

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 1

2/22/2001

EX99040

The plant was operating at 99% power when a transient occurred. Not all control rods fully inserted. The following conditions exist:

- Several SRVs have lifted causing a suppression pool temperature increase.
- The CRS directed the initiation of SLC.
- Level in the reactor was lowered to reduce power production
- The crew is now inserting rods by driving and scrambling.

Which one of the following describes when it would be permitted to stop both SLC Pumps?

- A. The Reactor Engineer says that subcriticality can be guaranteed to 200°F
- B. All rods are at position 00 except for control rod 34-35 is at position 48.
- C. All rods are at position 00 except three in different quadrants at position 02.
- D. The Hot Shutdown Boron Weight of SLC has been injected.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 2

2/22/2001

EX01002

The plant was operating at 90 % power when a failure in the Main Turbine Pressure regulating system caused Reactor pressure to increase to 1089 psig. The reactor did not scram. PPM 5.1.2 directs that pressure be stabilized below 1060 psig.

Which one of the following describes the basis for this direction?

- A. Maximizes the amount of steam condensed in the Wetwell.
- B. Prevents SRV cycling and fluctuating RPV water level.
- C. Reduces RPV pressure to permit high-pressure Systems injection.
- D. Maintains Reactor water inventory in the Containment.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 3

2/22/2001

EX99086

The plant is shutdown with RHR-P-2B in operation for Shutdown Cooling. A crack in the SDC suction line causes a start of FDR-P-2 and a high water level alarm in the B RHR pump room.

In addition to this, automatic isolation of RHR SDC suction...

- A. valve RHR-V- 9 takes place at +13 inches to prevent flooding the RHR pump room.
- B. valve RHR-V-8 takes place at -50 inches to prevent flooding the RHR pump room.
- C. valves RHR-V-8 and 9 take place at -50 inches to prevent the further loss of reactor water inventory.
- D. valves RHR-V-8 and 9 take place at +13 inches to prevent the further loss of reactor water inventory.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 4

2/22/2001

EX01006

Which one of the following describes a design feature of an LPRM detector that reduces the rate of burnup of the detector?

- A. Enriched U-234 is added to the coating on the inner chamber wall which “breeds” an additional quantity of fissile material.
- B. Enriched U-235 is added to the coating on the inner chamber wall which “breeds” an additional quantity of fissile material.
- C. PU-238 is added to the inner chamber wall to act as a barrier to fast neutron flux.
- D. PU-239 is added to the inner chamber wall to act as a barrier to fast neutron flux.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 5

2/22/2001

EX01007

The plant was operating at 75% power when a fire caused the loss of IN-1.

Which one of the following describes the effect of this loss on the Main Turbine?

- A. DEH loses all AC Electrical power and trips the Main turbine.
- B. DEH loses all AC Electrical power and the Main Turbine can only be tripped by the manual trip on the front standard.
- C. The Main Turbine continues to operate with DEH Backup Power supplied by the Permanent Magnetic Generator in the Main Generator Exciter.
- D. The Main Turbine continues to operate with DEH Backup Power supplied by IN-3.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 6

2/22/2001

EX01008

The plant is operating at 99% power with all equipment operating normally. A malfunction in the supply breaker for SL-81 causes it to trip.

Which one of the following is correct?

RCC flow is...

- A. reduced to all components cooled by RCC, RCC-V-6 is open.
- B. normal to all components cooled by RCC, RCC-V-6 is open.
- C. shutoff to components outside the drywell, RCC-V-6 closes.
- D. shutoff to components inside the drywell, RCC-V-6 closes.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 7

2/22/2001

EX01009

The plant was operating at 94% power. The following actions occur:

SW-P-1A	Auto starts
RRA-FN-5 (LPCS Room Cooling Fan)	Auto starts

All plant equipment operates as designed.

Which one of the following caused these auto starts?

- A. Reactor level -46 inches.
- B. Drywell pressure 1.62 psig.
- C. High LPCS room temperature.
- D. Manual start of LPCS-P-1.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 8

2/22/2001

EX00030

The plant is operating at rated conditions with the lead Fan SGT-FN-1B-2 discharge SGT-V-5B-2, Exhaust to Stack, tagged closed for maintenance. A scram occurs from a loss of feedwater.

Assuming no operator action, which ONE of the following is correct concerning these conditions?

- A. SGT-FN-1B-2 auto starts and trips on low flow. SGT-FN-1B1 auto starts 10 seconds later and aligns to the stack.
- B. SGT-FN-1B-2 auto starts and runs with low flow and must be manually tripped.
- C. SGT-FN-1B1 auto starts and aligns to the stack immediately following the start signal.
- D. SGT-FN-1B1 auto starts 20 seconds following the start of SGT-FN-1B2 and aligns to the stack.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 9

2/22/2001

EX01011

The plant is operating at 95% power when an air leak occurs.

Which one of the following is correct concerning this condition?

The CAS standby air compressor starts when...

- A. service air header pressure decreases to 100 psig.
- B. service air header pressure decreases to 105 psig.
- C. instrument air header pressure decreases to 100 psig.
- D. instrument air header pressure decreases to 105 psig.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 10

2/22/2001

EX01013

Which one of the following describes the basis for an Emergency Depressurization if Wetwell Temperature and RPV Pressure cannot be maintained less than the HCTL?

- A. The code allowable stresses on the SRV Tailpipes will not be exceeded during the blowdown.
- B. The Primary Containment Pressure Limit will not be exceeded during an RPV depressurization.
- C. The Wetwell/Drywell interface will not fail during a DBA LOCA.
- D. Containment failure due to rapid depressurization is prevented.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 11

2/22/2001

EX01014

The plant is operating at 94% power when a loss of RPS A occurs.

