNSO?

_____ A. Shutdown and isolate FPCCU until source of leak is determined

_____ B. OPEN G4153-F032 "FPCCU F/D Bypass Valve" to lower F/D psid

_____ C. Drain water by opening G41-F071A "FPCCU Filter Demin A Effluent Strainer Drain Isolation Valve

_____ D. Add water by opening G4100-F015 "FPCCU Surge Tank Cond Supply Valve"

Point Value: 1

Question 86.

The Reactor Building Ventilation system is running with the following lineup:
East and Center Supply fans in AUTO.
East and Center Exhaust fans in RUN.

8D30, REACTOR BLDG EXHAUST FAN NO AIR FLOW, alarms on the H11-P808 Panel.

Which of the following describes how the system will respond:

_____ A. Exhaust Fans trip immediately

_____ B. Exhaust Fans trip after 30 seconds

_____ C. Exhaust and Supply Fans trip immediately

_____ D. Supply Fans trip after 30 seconds

Point Value: 1

Question 87.

The reactor is operating in Mode 2 at 5% power. The P603 NSO is pulling control rod 26-31 from 12 to 48 to increase power . The following is observed:

- 3D76 "Control Rod Overtravel"
- 3D80 "Control Rod Drift"
- APRM 1&2 indicate 16% power
- APRM 3&4 indicate 13% power

Which of the following would describe (1) the impact on the plant and (2) what action should be taken?

_____ A. 1)A control rod is drifting out of the core causing power to increase
2) Select the drifting rod and insert to the original position per 20.106.07 "Control Rod Drift"

_____ B. 1) A control rod dropped with possible fuel failure
2) Disarm 26-31 electrically or hydraulically per 20.106.02 "Uncoupled / Dropped Control Rod"

_____ C. 1) Reactor will scrammed on APRM setdown
2) Place Mode switch in shutdown and perform actions 20.000.21 "Reactor Scram"

_____ D. 1) Rod 26-31 is uncoupled from the mechanism
2) Re-couple the rod, continue with the power increase per 20.106.02 "Uncoupled / Dropped Control Rod"

Point Value: 1

Question 88.

In accordance with MOP03, "Policies and Practices", which one of the following describes the responsibility and delegated authority of the CRNSO?

_____ A. Advise on matters involving reactor kinetics, plant thermal dynamics, and core thermal hydraulics during events.

_____ B. Authority to relieve any member of the operating shift of their authority to operate the plant if deemed necessary.

_____ C. Direct and control the activities of shift members to ensure integrated direction of activities important to safety.

_____ D. Shutdown the reactor in the event RPS septoints are exceeded and automatic shutdown does not occur.

Point Value: 1

Question 89.

In accordance with MOP07, Shift Turnover, who does Short Term Relief apply to?

_____ A. STA/SM

_____ B. SM/CRS

_____ C. CRS/CRNSO

_____ D. P603/CRNSO

Point Value: 1

Question 90.

The plant was operating at 95% power when the following indications were observed:

Generator megawatt output - 1095MWe, lowering slowly
Reactor power - 88%, lowering slowly
RPV level - 197 inches, steady
RPV pressure - 1015 psig, lowering slowly
Total core flow lowered and stabilized at 83 Mlbm/hr

A Recirc System:	**B Recirc System:**
recirc loop flow - 40000 gpm	recirc loop flow - 55000 gpm
jet pump loop flow - 61 Mlbm/hr	jet pump loop flow - 22 Mlbm/hr

Based on the given conditions what action should be taken?

_____ A. Place the mode switch in shutdown and enter 20.000.21 Reactor Scram

_____ B. Lower 'B' MG set speed to match recirc flows

_____ C. Enter 20.138.02, Jet Pump Failure

_____ D. Enter 20.138.03, Uncontrolled Recirc Flow Change

Point Value: 1

Question 91.

In accordance with communication procedures what is the distance of the restricted zone while using a radio near any control panel, and how is this area identified?

_____ A. 3 ft, orange roped area adjacent to panel

_____ B. 6 ft, red roped area adjacent to panel

_____ C. 3 ft, black and yellow bullseyes around the panel

_____ D. 6 ft, black and yellow striped region around the panel

Point Value: 1

Question 92.

