Question Number 1

Plant conditions are as follows:

50% power

"1B" Reactor Recirculation Pump trips, and APRM power is fluctuating between a low value of 30.0% and a high value of
45.0% every 2 seconds.

5006-3D, OPRM Enabled alarm annunciates.

WHICH ONE of the following describes what action(s) is/are required?

A: Insert a manual Reactor scram.

B: Attempt to restart the "1B" Reactor Recirculation Pump.

C: Reduce power by 5%, and then check magnitude of the APRM oscillations.

D: Reduce power with control rods and verify NOT within the CONTROLLED ENTRY REGION of the Power/Flow Map.

Question Number 2

The plant was initially operating at 92% power when an inadvertent group 1 isolation occurred.

Very little rod motion occurred on the subsequent scram.

Neither manual scram nor ARI were successful.

Both SLC pumps were started at 10:05.

What is the FIRST opportunity that a cooldown is allowed to be started?

A: As soon as the reactor becomes subcritical.

B: At time 10:45.

C: At time 11:25.

D: At time 11:35 if all rods are in.

Question Number 3

The following plant conditions exist:

- A steam leak exists in the Turbine Building
- EOP-9, Radioactivity Release Control, has been entered.
- Turbine Building Ventilation has tripped.

What is the required operational response to the Turbine Building Ventilation trip and its basis?

A: Restart ventilation to monitor the release.

B: Restart ventilation to lower the radioactive release.

C: Maintain ventilation tripped to lower the radioactive release.

D: Maintain ventilation tripped to prevent an unmonitored release.

Question Number 4

The plant is at rated power with a normal electrical lineup and the MDRFP tagged out when a plant transient results in the following:

- First: the control power is lost for the ERAT breaker to Bus 1B1.
- Next: a RAT lockout occurs.
- Now: RPV level is -55 inches and lowering.

WHICH of the following describes the expected status of the safety related electrical distribution system?

A: All three DGs running, all three safety related busses powered from the DGs.

B: All three DGs running, busses 1A1 and 1C1 are powered from the ERAT. Bus 1B1 is powered from its DG.

C: Division 2 and 3 DGs are running, busses 1A1 and 1C1 are powered from the ERAT. Bus 1B1 is powered from its DG.

D: Division 2 and 3 DGs are running, busses 1B1 and 1C1 are powered from their DGs. Bus 1A1 is powered from the ERAT.

Question Number 5

The following plant conditions exist:

- The reactor scrammed due to closure of the MSIVs.

- Suppression Pool temperature is 145F

- Suppression Pool level is 18.0 feet

Which one of following identifies the highest allowed reactor pressure without exceeding the Heat Capacity Limit (Figure P)?

A: 650 psig

B: 750 psig

C: 850 psig

D: 950 psig

Question Number 6

Plant conditions are as follows:

The Reactor is at 76% Rated Thermal Power.

- Drywell pressure is currently 0.9 psig and trending up at 0.05 psig/min.
- Drywell Temperature is 115°F and trending up at 0.5°F/min.

One minute after Drywell pressure started to rise, all Fission Product Monitor channels started rising.

Which ONE of the following problems would give this indication?

A: Small Feedwater leak in the Drywell.

B: Instrument Air leakage into the Drywell.

C: Small steam leak in the Drywell.

D: Failure of Drywell Cooling.

Question Number 7

The plant conditions are as follows:

- 93% power
- Component Cooling Water (CCW) System pump suction develops a leak which exceeds the capacity of the CCW expansion tank makeup.
- The operators determine CCW system and plant shutdown is required due to loss of cooling to vital reactor auxiliary equipment.

When CCW is lost the operators will…

A: Stop the plant Service Air Compressors within five (5) minutes.

B: Stop the Reactor Recirculation (RR) pumps within one (1) minute.

C: Verify loads automatically transfer to the Shutdown Service Water (SX) System.

D: Stop the Fuel Pool Cooling and Cleanup (FC) System pumps within five (5) minutes.

Question Number 8

A plant transient has occurred and the following conditions exist:

Drywell pressure is 2.3 psig slowly rising
Reactor water level is -150" slowly lowering

The 138 KV line is lost.
Division 1A DG has an over crank condition.

What are the power supplies available to the RHR pumps:

	A RHR	B&C RHR
A:	RAT	RAT & Diesel Generator
B:	RAT	RAT & ERAT
C:	ERAT & Diesel Generator	ERAT & Diesel Generator
D:	RAT & Diesel Generator	RAT

Question Number 9

The plant is in Mode 4 with RHR "A" in shutdown cooling, reactor water level momentarily drops to +5".

WHICH of the following describes the expected RHR response?

Both SDC suction isolation valves(1E12-F008/F009)…

A: remain open; the "A" RHR pump continues to run.

B: close and "A" RHR pump trips on low suction pressure.