Which one of the following is correct for these conditions?

Auto closure of...

- A. RCC-V-104 (Outboard Isolation).
- B. RCC-V-40 (Inboard Isolation).
- C. RWCU-V-4 (Outboard Isolation).
- D. RWCU-V-1 (Inboard Isolation).

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 12

2/22/2001

EX98074

You have been directed to maximize cooling of the suppression pool with the A loop of RHR.

Which ONE of the following describes the correct RHR lineup?

RHR-V-48A (HX bypass)...

- A. open, RHR-V-3A (HX discharge) full open, RHR-V-27A (suppression pool spray) closed, and RHR-V-24A (suppression pool test return) open.
- B. closed, RHR-V-3A (HX discharge) throttled, RHR-V-27A (suppression pool spray) open, and RHR-V-24A (suppression pool test return) closed.
- C. open, RHR-V-3A (HX discharge) full open, RHR-V-27A (suppression pool spray) open, and RHR-V-24A (suppression pool test return) open.
- D. closed, RHR-V-3A (HX discharge) full open, RHR-V-27A (suppression pool spray) closed, and RHR-V-24A (suppression pool test return) open.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 13

2/22/2001

EX01016

The plant is in MODE 5 with refueling in progress. Fuel Pool Cooling is in service with 1 pump, 1 heat exchanger, and 1 demineralizer in service. A leak in the Drywell Bellows seal has caused the Fuel Pool Cooling Skimmer Surge Tank level to decrease.

Which one of the following hard piped water sources can be used to limit the decreasing level?

- A. Standby Service Water (SSW)
- B. Turbine Service Water (TSW)
- C. Fire Protection
- D. Main Condensate (COND-P-1A discharge)

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 14

2/22/2001

EX98092

Following a major plant transient, RPV water level is -162 inches and down slow and 3 control rods have not fully inserted.

Which ONE of the following describes the required Tech Spec actions for these conditions?

- A. Initiate action within 1 hour to restore level to greater than -129 inches.
- B. Within 8 hours, restore reactor level to greater than + 13 inches and insert all insertable control rods.
- C. Within 2 hours, restore reactor level greater than -161 inches and insert all insertable control rods.
- D. Initiate action within 2 hours to restore level to greater than -129 inches.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 15

2/22/2001

EX01018

The plant is in operation at 93% power with CB B7 tagged out and removed from the cubicle for maintenance. A failure at the ASHE Substation causes a Main Generator Trip and a failure of TRS to close in. SW-P-1A then trips on overload. All other auto actions occur.

Assuming no operator action, which one of the following is correct concerning these conditions?

- A. DG-1 starts and closes onto the bus, then trips on High Jacket Water Temperature.
DG-2 starts but does not close onto the bus.
- B. DG-1 starts and closes onto the bus and operates until the ASHE Substation failure is repaired.
DG-2 starts but does not close onto the bus.
- C. DG-1 starts and closes onto the bus, then trips on High Jacket Water Temperature.
DG-2 starts and closes onto the bus.
- D. DG-1 starts and closes onto the bus and operates until the ASHE Substation failure is repaired.
DG-2 starts and closes onto the bus.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 16

2/22/2001

EX01019

The plant was operating at 91% power when a small break LOCA occurred concurrently with a failure of TR-S. HPCS-P-1 trips due to an overcurrent lock out.

Which one of the following systems is designed specifically to mitigate the effects of this event?

- A. RCIC
- B. ADS
- C. RHR
- D. LPCS

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 17

2/22/2001

EX01020

The plant was operating at 98% power when a transient occurred. Annunciators are received on both the front and back panels of the control room. During the recovery from the transient, it is noted that REA-V-1, REA-V-2, ROA-V-1, and ROA-V-2 have closed.

Assuming no operator action, which one of the following caused these indications?

- A. Trip of RFP-DT-1A
- B. Trip of COND-P-2A
- C. Lockout of SH-5
- D. Lockout on SM-7

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 18

2/22/2001

EX01021

Caution #1 in the EOPs states that RPV Level Instrumentation may not be used to determine RPV level if Drywell Temperature is at or above the RPV Saturation Temperature erroneous/erratic indication is observed.

Which one of the following explains this caution?

- A. Temperature greater than the RPV Saturation Curve in the drywell results in conditions exceeding the equipment qualifications of the RPV level transmitter.
- B. Temperature greater than the RPV Saturation Curve in the drywell results in steam flashing in the variable leg and erroneously low RPV level indications.
- C. Boiling may occur in the reference leg resulting in erroneously high indicated RPV water level.
- D. Boiling may occur in the reference leg resulting in erroneously low indicated RPV water level.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 19

2/22/2001

EX01022

The plant was operating at 93% power when a fire broke out in the control room. Thick smoke is rapidly filling the control room, requiring immediate evacuation.

Which one of the following actions is correct under these conditions?

- A. Manually Scram the reactor
Start RHR in suppression pool cooling
Notify the Hanford Fire Department by pushing the pushbutton on FCP-1
Announce (over the PA) the scram, evacuation, and operator to locally start DG2.
- B. Close the MSIVs
Start RHR in suppression pool cooling
Request Security to unlock the security doors
Announce (over the PA) the scram, evacuation, and all operators to the RSD Panel.
- C. Close the MSIVs
Start HPCS to maintain reactor level
Notify the Hanford Fire Department by pushing the pushbutton on FCP-1
Announce (over the PA) the scram, evacuation, and all operators to the RSD Panel.
- D. Manually Scram the reactor
Close the MSIVs
Request Security to unlock the security doors
Announce (over the PA) the scram, evacuation, and operator to locally start DG2.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 20

2/22/2001

EX01024

The plant has reached conditions which could cause a deflagration in the containment.