According to MOP06, "Recordkeeping", which one of the following actions could be performed without a subsequent unit log entry by the CRNSO?

_____ A. Recirc Flow increase to maintain power at 100% due to fuel burnout

_____ B. Recirc Flow increase to raise power to 100% after a preplanned turbine test

_____ C. changes in mode switch position directed by a plant procedure

_____ D. Equipment start up and shutdown if above 480VAC

Point Value: 1

Question 93.

Which one of the following describes a Fermi 2 technical specification **safety limit** ?

_____ A. Water level in the spent fuel pool shall be greater than the top of active irradiated fuel.

_____ B. Reactor vessel water level shall be greater than 31" above the top of active irradiated fuel.

_____ C. With the reactor steam dome pressure < 785 psig or core flow < 10% rated core flow, core thermal power is limited to 50%

_____ D. Witht the plant operating at 100% power, MCPR shall be $\geq$ 1.07 for two recirculation loop operation or $\geq$ 1.09 for single recirculation loop operation

Point Value: 1

Question 94.

The plant is operating in mode 1.
Emergency Diesel Generator 12 is running loaded to complete the monthly surveillance required by tech specs.
Which one of the following describes the bases for declaring EDG 12 inoperable under these conditions?

_____ A. Bus 64C undervoltage relays will not operate as required by tech specs

_____ B. EDG 12 essential trips will not function when the EDG is running for testing

_____ C. Tech Specs requires all equipment to be declared inoperable while operating during surveillances.

_____ D. Although not required by tech specs, EDG 12 is declared inoperable as required by MOP05, Control of Equipment

Point Value: 1

Question 95.

Which one of the following describes the annual limits for Total Effective Dose Equivalent (TEDE) as set forth in (1) 10CFR20 and (2) Fermi 2 Administrative Guidelines for those qualified as Full Radiation Worker?

_____ A. 1. 5000mrem
2. 1000mrem

_____ B. 1. 5000mrem
2. 500mrem

_____ C. 1. 1500mrem
2. 1000mrem

_____ D. 1. 1500mrem
2. 500mrem

Point Value: 1

Question 96.

During an outage, replacement of a RWCU valve will require 3 man-hours of work without a respirator, or 5 man-hours with a respirator. External dose rate for the area is 75 mr/hr, and airborne activity is 15 DAC.

Using TEDE ALARA principles, what is the least dose a worker would receive performing this job?

_____ A. 225 mr

_____ B. 262.5 mr

_____ C. 337.5 mr

_____ D. 375 mr

Point Value: 1

Question 97.

The plant is operating at 100% power.
The following annunciators are observed.
4D50 STATOR COOLANT PUMP AUTO START
4D51 STATOR COOLANT LEAKAGE HIGH
4D62 STATOR COOLANT LOSS UNLOADING REQUIRED
What information is provided to the operator from these indications?

_____ A. The Turbine will trip in 45 seconds due to low stator coolant flow

_____ B. The Turbine will trip in 15 seconds due to low stator coolant flow

_____ C. The Turbine will trip in 45 seconds due to high stator coolant leakage rate

_____ D. The Turbine will trip in 15 seconds due to high stator coolant leakage rate

Point Value: 1

Question 98.

The reactor is operating at 100% when an electrical fault causes the following indications to occur:

- 10D61 "Div 2 4160V ESS Bus 65F Bkr Tripped"
- 10D58 "Div 2 ESS Bkr 72F Tripped"
- 10D59 "MPU Power Failure"
- 10D55 "MPU on Alternate"
- P5000-F473 "Station Air to IAS Iso Valve" CLOSES
- Div 2 SBGT tripped indication
- RBHVAC fans are running

From these indications, which action should be taken?

_____ A. Place Div 1 Standby Gas Treatment in service

_____ B. Place the Mode switch in Shutdown

_____ C. Verify MPU 1 transferred to Alternate

_____ D. Start any available Station Air Compressor

Point Value: 1

Question 99.