C: close and "A" RHR pump trips on low level.

D: close and "A" RHR pump trips when either valve leaves its full open seat.

Question Number 10

The plant is in a Refueling Outage moving irradiated fuel in the Spent Fuel Pool. The fuel handling operator moving the Fuel Handling Platform has a spent fuel bundle on the grapple. The bundle is NOT raised high enough to clear the fuel rack when the trolley starts moving. The spent fuel bundle becomes slightly bent causing a large bubble to rise from the bundle. The Fuel Handling Platform Area Radiation Monitor alarms.

Which one of the following describes actions to be taken and their reason?

A: Shift Containment Continuous Purge to the filtered mode to minimize the radioactive release to the environment.

B: Place bundle in safe condition and evacuate the Fuel Building to prevent overexposure to fission products released into the Fuel Building atmosphere.

C: Move the fuel bundle to the Inclined Fuel Transfer System in preparation to move it back to Containment to limit release of radioactive material into the Fuel Building.

D: Isolate the Containment to prevent any airborne radiation from leaving the Containment and have the Refueling Floor Radiation Protection Technician sample for airborne radioactivity .

Question Number 11

The plant is at rated power.

Refer to the annunciator and PPC displays shown on the attached TWO (2) figures.

Which of the following actions must be performed?

A: Trip both Reactor Recirc Pumps.

B: Place the Mode Switch in Shutdown.

C: Restart both Reactor Recirc Hydraulic Power Units.

D: Lockout both Reactor Recirc Hydraulic Power Units.

Question Number 12

A Group 1 Isolation occurred while at full power. The resultant transient lifted several Safety-Relief Valves. After these valves close, at what pressure will the next Safety-Relief Valve(s) open and WHY?

A: 1103 psig; to minimize cycling of the other SRVs.

B: 1033 psig; to prevent reaching the high pressure scram setpoint.

C: 1033 psig; to mitigate the effects of pressure loads on the containment.

D: 1103 psig; to mitigate the effects of pressure loads on the containment.

Question Number 13

Which one of the following describes why an emergency depressurization is required per EOP-6, "Primary Containment Control," when suppression pool temperature CANNOT be maintained below the Heat Capacity Temperature Limit (Figure P)?

Ensures initiation of RPV depressurization will NOT result in exceeding …

A: Pressure Suppression Pressure.

B: Boron Injection Initiation Temperature.

C: Primary Containment Temperature Limit.

D: Net Positive Suction Head limits for low pressure ECCS.

Question Number 14

Given the following conditions:

· A LOCA has occurred
· The reactor has been scrammed
· Reactor Pressure is 200 psig
· Drywell Temperature is 310°F
· Containment Temperature is 280°F
· Narrow Range Water Level indication is 13 inches
· Wide Range Water Level indication is –36 inches
· Upset Range Water Level indication is 28 inches

Based on the current plant conditions, which of the following would be valid/invalid RPV water level indications?

	Narrow Range	Wide Range	Upset Range
A:	valid	valid	valid
B:	valid	valid	invalid
C:	invalid	valid	valid
D:	valid	invalid	invalid

Question Number 15

Which one of the following Drywell Temperatures is the highest that would NOT require a Tech Spec entry?

A: 135°F

B: 145°F

C: 155°F

D: 165°F

Question Number 16

EOP-6 requires a Blowdown if Suppression Pool Level CANNOT be held above 15 ft 1 inch irrespective of Suppression Pool Temperature.

Why?

A: The ECCS pumps will lose suction.

B: A LOCA will challenge primary containment integrity.

C: A blowdown will challenge drywell integrity.

D: The decrease in radioactive gas scrubbing will result in elevated radiation releases.

Question Number 17

· A seismic event has occurred resulting in a DBA LOCA.

· The plant has scrammed
· The ‘A’ Recirculation Pump fails to trip.

Reactor level quickly lowers and indicates:

- Shutdown Range 1 inch
- Upset Range 0 inches
- Narrow Range 3 inches
- Wide Range -160"
- Fuel Zone Range -112"

What is the status of determining actual vessel level?

A: Can ONLY be determined using Fuel Zone since it is qualified to function under Post-LOCA conditions.

B: Can be determined. ALL instruments are AVAILABLE with Fuel Zone being the only one on scale.

C: Can be determined. ONLY the Shutdown, Upset, and Narrow Range should be used.

D: Can NOT be determined with these conditions.

Question Number 18

The plant was operating at 92% power when all Station AC busses de-energize.

The following actions occur:

Reactor scrams.
Main Turbine Trips.
All attempts to start the Emergency Diesel Generators (EDGs) fail.
Load dispatcher reports that the offsite power outage is expected to last eight (8) hours.
Reactor water level control is established with RCIC and Reactor pressure is controlled with SRVs.
One (1) hour after the loss of AC occurs, DC load shedding is initiated and completed 45 minutes later.