Which one of the following describes the reason an Emergency Depressurization is directed at this time?

The Emergency Depressurization...

- A. stops the production of H_2 in the reactor.
- B. stops the O_2 production in the reactor.
- C. places the reactor in the lowest possible energy state.
- D. reduces the amount of energy in the containment.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 21

2/22/2001

EX01025

The plant is operating at 68% power with RWCU-P-1A in service. CRD flow has to be isolated to the pump for a short period of time.

Which one of the following describes the area of the pump affected by the loss of CRD flow?

- A. External heat exchanger
- B. Pump pedestal heat exchanger
- C. Cavitation reduction supply
- D. Pump Motor Cavity

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 22

2/22/2001

EX01027

The plant is operating at 99% power with MC-S2-1A tagged out for bus work. A failure causes a lockout on BKR N1-3.

Assuming no operator action, which one of the following is correct concerning these conditions?

- A. The reactor scrams, RCIC and HPCS maintain water level in automatic from –50 inches to +54 inches.
- B. The reactor scrams, HPCS maintains water level in automatic from –50 inches to +54 inches.
- C. Reactor power is approximately 60% following a Recirculation Runback.
- D. Reactor power remains at 99% power.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 23

2/22/2001

EX01029

The plant was operating at 100% power when a transient occurred causing a reactor scram due to instantaneous neutron flux. Immediately following the scram, a full MSIV Isolation occurred.

Which one of the following describes the cause of this transient?

- A. Main Turbine Trip.
- B. Main Generator ground causing a load rejection
- C. Broken instrument air line to 1 MSIV.
- D. Loss of IN-3 to the MSIV isolation logic.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 24

2/22/2001

EX98086

The reactor is in MODE 5 with fuel movement underway. After moving a bundle through the “cattle chute” and into the vessel cavity, it is observed that the “ROD BLOCK INTERLOCK #1” light does not illuminate. The “HOIST LOADED” indicator is illuminated. The control room reports no rod block indication.

Which of the following actions is correct for these conditions?

- A. Immediately stop the refuel bridge until the inoperable rod block is corrected.
- B. Immediately initiate action to insert all insertable control rods in core cells containing one or more fuel assemblies.
- C. The fuel bundle may be moved back to the spent fuel pool, then immediately suspend in-vessel fuel movement.
- D. Fuel movement may continue as long as ROD BLOCK INTERLOCK #2 is operable.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 25

2/22/2001

EX98126

You have assigned a maintenance person to briefly inspect a valve inside of a valve room, which is a posted RADIATION AREA. The Maintenance person informs you that he only has 10 mr left on his yearly dose limit. Health Physics informs you that the radiation levels where the mechanic will be working are at the minimum value as defined for a RADIATION AREA posting.

Which one of the following is the maximum time available for this mechanic to inspect the valve?

- A. 1 hour
- B. 2 hours
- C. 2 ½ hours
- D. 5 hours

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 26

2/22/2001

EX01038

The plant is operating at 67% power when a complete loss of RCC requires a reactor scram.

Which one of the following describes the reason for this requirement?

The scram is directed because of the loss of cooling to the...

- A. CRD pump seals.
- B. RHR pump seal coolers.
- C. RWCU Non-regen Heat Exchanger.
- D. Recirculation Pump motors and seals.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 27

2/22/2001

EX01039

Which one of the following is designed to prevent secondary containment overpressurization during postulated piping break between the drywell and the Turbine Building?

- A. Standby Gas Treatment.
- B. Reactor Building Ventilation.
- C. Reactor Building Blowout Panels.
- D. Main Steam Tunnel Blowout Panels.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 28

2/22/2001

EX01042

The plant was operating at 89% power when a transient occurred. The CRS has directed the CRO to open the 7 ADS SRVs by arming and depressing the A and C Logic Channel pushbuttons. When the CRO pushes the pushbuttons, the 7 ADS SRVs open immediately. All 7 ADS SRVs close immediately upon release of the pushbuttons by the CRO.

Which one of the following is correct concerning these conditions?

- A. RHR-P-2A is not running.
- B. RHR-P-2C is not running.
- C. The Division 2 Inhibit switch is in the INHIBIT position.
- D. The Division 1 Inhibit switch is in the INHIBIT position.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 29

2/22/2001

EX01044

The reactor was operating at 96% power when a transient occurred causing reactor level to decrease rapidly. The following conditions exist:

Reactor level	stable at -136 inches for 2 minutes.
SM-8	out of service due to a lockout.
RHR-P-2A	Off
LPCS-P-1	Off

Which one of the following is correct?

The 7 ADS SRVs automatically open...

- A. immediately upon the breaker closure of RHR-P-2A or LPCS-P-1.
- B. when sufficient discharge pressure develops from RHR-P-2A or LPCS-P-1.
- C. as soon as the ADS timer timed out.
- D. as soon as level decreased below the setpoint.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 30

2/22/2001

EX01045

A plant startup is underway with the following conditions:

Reactor power	approximately 2% to 3%.
IRM A	75/125 R 8
IRM B	39/40 R 7
IRM C	45 /125 R 8

The CRO places the control switch for IRM C on Range 9.

Which one of the following is correct for these conditions?

- A. There is a ½ scram on RPS B and a Rod Block from IRM B. A full Scram is generated when the CRO places the Range Switch for IRM C on R 9.
- B. There is a ½ scram on RPS B and a Rod Block from IRM B. Another rod block is generated when the CRO places the Range Switch for IRM C on R 9.
- C. A ½ scram on RPS A is generated from IRM A at 75 on R8.
- D. A ½ scram on RPS A is generated from placing the Range Switch for IRM C on R 9.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 31

2/22/2001

EX01046

The plant is operating at 92% power when a broken line causes the main CIA header pressure to decrease to 0 psig.