Which one of the following describes the bases of the ATWS EOP priority to lower level to <108 inches rather than restoring/maintaining level in the normal band as directed by Non-ATWS RPV control?

_____ A. Promotes evaporative cooling of the core by increasing steam flow.

_____ B. Raises the amount of feedwater preheating to reduce the chance of core instabilities.

_____ C. Allows the density of the water inside and outside the shroud to equalize and evenly distribute voiding within the core.

_____ D. Increases moderator temperature and steaming rate through open SRVs to promote steam cooling.

Point Value: 1

Question 100
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Select the response that correctly completes the following statement concerning notifications during an RERP event.

State and Local authorities must be contacted within (1)_____ and the NRC must be informed no later than (2)_____.

_____ A. 1. 60 minutes
2. 30 minutes

_____ B. 1. 45 minutes
2. 15 minutes

_____ C. 1. 30 minutes
2. 45 minutes

_____ D. 1. 15 minutes
2. 60 minutes

Point Value: 1

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Q#	Ans.	Pts.	Question Number	References
1.	**C**	1	EQ-OP-802-2003-000-0006-004	20.107.01 and LP-OP-802-2003-001 tech spec bases for L8 trip 3.3.2.2
2.	**A**	1	EQ-OP-802-3003-000-0008-006	ST-OP-802-3003-001 EPG Appendix B, Contingency 5
3.	**A**	1	EQ-OP-315-0143-000-0006-011	23.206 ST-OP-315-0043 RCIC text
4.	**B**	1	EQ-OP-315-0121-000-0004-005	Technical Specifications 23.601 Instrument Trip Sheets
5.	**D**	1	EQ-OP-315-0167-000-0007-006	ST-OP-315-0067-001 29.esp.08
6.	**D**	1	EQ-OP-315-0131-000-0005-006	20.107.02
7.	**D**	1	EQ-OP-802-2002-000-0002-008	ST-OP-315-0010-001
8.	**B**	1	EQ-OP-315-0184-000-0002-003	ST-OP-315-0084-001 23.615
9.	**C**	1	EQ-OP-802-3004-000-0012-007	
10.	**A**	1	EQ-OP-202-0601-000-0009-017	EOP 29.100.01 SH 6, Rev. 7 (SRVTPLL Curve)
11.	**C**	1	EQ-OP-315-0141-000-0003-011	ST-OP-315-0041-001 ST-OP-802-3002,3003 29.100.01 sht 1 RPV control
12.	**C**	1	EQ-OP-315-0104-000-0003-016	ST-OP-315-0004

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13.	**B**	1	EQ-OP-802-3004-000-0008-002	29.100.01 Sheet 4 Rev 7
14.	**B**	1	EQ-OP-802-2003-000-0003-001	UFSAR 15.3.1.3.3.2
15.	**D**	1	EQ-OP-315-0032-000-0108-003	20.125.01, Loss of Condenser Vacuum
16.	**B**	1	EQ-OP-802-2012-000-0005-008	20.300.01
17.	**B**	1	EQ-OP-315-0164-000-0001-011	23.309, 20.300.09 ST-OP-315-0064-001
18.	**D**	1	EQ-OP-802-3004-000-0110-006	ST-OP-802-3004-001
19.	**A**	1	EQ-OP-802-3003-000-0001-020	ST-OP-803-3003 ST-OP-316-0016
20.	**B**	1	EQ-OP-202-0121-000-A002-009	29.100.01 Sh 2 EPG Bases ST-OP-802-3002-001
21.	**A**	1	EQ-OP-315-0144-000-0004-002	20.000.19 ST-OP-315-0044-001
22.	**C**	1	EQ-OP-802-3005-000-0017-003	ST-OP-802-3005-001
23.	**A**	1	EQ-OP-315-0171-000-0003-003	ST-OP-315-0071-001
24.	**A**	1	EQ-OP-315-0148-000-0004-013	M5701-2, 23.601, ST-OP-315-0048-001