What is the impact of the above conditions?

A: RCIC will become unavailable due to a loss of the Gland Seal Air Compressor.

B: RCIC system will become unavailable due to a high Lube Oil temperature before AC power is restored.

C: RCIC and SRVs will become unavailable due to a loss of DC power before battery chargers are restored.

D: Main Control Room area temperatures will exceed the habitability limit of 120°F due to loss of ventilation.

Question Number 19

How long is the Division 1 battery designed to supply the required Design Basis Accident (DBA) loads without allowing the final discharge voltage to decrease below the minimum design cell voltage?

The Division 1 battery will supply the DBA loads (with coincident AC power loss) for a MINIMUM of _____.

A: 2 hours

B: 4 hours

C: 8 hours

D: 12 hours

Question Number 20

A grid disturbance has resulted in the loss of a large industrial manufacturing facility.

The plant is operating at rated power with a normal plant lineup.

The Operator takes actions to return the Switchyard voltage to the specified band.

Why are the circulating water pumps drawing more current now than when the large manufacturing facility was on line?

A: The circulating water pump motor excitation went up.

B: The circulating water pump motor excitation went down.

C: The Generator VAR Loading lowers.

D: The Generator VAR Loading rises.

Question Number 21

Plant conditions are as follows:

- Reactor power is 24%.
- Reactor Recirculation pumps are in slow speed.
- The MDRFP is Tagged Out.
- "A" TDRFP is in service.
- Condenser vacuum is slowly degrading.

As condenser vacuum degrades, which ONE of the following will occur FIRST?

A: Turbine Bypass Valve closure.

B: Reactor scram from MSIV closure.

C: Reactor scram from Main Turbine trip.

D: Reactor Recirculation System Runback signal.

Question Number 22

Following a reactor scram from 40% power, operators are automatically controlling reactor pressure with the turbine bypass valves.

Per CPS 4100.01, Reactor Scram, what is the target value operators lower Reactor pressure to in order to minimize the Feedwater-to-RPV Differential Temperature?

A: 1000 psig

B: 800 psig

C: 600 psig

D: 400 psig

Question Number 23

The plant was initially operating at 92% power when a Main Control Room evacuation was required. The reactor was shutdown at 10:00 and the Remote Shutdown Panel (RSP) was manned. At 10:30 the following plant conditions exist:

- RCIC is in service with suction from the RCIC Storage Tank and discharge to the RCIC Storage Tank
- RCIC flow is 550 gpm
- Reactor Water level is 35 inches and steady
- RHR A is in Suppression Pool Cooling
- Suppression pool temperature is 100ºF
- Suppression pool level is 19.1ft
- RCIC storage tank level is 326"
- Reactor pressure is 550 psig and lowering

What is required?

A: Reduce RCIC flow.

B: Increase RCIC flow.

C: Maintain RCIC flow at 550 gpm.

D: Shift RCIC suction to the suppression pool.

Question Number 24

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

-All Control Rods are fully inserted.
-Reactor Pressure is 200 psig.
-Reactor Water Level is -145 inches on Wide Range and slowly rising.
-The Reserve Auxiliary Transformer has Locked out.
-The only ECCS pumps that will run are LPCI A and B.
-LPCI A is injecting at maximum.
-LPCI B is in Suppression Pool Cooling.
-Containment Pressure is 3.0 psig.
-Containment Temperature is 180°F and rising.

In order to maintain containment integrity under these conditions the mitigating strategy is to…

A: Initiate ONE loop of Containment Spray only.

B: Initiate BOTH loops of Containment Spray.

C: Vent the containment.

D: Lineup Shutdown Service Water to spray the Containment.

Question Number 25

An ATWS has occurred. CPS procedure 4411.08, ALTERNATE CONTROL ROD INSERTION is being used to perform
manual control rod insertion.

Why must the Rod Pattern Controller (RPC) be defeated and how is this accomplished?

A: ATWS rod positions may not match rod pattern in RCIS. The Turbine First Stage Pressure trip setpoint is set at minimum.

B: ATWS rod positions may not match rod pattern in RCIS. The Turbine First Stage Pressure trip setpoint is set at maximum.

C: Position indication to Rod Pattern Controller may be lost due to scram. The Turbine First Stage Pressure trip setpoint
is set at minimum.

D: Position indication to Rod Pattern Controller may be lost due to scram. The Turbine First Stage Pressure trip setpoint
is set at maximum.

Question Number 26

The plant is in Mode 5.

Preparations are in progress to remove the Steam Dryer.

A loss of Instrument Air occurs.

Which of the following would be the expected result?

A: The Polar Crane Main Hook upward movement is prevented.

B: The Dryer Pool will leak into the Vessel Pool through the Gate seals.