Based on the design of the system, which one of the following is correct for these conditions?

- A. All SRVs can be opened 1 time from P601.
- B. All SRVs can be opened 5 times from P628/P631.
- C. Only ADS SRVs can be opened from P601.
- D. Only ADS SRVs can be opened and must be opened from P628/P631.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 32

2/22/2001

EX01049

The plant was operating at 99% power when a Load Rejection occurred on the Main Generator.

Which one of the following is correct for this condition?

Both Recirc Pumps...

- A. are running at 15 hz.
- B. are running at 60 hz.
- C. trip off with CB-RPT-3A and CB-RPT-3B tripped open.
- D. trip off with CB-RPT-3A, 3B, 4A, and 4B tripped open.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 33

2/22/2001

EX01050

The plant was operating at 99% power when a transient occurred. After the plant stabilized, both Recirc Pumps were operating at 15 hz. No operator actions have been taken.

Which one of the following caused these indications?

- A. Reactor level of -5 inches.
- B. Reactor Pressure of 1128 psig.
- C. Main Turbine Trip.
- D. COND-P-2A trip.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 34

2/22/2001

EX00096

The plant is operating at 99% power with a small steam leak in the drywell. All systems are operable. RCIC is in operation for a surveillance. The following conditions exist

Wetwell temperature	91°F
Drywell temperature	132°F
Wetwell level	+1.8 inches
Drywell pressure	1.1 psig

Which ONE of the following is correct concerning these conditions?

- A. One loop of RHR in operation is adequate for wetwell temperature reduction.
- B. HPCS is operated with flow to the Condensate Storage Tanks to reduce the increasing suppression pool level.
- C. Operation of available drywell cooling is maximized prior to initiation of more complex actions to terminate the increasing drywell temperature.
- D. The drywell is vented through CEP-V-1A and CEP-V-2A, 24 inch drywell vent valves to prevent exceeding the drywell initiation pressure.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 35

2/22/2001

EX01053

The plant is operating at 97% power when annunciator SPRAY HEAD TO TOP OF CORE PLATE ΔP HIGH for the High Pressure Core Spray System illuminates.

Which one of the following is correct concerning this condition?

SLC...

- A. injection is not affected.
- B. may not be able to be directly injected into the core if needed.
- C. will only inject if HPCS is running.
- D. will only inject if HPCS is off.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 36

2/22/2001

EX01054

The plant was operating at 98% power when a loss of all feedwater occurred. All plant equipment initiated as designed.

Assuming no operator action, which one of the following is correct?

- A. RCIC-V-45 closes at +54.5 inches and has to be manually opened before the RCIC Turbine restarts at the setpoint.
- B. RCIC-V-1 trips at +54.5 inches and has to be reset from the control room before it can be restarted.
- C. The HPCS DG High Crankcase Pressure trip is bypassed.
- D. The HPCS DG Generator Differential Relay trip is bypassed.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 37

2/22/2001

EX01056

The plant is in MODE 5 with fuel movement underway when the Bridge Air Compressor fails.

Which one of the following is inoperable without this air supply?

- A. Main Hoist Safety Brake
- B. Main Trolley Auxiliary Hoist Safety Brake
- C. Main Hoist Grapple
- D. Main Trolley Auxiliary Hoist

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 38

2/22/2001

EX01057

The plant is operating at 98% power. It is turnover time for dayshift. The oncoming crew composition is as follows:

Shift Manager	1
Control Room Sup.	1
Shift Support Sup.	1
Control Room Oper.	3
Equip. Operator	4 – 1 is Fire Brigade Leader qualified, 3 not FB qualified
STA	1
HP	3
Chemistry	1
Elec/I+C	1
Mech Maint.	1
SCC Duty Officer	1
Security Responder	1
Plant Laborer	1

Which one of the following is correct for these conditions?

- A. One EO (Fire Brigade qualified) must be held over from the previous shift until a replacement can be found for Fire Brigade requirements.
- B. Two EOs (Fire Brigade qualified) must be held over from the previous shift until replacements can be found for Fire Brigade requirements.
- C. The crew can take the watch as long as the Chemistry Tech is Fire Brigade qualified.
- D. The crew can take the watch as long as the Control Room Supervisor is Fire Brigade qualified and assumes the position of Fire Brigade Leader.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 39

2/22/2001

EX01058

Which one of the following is designed to minimize the affects of the Design Basis Rod Drop Accident?

- A. APRM Upscale scram (Mode Switch not in Run)
- B. IRM Upscale scram
- C. Rod Block Monitor
- D. Rod Worth Minimizer

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 40

2/22/2001

EX01059

The plant was operating at 99% power when a DBA LOCA occurred. A failure in the reactor pressure sensing instrumentation caused the indicated reactor pressure to increase to 1200 psig. You have been directed to start MSLC.

Which one of the following describes the effect on the operation of MSLC?

- A. MSLC-FN-1 does not start. No MSLC valves open.
- B. MSLC-FN-2 starts. MSLC-V-9 and 10 auto close.
- C. MSLC-V-3A through 3D open (inboard bleed valves).
- D. MSLC-V-1A through 1D open (inboard depressuization valves).

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 41

2/22/2001

EX01061

The plant was operating at power with BKR B-8 tagged out for maintenance. A fault caused BKR 3-8 to open.

Which one of the following is correct response for these conditions?