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Q#	Ans.	Pts.	Question Number	References
25.	**B**	1	EQ-OP-315-0109-000-0006-007	20.106.01, CRD HYDRAULIC SYSTEM FAILURE
26.	**A**	1	EQ-OP-202-0801-000-A002-020	EOP 29.100.01 SH 2, Rev 7 (Step DWT-9) EOP 29.100.01 SH 6, Rev 7 (DWSIL Curve) ST-OP-802-3002-001
27.	**C**	1	EQ-OP-802-3004-000-0013-003	ST-OP-802-3004-001
28.	**D**	1	EQ-OP-802-3004-000-0007-008	ST-OP-802-3004-001 EPG Bases
29.	**A**	1	EQ-OP-315-0151-000-0005-003	ARP 16D6 ST-OP-315-0051
30.	**A**	1	EQ-OP-802-2018-000-0001-004	ST-OP-802-2001-001
31.	**C**	1	EQ-OP-315-0176-000-0004-003	ST-OP-315-0076-001
32.	**C**	1	EQ-OP-315-0172-000-0005-003	AOP 20.000.22 Plant Fires ST-FP-503-0103 Fire Brigade Member
33.	**D**	1	EQ-OP-802-2011-000-0004-004	20.205.01, LOSS OF SHUTDOWN COOLING
34.	**C**	1	EQ-OP-802-2006-000-0001-003	ST-OP-315-0048-001
35.	**B**	1	EQ-OP-802-3005-000-0001-015	29.100.01 SH 5
36.	**B**	1	EQ-OP-802-3005-000-0005-003	29.100.01 Sheet 5 and ST-OP-802-3005-001

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37.	**C**	1	EQ-OP-315-0110-000-0003-004	ST-OP-315-0010
38.	**C**	1	EQ-OP-315-0110-000-0003-005	ST-OP-315-0010
39.	**C**	1	EQ-OP-315-0111-000-0006-003	ST-OP-315-0011-001
40.	**B**	1	EQ-OP-315-0104-000-0006-012	ST-OP-315-0004-001 23.138.01
41.	**B**	1	EQ-OP-315-0141-000-0002-007	ST-OP-315-0041
42.	**A**	1	EQ-OP-315-0141-000-0004-007	ST-OP-315-0141
43.	**D**	1	EQ-OP-315-0139-000-0003-029	ST-OP-315-0039
44.	**B**	1	EQ-OP-315-0140-000-0005-014	ST-OP-315-0040-001 23.203, 29.ESP.01
45.	**D**	1	EQ-OP-315-0114-000-0004-005	ST-OP-315-0014-001, 24.307.01
46.	**B**	1	EQ-OP-315-0114-000-0001-005	ARP 3D11
47.	**C**	1	EQ-OP-315-0127-000-0005-007	I-2155-10
48.	**B**	1	EQ-OP-315-0127-000-0009-004	ST-OP-315-0027 ITS bases

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Q#	Ans.	Pts.	Question Number	References
49.	**C**	1	EQ-OP-315-0123-000-0005-007	ST-OP-315-0123-001
50.	**B**	1	EQ-OP-315-0122-000-0004-009	Technical Specifications, I-2145-51, 52 ST-OP-315.0022.001
51.	**C**	1	EQ-OP-315-0024-000-0107-005	ST OP-315-0024-001 (Table 2, PRNM Power Supplies)
52.	**B**	1	EQ-OP-315-0121-000-0003-015	ST-OP-315-0021-001
53.	**B**	1	EQ-OP-315-0143-000-0007-006	ST-OP-315-0043-001 23.206
54.	**C**	1	EQ-OP-202-0801-000-A010-001	ST-OP-315-0042
55.	**D**	1	EQ-OP-315-0116-000-0003-020	ST-OP-315-0016-001
56.	**A**	1	EQ-OP-315-0141-000-0001-014	23.205 ST-OP-315-0041-0001 Arp 1D33
57.	**D**	1	EQ-OP-315-0105-000-0010-015	ST-OP-315-0005-001
58.	**D**	1	EQ-OP-802-3004-000-0109-006	ST-OP-315-0005-001
59.	**A**	1	EQ-OP-315-0145-000-0017-002	ST-OP-315-0045-001
60.	**D**	1	EQ-OP-315-0145-000-0006-010	ST-OP-315-0045-001