C: The Dryer and Vessel Pool levels will remain the same.

D: The Fuel Pool Cooling and Cleanup Pumps will trip.

Question Number 27

"B" Loop of RHR is in the Shutdown Cooling (SDC) mode.

The following conditions exist:

- RPV pressure is 65 psig.
- 4.16 KV Bus 1B1 trips and locks out.
- RPV pressure rises to 115 psig.
- No operator actions have been taken.

(1) Select the statement below that describes the expected response of 1E12-F009, Inboard Shutdown Cooling Suction Isolation valve?

2) What actions are required?

A: (1) 1E12-F009 will isolate.
(2) Trip the B RHR pump.

B: (1) 1E12-F009 will isolate.
(2) Start A RHR pump.

C: (1) 1E12-F009 will NOT isolate.
(2) Verify reactor coolant circulation by an alternate method.

D: (1) 1E12-F009 will NOT isolate.
(2) Dispatch an operator to isolate SDC.

Question Number 28

The plant is operating at 25% power.

The plant is scrammed and the B Reactor Recirc pump is shutdown and isolated due to a seal leak.

What is the SHORT TERM effect of isolating CRD from the B Recirc pump?

A: Drywell floor drain flow will drop.

B: B RR pump seal temperatures will drop.

C: Drywell airborne activity will rise.

D: The seal upper wear ring will drop.

Question Number 29

The plant is operating at rated conditions.
The following plant conditions exist:

10:00 Fuel building exhaust radiation levels are 6 mr/hr.
10:15 Fuel building exhaust radiation levels are 8 mr/hr and rising at a constant rate.

What would be the operational implications if the radiation levels were allowed to continue to rise without operator action
at 12:00?

A: Primary Containment integrity would be lost.

B: Secondary Containment integrity would be lost.

C: Fuel Building area temperatures would rise.

D: Ground level radiation release would approach release limits.

Question Number 30

Which of the following describes CRD System response and the potential consequence of a Reactor SCRAM occurring with the Local Flow Control Valve Controller in MANUAL and the Main Control Room Flow Controller in AUTO?

A: The Flow Control Valve will close in response to increased charging header flow, resulting in insufficient cooling water flow.

B: The Flow Control Valve will open in response to increased cooling header flow, resulting in potential CRD pump runout.

C: The Flow Control Valve will NOT close in response to increased charging header flow, resulting in insufficient cooling water flow.

D: The Flow Control Valve will NOT close in response to increased charging header flow, resulting in potential CRD pump runout.

Question Number 31

AB MCC 1A3 is de-energized, which ONE of the following valves is affected?

A: LPCS INJECTION VALVE, 1E21-F005.

B: RCIC INJECTION VALVE, 1E51-F013.

C: HPCS INJECTION VALVE, 1E22-F004.

D: RHR "C" MINIMUM FLOW VALVE, 1E12-F064C.

Question Number 32

The reactor has just scrammed from rated conditions.

A negative reactor period is observed.

Normal rod position indication from 1H13-P680 is unavailable.

RPS can NOT be reset.

RACC Panels 1H13-P651 and 1H13-P652 “all rods full in” LED is NOT lit.

For these plant conditions shutdown criteria_____.

A: is determined by use of either RACC panel by stepping thru the ID generator.

B: is determined by depressing DATA MODE pushbutton to select alternative display information.

C: is determined by using the process computer (OD-7 option 2 or 4).

D: is NOT able to be determined.

Question Number 33

The plant is at rated power.

Number three (3) jet pump flow indication fails down scale.

Which ONE of the following indications would validate the down scale failure of number three (3) jet pump flow?

A: "A" loop driving flow lowers by 5 percent
"B" loop driving flow raises by 5 percent
Core flow remain unchanged.

B: "A" loop driving flow lowers by 10 percent
"B" loop driving flow raises by 10 percent
Core flow remain unchanged.

C: "A" loop driving flow remain unchanged
"B" loop driving flow remain unchanged
Core flow lowers 25 percent.

D: "A" loop driving flow remain unchanged
"B" loop driving flow remain unchanged
Core flow lowers 5 percent.

Question Number 34

Given the following conditions:

- RHR A is in suppression pool cooling.

- The equalizing valve for an RHR A flow transmitter vibrates fully open.

Actual total flow to the suppression pool will _(1)_ and total cooling to the suppression pool will _(2)_ .

A: (1) remain the same
(2) lower

B: (1) lower
(2) remain the same

C: (1) lower
(2) lower

D: (1) remain the same
(2) rise

Question Number 35

The plant is operating at rated power.

Primary Containment pressure is -0.1 psig.

The Primary Containment pressure is being controlled by modulating the . . .

A: Containment Building Ventilation exhaust flow from Containment.

B: Containment Building Ventilation supply air flow into Containment.