- A. IRM-A indicates UPSCALE TR OR INOP, UPSCALE ALARM, and DNSC on P603.
- B. IRM-B indicates UPSCALE TR OR INOP, UPSCALE ALARM, and DNSC on P603.
- C. RBM-A indicates UPSCALE, INOP, and DOWNSCALE on P603.
- D. RBM-B indicates UPSCALE, INOP, and DOWNSCALE on P603.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 42

2/22/2001

EX01063

The plant was operating at 46% power when a Large Break LOCA occurred. After the main turbine tripped, bkrs S-1, S-2, and S-3 failed to close.

Following reenergization of SM-7 &8, which one of the following is correct for these conditions?

The restart of...

- A. RHR-P-2A and RHR-P-2B is delayed 10 seconds.
- B. RHR-P-2A and RHR-P-2B is delayed 5 seconds.
- C. LPCS-P-1 and RHR-P-2C is delayed 10 seconds.
- D. LPCS-P-1 and RHR-P-2C is delayed 5 seconds.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 43

2/22/2001

EX01064

The plant was operating at 28% power when a failure caused a full MSIV Isolation. One of the SRV tailpipes has sheared off just below the Drywell Floor. Suppression Chamber Pressure is 21 psig.

Which one of the following is correct for these conditions?

At this point, the expected Drywell Pressure is approximately...

- A. 19.5 psig.
- B. 20.5 psig.
- C. 21.5 psig.
- D. 22.5 psig.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 44

2/22/2001

EX01065

With reactor level GT TAF, operation of HPCS Pump is **not** allowed with Suppression Pool level LT the Vortex Limit of the pump.

Which one of the following is the basis for this limitation/

- A. Air entrainment could occur and cause system damage during subsequent restarts.
- B. Air entrainment can cause pitting and failure in the spray ring nozzles.
- C. Loss of NPSH resulting in a pump trip from low suction pressure.
- D. Loss of NPSH resulting in pump runout and motor overheating.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 45

2/22/2001

EX01066

The plant was operating at 98% power when a failure caused all power connections between ASHE Substation and WNP-2 to trip open. One hour later, the following conditions exist at WNP-2:

Reactor Level	36 inches
Reactor Pressure	544 psig
Reactor Power	0% all rods in
RCIC	in operation for level control
Charger C1-1	failed, out of service
Battery B1-1	106 VDC
TRS	out of service

Which one of the following is correct for these conditions?

- A. Maintain reactor level with Condensate Booster pumps and RFW-FCV-10A/B.
- B. Stop RCIC and start HPCS for reactor level control.
- C. Continue the shutdown, using the BPVs for pressure control.
- D. Reset one Reactor Feedpump for level control.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 46

2/22/2001

EX01068

The plant was operating at 45% power when a lockout occurred on BKR S-2. HPCS-P-2 (Service Water Pump) did not start.

Which of the following is correct for these conditions?

- A. Trip HPCS-P-1 when it is determined unnecessary for adequate core cooling.
- B. Trip HPCS-P-1 immediately at P601.
- C. Immediately trip DG-3 at P601.
- D. Immediately trip DG-3 at the local diesel control panel.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 47

2/22/2001

EX01071

The reactor was operating at 98% power when an Inop trip on APRM-A coincident to a failure on RPS-B caused a full scram. Reactor level is in automatic on RFW-LIC-620 (RFW-FCV-10A/B) at 36 inches with pressure control on the Bypass Valves at 736 psig. The scram is reset.

Assuming no operator action, which one of the following describes plant response to a subsequent failure of all Bypass Valves full open?

- A. Reactor level decreases to approximately –20 inches and the Recirc pumps trip.
- B. Reactor level decreases to approximately –20 inches and the Recirc pumps runback to 15 hz.
- C. Reactor level increases to approximately +57 inches and returns +36 inches with Condensate/Condensate Booster pumps feeding through RFW-FCV-10A/B in automatic.
- D. Reactor level increases to approximately +57 inches and returns +36 inches with reactor feed pumps feeding through RFW-FCV-10A/B in automatic.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 48

2/22/2001

EX01074

The plant was operating at 57% power when a LOCA occurred. HPCS-P-1 is injecting into the RPV at 4950 gpm; LPCS-P-1 is injecting into the RPV at 1300 gpm. Reactor level is -209 inches and stable.

Which one of the following is true concerning these conditions?

Adequate core cooling is maintained by ...

- A. Core Submergence.
- B. Steam Cooling without injection.
- C. Steam Cooling with injection.
- D. Spray Cooling.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 49

2/22/2001

X01075

The plant was operating at 100% power when a DBA LOCA occurred. Fuel damage has occurred along with a failure of primary containment. SGT-FN-1A1 has been in operation for the last 15 minutes. SGT-EHC-1A1 now fails.

Which one of the following is correct for these conditions?

The loss of heating causes the efficiency of the...

- A. final HEPA Filter to decrease resulting in the offsite dose from the radioactive charcoal dust increasing.
- B. pre-filter to decrease resulting in the offsite dose from radioactive dust increasing.
- C. charcoal adsorbers to decrease resulting in the offsite dose from Iodine increasing.
- D. moisture separators to decrease resulting in the offsite dose from Iodine increasing.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 50

2/22/2001

EX01076

The reactor was operating at 94% power when a leak in the suction line of RRC-P-1A caused a scram. It is now 4 minutes following the scram. Reactor level is -45 inches and going up. Reactor Pressure is 430 psig.

Which one of the following is correct concerning these conditions?

The operator can start...