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Q#	Ans.	Pts.	Question Number	References
61.	**B**	1	EQ-OP-315-0107-000-0004-016	ST-OP-315-0007 AOP 20.300.SBO bases
62.	**D**	1	EQ-OP-315-0146-000-0003-009	ST-OP-315-0046-001
63.	**B**	1	EQ-OP-315-0120-000-0004-010	23.406
64.	**A**	1	EQ-OP-315-0165-000-0009-003	ST-OP-315-0065-01
65.	**C**	1	EQ-OP-315-0109-000-0001-003	20.106.07
66.	**C**	1	EQ-OP-315-0113-000-0004-011	ST-OP-315-0013-001
67.	**D**	1	EQ-OP-315-0108-000-0001-005	ST-OP-315-0008-001
68.	**B**	1	EQ-OP-315-0111-000-0014-003	ST-OP-315-0090-001
69.	**B**	1	EQ-OP-315-0126-000-0003-016	ST-OP-315-0024-001
70.	**B**	1	EQ-OP-315-0141-000-0001-017	ST-OP-315-0041
71.	**B**	1	EQ-OP-315-0141-000-0004-008	ST-OP-315-0041-001
72.	**A**	1	EQ-OP-315-0141-000-0001-016	23.205 ST-OP-315-0041-001

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73.	**C**	1	EQ-OP-315-0105-000-0003-006	ST-OP-315-0005-001
74.	**A**	1	EQ-OP-315-0135-000-0004-005	ST-OP-315-0035-001
75.	**B**	1	EQ-OP-315-0157-000-0011-008	ST-OP-315-0057-001
76.	**B**	1	EQ-OP-315-0162-000-0008-003	ST-OP-315-0062-001
77.	**B**	1	EQ-OP-802-2012-000-0005-006	ST-OP-802-2012-001
78.	**D**	1	EQ-OP-802-2018-000-0003-014	23.601, Rev. 25
79.	**D**	1	EQ-OP-802-4101-000-0028-003	MOP10 MOP03
80.	**A**	1	EQ-OP-802-3005-000-0011-007	ST-OP-802-3005-001
81.	**B**	1	EQ-OP-315-0173-000-0005-004	ST-OP-315-0073-001
82.	**C**	1	EQ-OP-315-0171-000-0007-010	ST-OP-315-0071-001
83.	**B**	1	EQ-OP-315-0167-000-0005-005	ST-OP-315-0067-001
84.	**A**	1	EQ-OP-315-0125-000-0004-004	ST-OP-315-0025-001

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85.	**D**	1	EQ-OP-315-0115-000-0003-006	ARP 2D13
86.	**C**	1	EQ-OP-315-0166-000-0003-012	ST-OP-315-0166, 8D30
87.	**C**	1	EQ-OP-802-2004-000-0005-007	ST-315-0024-001, UFSAR 15.4.9-1
88.	**D**	1	EQ-OP-802-4101-000-0022-004	MOP03
89.	**C**	1	EQ-OP-802-4101-000-0026-003	MOP07
90.	**C**	1	EQ-OP-315-0104-000-0002-002	ST-OP-315-0004-001
91.	**D**	1	EQ-OP-635-0001-000-0009-001	MOP03
92.	**A**	1	EQ-OP-802-4101-000-0025-008	MOP07
93.	**D**	1	EQ-OP-804-0001-000-0008-004	Technical Specifications and bases
94.	**A**	1	EQ-OP-315-0165-000-0027-002	ST-OP-315-0065
95.	**A**	1	EQ-OP-508-0001-000-A013-001	ST-GN-508
96.	**C**	1	EQ-OP-508-0001-000-A062-002	10 CFR 20 ST-GN-508

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Q#	Ans.	Pts.	Question Number	References
97.	**A**	1	EQ-OP-315-0154-000-0005-004	ST-OP-315-0054-001
98.	**B**	1	EQ-OP-315-0161-000-0008-004	20.300.72F
99.	**B**	1	EQ-OP-802-3003-000-0019-007	ST-OP-802-3003
100.	**D**	1	EQ-OP-831-0001-000-0001-001	EP-290