C: Continuous Containment Purge exhaust flow from Containment.

D: Continuous Containment Purge supply air flow into Containment.

Question Number 36

The plant is at rated power when 6.9 KV bus 1A trips.

Which of the following would be directly affected as a result of the bus trip?

A: Motor Driven Reactor Feed Pump.

B: The #1 Service Air Compressor.

C: The 1A Reactor Recirc Pump.

D: The "A" Drywell Chiller.

Question Number 37

The extraction steam feed to the Steam Seal Evaporator Extraction Steam Non-return Check Valves, 1GS001 and 1GS002, are considered critical and are exercised daily. All other Extraction Steam Non-return Check Valves are exercised weekly.

Why?

A: The Steam Seal Evaporator produces high pressure steam.

B: All other Extraction Steam lines have Motor operated shutoff valves.

C: The extraction steam feed to the Steam Seal Evaporator could feed Main Steam directly to the Main Turbine.

D: All other Extraction Steam lines have large enough drain lines to depressurize the lines directly to the condenser.

Question Number 38

The plant is operating at rated power with all systems and equipment available.

No Condensate Polisher operations are in progress.

The Min Flow valve for a running Condensate Pump fails open.

Of the following:

(1) which annunciator(s) on P680 would be expected to alarm?

(2) which describes the procedure directed operator actions required to mitigate the situation?

A: (1) Low Pressure Rx FD Pumps Suction HDR
(2) Place the Mode Switch in Shutdown

B: (1) Low Pressure Rx FD Pumps Suction HDR
(2) Start the standby Condensate Pump

C: (1) Low Pressure Rx FD Pumps Suction HDR AND Tripped RFPT 1A Turbine
(2) Place the Mode Switch in Shutdown

D: (1) Low Pressure Rx FD Pumps Suction HDR AND Auto start of the RFP 1C
(2) Start the standby Condensate Pump

Question Number 39

The plant is operating at 95% of Rated Thermal Power with both Turbine Driven Reactor Feed Pump (TDRFPs) in service.

Narrow range level instrument, C34-N004A, is failed high.
Feedwater Level Control is selected to the "B" level instrument C34-N004B.
Narrow range level instrument C34-N004C suddenly fails high.

Which ONE of the following is the response of the feedwater system?

A: The TDRFPs trip.

B: The MDRFP starts and controls reactor water level.

C: The TDRFPs continue to control level since level instrument C34-N004B is selected.

D: The TDRFP flow controllers shift to MANUAL and Reactor water level response depends on feed and steam flow mismatch.

Question Number 40

The plant is in a normal full power lineup.

The following MCR AIR INTAKE radiation monitor FAILURES occur:

- ‘HI FAIL’ on the ‘D’ monitor.
- ‘AC POWER FAIL’ on the ‘C’ monitor.

What will be the effect on the Control Room HVAC System?

A: VC will stay in the normal system lineup.

B: The Supply Air Filter Package will startup.

C: The Makeup Air Filter Package will shutdown.

D: VC will shift to the Purge mode of operation.

Question Number 41

What is the normal method of maintaining the fire protection system pressurized with normal system leakage?

A: Continuous running of the Jockey Pump

B: Intermittent running of the Jockey Pump

C: Operation of the Horizontal Fire Pump

D: Operation of a Diesel Fire Pump

Question Number 42

The plant is at rated power.

The annunciator shown on the "stem figure" alarms on panel P801.

Which figure on the choices page shows the proper line up for Control Room Ventilation due to the annunciator?

A: Figure A

B: Figure B

C: Figure C

D: Figure D

Question Number 43

The plant was operating at 30% power.

A small break LOCA has occurred.
Mode switch is in shutdown.
Shut down criteria is met.
Drywell pressure is 2.0 psig and rising.
Reactor water level is -10 inches and lowering.
RCIC is injecting at 700 gpm.
Reactor pressure is 850 psig and lowering.
HPCS injection valve F004 fails shut.
All other systems are operating as designed.

Which of the following statements describes the next action(s) required to maintain adequate core cooling?

A: Lower reactor pressure and use condensate and condensate booster pumps to restore reactor water level.

B: Initiate steam cooling.

C: Emergency depressurize to inject with low pressure systems.

D: Inhibit ADS.

Question Number 44

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

Using the attached figure for Question 44, determine which ONE of the following describes the status of the Standby Liquid Control (SC) system.

A: Both SLC pumps injecting through one squib valve.

B: Only one SLC pump injecting through squib valve B.

C: Only one SLC pump injecting through squib valve A.

D: NO SLC pump is injecting into the reactor vessel.

Question Number 45

A plant startup is in progress, with the following:

- Reactor power is 85%

- Control rod withdrawals are complete

- Power ascension to rated power is in progress using Reactor Recirculation, only

- Approved and targeted ramp rate is 10% per hour

(1) Who must be present in the Control Room?
(2) Who is allowed to perform the reactivity management function?