- A. RHR-P-2A and inject into the core with the Heat exchanger bypass open.
- B. RHR-P-2A and inject into the core with the Heat exchanger bypass closed.
- C. RHR-P-2B in Suppression Pool Cooling with the Heat exchanger bypass remaining closed.
- D. RHR-P-2B in Suppression Pool Cooling with the Heat exchanger bypass remaining open.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 51

2/22/2001

EX01077

RHR-A loop was in Suppression Pool Spray when a LOCA occurred.

Which one of the following is correct concerning these conditions?

- A. RHR-V-27A, Suppression Pool Spray auto closes, cannot be reopened until the LOCA signal has been reset.
- B. RHR-V-27A, Suppression Pool Spray auto closes, cannot be reopened until RHR-V-42A, RPV Injection, is closed.
- C. RHR-V-42A, RPV Injection does not open until RHR-V-27A, Suppression Pool Spray, is closed.
- D. RHR-V-42A, RPV Injection, opens; RHR-V-27A, Suppression Pool Spray, must be manually closed.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 52

2/22/2001

EX01079

The plant is operating at 99% power. Bus SM-82 is tagged out for maintenance. A failure causes a lockout on SM-75. All plant equipment operates as designed.

Which one of the following is correct for these conditions?

- A. Drywell Pressure decreases.
- B. Main Condenser Back Pressure decreases
- C. Main Turbine Lube Oil Temperature increases.
- D. CW Pit Level increases.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 53

2/22/2001

EX01082

A plant shutdown is underway for a refuel outage. Reactor pressure has been reduced to 45 psig and RHR-P-2B has been placed in Shutdown Cooling. Due to a DEH malfunction, reactor pressure is now increasing.

Which one of the following is correct for these conditions?

- A. At 48 psig, RHR Shutdown Cooling isolates and RHR-P-2B continues to run on minimum flow.
- B. At 48 psig, RHR Shutdown Cooling isolates and RHR-P-2B trips.
- C. At 125 psig, RHR Shutdown Cooling isolates and RHR-P-2B continues to run on minimum flow.
- D. At 125 psig, RHR Shutdown Cooling isolates and RHR-P-2B trips.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 54

2/22/2001

EX01088

The plant is operating at 72% power when a ground alarm is received on Battery S1-2. CRO-2 reports that S1-2 Ground Detection Meter indicates $0K\Omega$ (ohms).

Which one of the following is correct for this indication>

- A. The annunciator is spurious; the meter indicates no ground on S1-2.
- B. The annunciator is valid; the meter indicates a severe ground on S1-2.
- C. The Ground Test Switch has been placed in POS (positive).
- D. The Ground Test Switch has been placed in NEG (negative).

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 55

2/22/2001

EX00022

The plant is operating at 88% power, when the following auto actions take place:

- SGT started
- CSP/CEP isolated
- CN makeups isolated
- CR and TSC Emerg Filtration starts and aligns to remote air intakes
- RB Emerg Room Coolers start
- RB Lighting quenches
- RB EDR and FDR discharge headers isolate

The plant remains operating at power following the initiations. All plant equipment operated as designed.

Which ONE of the following is correct concerning these initiations?

These initiations were caused by.....

- A. 1.73 psig Drywell Pressure
- B. - 52 inches Reactor Water Level
- C. 15 mr/hr Reactor Building Exhaust Plenum
- D. + 1.9 inches H₂O Reactor Building Pressure

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 56

2/22/2001

EX01091

The plant was operating at 89% power when a loss of MC-8A occurred.

Which one of the following is a result of this loss?

- A. ½ Scram on RPS-A.
- B. Full Reactor Scram.
- C. Inboard and Outboard Isolation – MSIVs close and the reactor scrams.
- D. Inboard and Outboard Isolation – MSIVs stay open.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 57

2/22/2001

EX01093

The plant was operating at 97% power when a transient occurred. Wetwell temperature is now 93°F.

Which one of the following is correct concerning this condition?

- A. EOP actions are not required until wetwell temperature exceeds 110°F.
- B. EOP actions are not required until wetwell temperature exceeds 100°F.
- C. Enter PPM 5.2.1 Primary Containment Control.
- D. The high wetwell temperature is past the point at which SLC should be injected to prevent exceeding the HCTL.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 58

2/22/2001

EX01094

The plant was operating at 92% power when a transient caused an ATWS. The following conditions exist:

Reactor power	24%.
The MSIVs.	Open
SLC-P-1A and 1B	In operation
Reactor level	-70 inches on the Feedwater System

Which one of the following is correct concerning these conditions?

Cooldown...

- A. is not permitted until Cold Shutdown Boron Weight has been injected because core reactivity response for a partially borated core is unpredictable.
- B. is not permitted because additional heat load will be imposed on the primary containment that could lead to containment failure.
- C. is permitted to start when Hot Shutdown Boron Weight is injected
- D. is permitted as long as it is secured if the core returns to power.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 59

2/22/2001

EX01095

A fire has caused the control room to be abandoned.

Which one of the following describes level indications available at the Remote and the Alternate Remote Shutdown Panels?

- A. Wide Range (-150 to +60), Narrow Range (0 to +60), and Fuel Zone (-310 to -110) at the RSD.
Wide Range (-150 to +60), Narrow Range (0 to +60), and Fuel Zone (-310 to -110) at the ARSD
- B. Wide Range (-150 to +60) and Fuel Zone (-310 to -110) at the RSD.
Wide Range (-150 to +60) and Fuel Zone (-310 to -110) at the ARSD
- C. Wide Range (-150 to +60) and Narrow Range (0 to +60) at the RSD.
Wide Range (-150 to +60) and Narrow Range (0 to +60) at the ARSD
- D. Wide Range (-150 to +60) at the RSD.
Wide Range (-150 to +60) at the ARSD

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 60

2/22/2001

EX01096

The plant was operating at 95% power when an accident occurred. All procedural actions have been taken up to this point. The following conditions exist:

Reactor level	-210 inches
RHR-P-2A	Injecting
RHR-P-2B	Injecting
Drywell H2	6.2%
Wetwell O2	5.5%

Which one of the following is the next action to complete for these conditions?