A: (1) Reactor Engineer
(2) Control Room Supervisor

B: (1) Shift Manager
(2) Reactor Engineer

C: (1) Reactor Engineer
(2) Reactor Engineer

D: (1) Shift Manager
(2) Control Room Supervisor

Question Number 46

An operable motor operated valve (MOV) has been manually seated.

Which ONE of the following describes

(1) A source to find the valve's physical location?

(2) The method to be used the next time the valve must be unseated?

A: (1) The system procedure valve lineup.
(2) Electrically with the handswitch.

B: (1) Passport.
(2) Electrically with the handswitch.

C: (1) The system procedure valve lineup.
(2) Manually.

D: (1) Passport.
(2) Manually.

Question Number 47

The Reactor Coolant Chloride Limit is _(1)_ in Mode 1 than it is in Modes 2 and 3 because oxygen concentration is _(2)_ in
Mode 1 than it is in Modes 2 and 3.

A: (1) Higher
(2) Higher

B: (1) Higher
(2) Lower

C: (1) Lower
(2) Lower

D: (1) Lower
(2) Higher

Question Number 48

From the following, which statement describes "Operable-Operability", in accordance with CPS Technical Specifications.

The condition of a system, subsystem, division, component, or device…

A: necessary to protect the integrity of certain physical barriers to guard against the uncontrolled release of radioactivity.

B: capable of performing its specified safety function with its support systems capable of performing their required support functions.

C: capable of performing its specified safety function with some of its support systems inoperable.

D: that will allow testing, calibration or inspection to assure operation is within Safety Limits and LCOs.

Question Number 49

Annuciator 5060-8E, DIESEL GENERATOR 1A TROUBLE, has an orange flag on it.

Which ONE of the following describes the status of Annuciator 5060-8E?

A: Out of service annunciator.

B: Partially disabled annunciator.

C: Fully disabled annunciator.

D: Flagged as an expected alarm.

Question Number 50

Plant is operating at 20% power.

"A" APRM fails upscale. In addition to the "A" APRM upscale light…

(1) What is the impact of this failure?
(2) What is required to clear the alarm(s)?

	(1)	(2)
A:	Div 1 Half scram only	Bypass LPRMs on "A" APRM drawer
B:	Rod out block AND Div 1 Half scram	Place Division 1 sensor bypass switch in bypass
C:	Rod out block AND White data "A" APRM	Place Division 1 sensor bypass switch in bypass
D:	Rod out block AND White data "A" APRM	Bypass LPRMs on "A" APRM drawer

Question Number 51

Which ONE of the following Intermediate Range Monitor (IRM) Rod Blocks is bypassed when the Range Selector is positioned to RANGE 1?

A: IRM INOP

B: IRM UPSCALE

C: IRM DOWNSCALE

D: Detector Not Full In

Question Number 52

WHICH of the following Source Range Monitor (SRM) components are powered from the 120 VAC NSPS busses?

A: Detector drive motor controls

B: High voltage power supplies

C: Detector drive motors

D: SRM recorders

Question Number 53

Predict the impact of the following plant conditions

- Mode 2
- an equipment fault causes Reactor Power to rise to 17%

(1) What is the impact on RPS?
(2) What action is required Next?

A: (1) NO RPS trip.
(2) Lower recirculation flow.

B: (1) RPS trip.
(2) Place the mode switch in shutdown.

C: (1) NO RPS trip.
(2) Insert Control Rods in reverse sequence.

D: (1) RPS trip.
(2) Place the Mode switch in RUN.

Question Number 54

With the reactor at normal operating pressure which of the following is the LOWEST tail pipe temperature that would be an indication of a fully opened Safety Relief Valve?

A: 270°F

B: 390°F

C: 420°F

D: 450°F

Question Number 55

The unit was operating in normal, full power lineup.

- A small break LOCA occurred, dropping RPV water level to -52 inches.
- HPCS and RCIC started and raised RPV water level to Level 8.
- Current RPV water level is 30 inches and is lowering at 2 inches/minute.
- RCIC has been placed in normal injection lineup for RPV water level and RPV pressure control.
- RCIC Storage Tank level instruments fail low.

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

A: RCIC overspeed trips.

B: RCIC suction transfers.

C: HPCS injection valve opens.

D: HPCS minimum flow valve opens.

Question Number 56

The plant is in Mode 5 with the Reactor Mode Switch in REFUEL.

Fuel movement is in progress and the shorting links are removed.

What is the consequence of SRM "D" failing upscale?

A: Full scram with a rod block.

B: Full scram NO rod block.

C: Half scram with a rod block

D: Half scram NO rod block.

Question Number 57

The following condition exists pertaining to the APRMs

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

APRM channel "A" is deenergized due to a fault inside the APRM drawer.

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

A: Reactor automatically scrams immediately.

B: Reactor remains critical but a Rod Withdrawal Block is initiated.

C: Reactor automatically scrams after the OPRMs reach 20 counts.

D: No automatic actions but Technical Specifications actions are required.

Question Number 58

An Equipment Operator is to perform a clearance that requires independent verification.

Which ONE of the following components could be eligible for an independent verification waiver?

A Danger tag to be hung on the…

A: 1G33-F043A, RT Pump A suction isolation valve, handwheel.

B: 1CO01T CO2 compressor disconnect switch.

C: breaker for 1WS002A at Screenhouse MCC 1A.

D: 1CP-MV1A condensate polisher A inlet valve control switch at 1PL03J, TB 712.

Question Number 59

(1) Which RHR Loop is the preferred loop for Shutdown cooling?

(2) Why?

A: (1) A
(2) Less tubes are plugged in the A Heat Exchanger

B: (1) A
(2) Can discharge to Radwaste remotely

C: (1) B
(2) Less tubes are plugged in the B Heat Exchanger

D: (1) B
(2) Can discharge to Radwaste remotely

Question Number 60

Plant conditions are as follows:

The Reactor is at Rated Power.

A DIV 1 NSPS circuit malfunction causes the INPUT to the Load Driver that services Group 8 isolation valves to fail to ZERO.

Which ONE of the following valves shuts as a result of this failure?

A: EQUIPMENT DRAIN SUMP DISCHARGE CONTAINMENT INBOARD VALVE, 1RE021.

B: EQUIPMENT DRAIN SUMP DISCHARGE CONTAINMENT OUTBOARD VALVE, 1RE022.

C: REACTOR WATER CLEANUP SUCTION OUTBOARD ISOLATION VALVE, 1G33F004

D: CONTAINMENT BUILDING SUPPLY INBOARD ISOLATION BYPASS VALVE, 1VR002B.

Question Number 61

The plant is operating at rated power when SRV F051G fully opens.

No operator actions are performed.

Which of the following describes an expected response TEN (10) minutes later?

A: Rx power rises and stabilizes at a higher value.

B: Rx water level rises and stabilizes at a higher value.

C: Rx water level lowers and stabilizes out at a lower value.

D: MW electrical lowers and then returns to its previous value.

Question Number 62

The plant is operating at 60% power with both Turbine Driven Reactor Feed Pumps (TDRFP) on the Master Level Controller.

The D area operator reports the "A" Reactor Feed Pump (RFP) is noisy and "rougher" than the "B" pump.

A short time later the vibration readings on the "A" Reactor Feed Pump begin to go up and MCR Annunciator 5002 window
3B "High Vibration RFP 1A Shaft" alarms.

What direction would you expect from the CRS?

A: Reduce reactor power to less than 35% and place RFP's Flow Controllers on the Startup Controller.

B: Shift the "A" RFP to the Startup Controller and open the pump Minimum Flow Valve 1FW010A.

C: Transfer "A" RFP Flow Controller to MANUAL and reduce turbine speed.

D: Press TURB A pushbutton on the Start Mode Actuator Selector switch for automatic control of "A" RFP.

Question Number 63

Containment Continuous Purge Exhaust Radiation reads 120 mR/hr.

What is the expected status of the following?

Fuel Building Exhaust Isolation Damper 1VF09Y.	Standby Gas Treatment System Accident Range Monitor (AXM), 0RIX-PR008.

A:	SHUT	RUNNING
B:	SHUT	IN STANDBY
C:	OPEN	RUNNING
D:	OPEN	IN STANDBY

Question Number 64

Given the following plant conditions:

- Plant at 92% power.
- 6.9 KV and 4.16 KV Non ECCS Electrical Busses powered by the UAT.
- 4.16 KV ECCS Electrical Busses Powered by the RAT.
- No abnormal line-ups exist in the electrical distribution system.

The expected automatic response of the electrical distribution system to a loss of the RAT is that the 4.16KV ECCS busses _____.

A: load shed and are re-energized by the EDGs.

B: load shed then transfer to the ERAT, EDGs do NOT start.

C: auto transfer to the ERAT, NO load shedding occurs, EDGs do NOT start.

D: auto transfer to the UAT, NO load shedding occurs, EDGs start but do NOT tie to the bus.

Question Number 65

A Main Turbine startup is in progress.

The Main Turbine speed is 1300 rpm and rising

A loss of 1B UPS bus occurs.

What effect, if any, will this have on the Main Turbine Generator?

A: The Main Turbine trips.

B: All turbine control valves ramp close.

C: No effect on the Main Turbine.

D: The Main Turbine overspeeds.

Question Number 66

On the AR/PR Display, the Common Station HVAC Exhaust Stack Monitor, 0RIX-PR001 indicating tile is RED due to a trip of
channel 5 (Low Range Noble Gas).