- A. Initiate CAC with suction from the wetwell.
- B. Initiate CAC with suction from the drywell.
- C. Emergency Depressurize the reactor.
- D. Purge the drywell with Nitrogen.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 61

2/22/2001

EX99046

An EOP entry has been made following a reactor scram and steam leak in the drywell. The first step in the EOPs for controlling Drywell temperature is to maintain temperature with “available drywell cooling”.

Which of the following describes the reason for this direction?

- A. This action assures that the normal method of temperature control is attempted in advance of more complex actions.
- B. This action assumes normal cooling is not functional and to use whatever cooling is “available” under the given plant conditions.
- C. Other means to control temperature such as containment spray are not available until a LOCA signal has been received.
- D. This direction is given as an initial action since drywell-cooling equipment will load shed if conditions degrade, resulting in a LOCA signal.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 62

2/22/2001

EX01098

Which one of the following describes equipment that has an auto action at the same reactor level for RHR Shutdown Cooling Isolation?

- A. Auto close signal for CEP-V-2A/1A (upper drywell exhaust)
- B. Auto close signal for REA-V-1/2 (reactor building exhaust)
- C. Auto start signal for SGT-FN-1A1/1B1 (SGT lead fans)
- D. Auto start signal for CRA-FN-4A/B (drywell head exhaust fans).

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 63

2/22/2001

EX01101

The plant is operating at 100% power. All systems are operating as expected. DEH has a 945 psig setpoint.

Which one of the following is correct for these conditions?

Reactor pressure is...

- A. 1005 psig due to the 30 psig MSL pressure loss and the 30 psig control band from DEH.
- B. 975 psig due to the 30 psig control band from DEH.
- C. 1005 psig due to the 60 psig control band from DEH.
- D. 975 psig due to the 30 psig MSL pressure loss.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 64

2/22/2001

EX01102

A reactor startup is underway. IRM-E indicates 39 on range 4. The RO inadvertently moves the range switch for IRM-E to range 3. Immediately thereafter, a loss of MC-8A occurs.

Which ONE of the following is the expected plant response?

- A. A Rod Withdrawal Block only from IRM-E.
- B. A 1/2 scram only on RPS-A.
- C. A 1/2 scram only on RPS-B.
- D. A full scram.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 65

2/22/2001

EX01103

The plant is operating at 89% power. DG-1 has been started and loaded per the monthly operability surveillance. During the operability run, Drywell pressure increases to 2.02 psig. Five (5) minutes later, a loss of all offsite power occurs.

Which one if the following is correct for these conditions?

- A. DG-1 continues to run until the trip of DG1-7 on the loss of offsite power.
- B. DG-1 trips and has to be manually restarted. DG1-7 is manually synced to SM-7.
- C. DG1-7 trips, DG-1 continues to run, DG1-7 auto closes when the loss of all offsite power occurs.
- D. DG1-7 trips, DG-1 trips, DG-1 restarts and DG1-7 auto closes when the loss of all offsite power occurs.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 66

2/22/2001

EX01104

The plant is operating at 93% power with Battery B1-1 and Charger C1-1 out of service. A DBA LOCA occurs. Reactor level is -144 inches. Reactor pressure is 198 psig.

Which one of the following is correct concerning these conditions?

- A. RHR-P-2B and RHR-P-2C do not start.
- B. RHR-P-2A and LPCS-P-1 do not start.
- C. RHR-P-2B and RHR-P-2C start but do not inject.
- D. RHR-P-2A and LPCS-P-1 start but do not inject.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 67

2/22/2001

EX01105

The old refuel floor Jib Crane (1308 lbs) is being replaced during R-15.

Which one of the following is the maximum height it can be transported over the spent fuel pool water level?

- A. 2 ft.
- B. 3 ft.
- C. 4 ft.
- D. 5 ft.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 68

2/22/2001

EX01106

Which one of the following is the Columbia Generating Station yearly administrative hold point?

- A. 1 rem TEDE.
- B. 2 rem TEDE.
- C. 4 rem TEDE.
- D. 5 rem TEDE.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 69

2/22/2001

EX98094

PPM 5.4.1 Radioactivity Release Control requires Emergency Depressurization if the exclusion area boundary release rate approaches or exceeds the General Emergency limit.

Which ONE of the following describes the reason for this requirement?

- A. Emergency Depressurization reduces reactor pressure and allows low-pressure systems to inject into the reactor, limiting the release to the environment.
- B. The pressure reduction realized by Emergency Depressurization slows the rate of fuel damage in the reactor core and reduces the rate of release outside of the containment.
- C. The pressure reduction allows the containment vent path (MSIVs) to open and vent the primary system to the condenser, reducing the discharge to the environment.
- D. RPV depressurization reduces the driving head and flow of primary systems that are unisolated and discharging outside of containment.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 70

2/22/2001

ex98120

During the course of a 12 hour shift, the following events occur;

power increase, using Recirc. flow, from 80 to 100%
failure of RHR-A system surveillance
a tour group visited the control room for 30 min.
CRO adjusted gland seal spillover pressure 3 psig to 2 psig
unexpected plant trip from 100% power due to I & C surveillance.

Which one of the following lists the minimum required Control Room Log entries for the above time period?