The Accident Range HVAC Monitor, 0RIX-PR012 should be in _(1)_.

If it is verified that the RED indication is NOT due to a spike, it is immediately required to enter _(2)_.

A: (1) standby
(2) EOP-9, Radioactivity Release Control

B: (1) standby
(2) Abnormal Release of Airborne Radioactivity, 4979.01

C: (1) operation
(2) EOP-9, Radioactivity Release Control

D: (1) operation
(2) Abnormal Release of Airborne Radioactivity, 4979.01

Question Number 67

The plant had been operating at rated power when an ATWS occurred that resulted in the following plant conditions:

- Reactor pressure is 1100 psig and CANNOT be reduced
- Suppression pool temperature is 140ºF
- Drywell Temperature is 185ºF
- Containment Temperature is 155ºF
- Suppression pool level is 21 ft slowly rising.
- Reactor water level is 0 inches and steady
- All attempts to reduce suppression pool level and the rising trend have been unsuccessful.

Why is a blowdown required? Prevent…

A: exceeding Heat Capacity Limit.

B: exceeding drywell design temperature.

C: exceeding containment design temperature.

D: failures that would directly pressurize containment.

Question Number 68

Plant conditions warrant declaration of Emergency Classification at the SITE AREA EMERGENCY level. From the following, choose who would have Command Authority from the Technical Support Center (TSC) after Command Authority has been transferred to the TSC.

A: Shift Manager

B: Station Emergency Director

C: TSC Director

D: Corporate Emergency Director

Question Number 69

The plant is in MODE 5 for a refueling outage, with the following:

- Shutdown Service Water (SX) Pumps A and C are out-of-service and have Clearances installed.
- THEN, a complete loss of Service Water (WS) occurs.
- SX Pump B starts and runs.
- The associated WS to SX Header Isolation Valve fails to FULLY close.
- NLO reports that SX Header Pressure reads 90 psig, locally.
- THEN, a tube leak occurs in the inservice CCW Heat Exchanger.

Which ONE of the following describes the POTENTIAL consequence of the CCW HX tube leak?

A: Reduced heat transfer due to heat transfer surface fouling

B: Higher rate of depletion of the CCW Demineralizer resin

C: Radioactive discharge to the environment

D: Rising level in the CCW Expansion Tank

Question Number 70

The plant was operating at 95% Rated Thermal Power when a very large pipe rupture occurred in the Component Cooling
(CCW) System and resulted in the instantaneous loss of the CCW system.

Which ONE of the following sensing points provides the FIRST signal to trip the SA/IA Compressors?

A: Lube oil pressure.

B: Cooling water pressure.

C: Discharge air temperature.

D: Seal temperature.

Question Number 71

A diesel generator (D/G) is supplying an electrical bus in parallel with the grid. If the D/G governor setpoint is raised for two seconds, then D/G Output Frequency will be __(1)__ and D/G Output Current will be __(2)__.

A: (1) the same
(2) the same

B: (1) the same
(2) higher

C: (1) higher
(2) higher

D: (1) higher
(2) the same

Question Number 72

The plant is operating at rated conditions.

The attached figure shows the status of the Div 2 and Div 4 DC busses.

Which one of the following describes the status of the Batteries?

Div 2 is __(1)__

Div 4 is __(2)__

A: (1) on a Float Charge
(2) Discharging

B: (1) on a Float Charge
(2) early in an Equalize Charge

C: (1) Discharging
(2) on a Float Charge

D: (1) Discharging
(2) early in an Equalize Charge

Question Number 73

A Station Blackout (SBO) has occurred.

The HPCS Pump is injecting.

Which of the following actions are required?

DC load shed shall…

A: NOT be started until one hour after a SBO has occurred and shall be performed on ALL four DC busses.

B: NOT be started until one hour after a SBO has occurred and shall be performed ONLY for those DC busses that have lost the associated AC busses.

C: be performed within the first hour after a SBO has occurred and shall be performed ONLY for those DC busses that have lost the associated AC busses.

D: be performed within the first hour after a SBO has occurred and shall be performed on ALL four DC busses.

Question Number 74

Aux Building MCC 1B1 is deenergized.

The component that loses power is…

A: SLC Pump 1B

B: CRD Drive Water Pump 1B

C: RWCU Recirculation Pump 1B

D: Cycled Condensate Pump 1B

Question Number 75

The plant is in a normal full power lineup.

The RAT SVC readings at P870 are as follows:

4,220 Volts
+4 MVARs

Which ONE of the following will be the FINAL Div 1 Bus voltage AFTER the operator places the RAT SVC control switch to
OFF?

A: 4,060 Volts

B: 4,140 Volts

C: 4,300 Volts

D: 4,380 Volts