- A. - the power increase and that it was accomplished using Recirc. flow
- the RHR-A TS action statement and the reason
- the reactor trip and the reason for the trip
- B. - the power increase and that it was accomplished using Recirc. flow
- the time the tour group entered and exited the control room.
- the RHR-A TS action statement and the reason
- the reactor trip and the reason for the trip
- C. - the power increase
- the RHR-A TS action statement and the reason
- the reactor trip and time immediate actions were completed
- D. - the power increase
- the RHR-A TS action statement and the reason
- the gland seal adjustment
- the reactor trip

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 71

2/22/2001

EX01109

The plant is operating at 92% power when reactor level increases to 39 inches and then very slowly returns to 36 inches.

Which one of the following is the cause of this indication?

- A. Feedflow transmitter fails low.
- B. Steamflow transmitter fails low.
- C. SRV fails open.
- D. Selected level transmitter fails high.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 72

2/22/2001

EX01110

A plant startup is underway with CRD-P-1A tagged out for maintenance. Reactor pressure is 350 psig. Reactor power is 4%. A failure then occurs causing the loss of CRD-P-1B.

Which one of the following is correct concerning these conditions?

- A. Reactor pressure is sufficient to ensure control rods can be fully scrammed at this point.
- B. Reactor pressure alone is not sufficient to ensure control rods can be fully scrammed at this point.
- C. Immediately trip the operating RWCU Pump.
- D. Immediately trip both RRC Pumps.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 73

2/22/2001

EX01111

The plant is operating at 99% power with RCIC in operation for a surveillance. The CRS is conducting a shift brief concerning the surveillance.

For which one of the following indications should the CRO interrupt the shift brief?

- A. Drywell pressure 1.1 psig and increasing.
- B. Suppression pool level +2.1 inches and increasing.
- C. Reactor level +33 inches and decreasing.
- D. Reactor building pressure -.1 inch of water and increasing.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 74

2/22/2001

EX01112

The plant is in Mode 5 with refueling underway. During movement of an irradiated fuel bundle from the reactor to the spent fuel pool, a bundle was dropped in the spent fuel pool. Damage was severe enough to the bundle to cause a radioactive release.

Which one of the following describes how refuel floor personnel are notified of the radioactive release?

- A. Rotating beacon only.
- B. Rotating beacon and local meter indication only.
- C. Rotating beacon and local meter indication and alarm light only.
- D. Rotating beacon, local meter indication and alarm light, and audible klaxon horn.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 75

2/22/2001

EX01113

Which one of the following describes how low pressure LPCI Injection piping is protected from full reactor pressure?

RHR-V-42A (42B and 42C) are interlocked closed until reactor pressure is less than...

- A. 160 psig.
- B. 220 psig
- C. 320 psig.
- D. 470 psig.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 76

2/22/2001

EX01114

A plant startup is underway with RPS-A powered from the alternate power supply and RPS-B powered from the normal supply. A loss of SH-6 occurs.

Which one of the following is correct for these conditions?

- A. RRC-P-1A trips and a ½ scram is received on RPS-A.
- B. RRC-P-1B trips and a ½ scram is received on RPS-B.
- C. RRC-P-1B trips and a ½ scram is received on RPS-A.
- D. RRC-P-1A trips and a ½ scram is received on RPS-B.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 77

2/22/2001

EX01115

A reactor startup is underway. Reactor power is currently 1200 counts on the Source Range. SRM-B then fails upscale.

Which one of the follow describes the response to this failure?

- A. RPS ½ scram on RPS-B, rod motion can continue with no action.
- B. A Rod Block is applied, no further rod motion is allowed until the block is bypassed.
- C. A full Scram is generated, all rods insert.
- D. There are no rod blocks or scrams generated, rod motion continues.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 78

2/22/2001

Ex01116

The plant is operating at 75% power when RFP-DT-1B speed controller fails upscale causing the feedpump to speed up and reactor level to increase. The feedpump cannot be tripped from the control room.

Which one of the following describes local Reactor Feedpump Trips?

An Equipment Operator can trip RFW-DT-1B...

- A. electrically and mechanically at the local RFPT control panel and mechanically only on the RFPT stanchion.
- B. electrically only at the local RFPT control panel and mechanically only on the RFPT stanchion.
- C. mechanically only at the local RFPT control panel and electrically only on the RFPT stanchion.
- D. mechanically only at the local RFPT control panel and mechanically only on the RFPT stanchion.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 79

2/22/2001

EX01117

You have been given an operability procedure for HPCS to perform. A number of the steps in the procedure are preceded by a # in the left margin.

Which one of the following is correct concerning the # symbol?

The # symbol is used to denote a step in the procedure which requires successful completion for compliance with...

- A. Licensee Controlled Specifications.
- B. Fire Protection.
- C. Tech Specs.
- D. Offsite Dose Calculation Manual.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 80

2/22/2001

EX01118

The plant is operating at 99% power when High Pressure Heater 6B trips on high level. Reactor Feedwater Inlet Temperature has dropped. 12°F.

Which one of the following is correct for this condition?

Reduce...

- A. core flow to at least 60MLbm/Hr to prevent fuel failure from pellet-clad interaction.
- B. core flow to at least 60MLbm/Hr to prevent main generator overheating.
- C. reactor power to at least 79% to prevent fuel failure from pellet-clad interaction.
- D. reactor power to at least 79% to prevent main generator overheating.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 81

2/22/2001

Ex01119

A control rod withdrawal is in progress for a reactor startup. Reactor period is 140 seconds and decreasing (getting shorter). SRM/IRM overlap has been verified and SRM withdrawal has been started. SRM-C is not withdrawing from the core.

Which one of the following is correct for these conditions?

- A. Control rod withdrawal stops immediately to prevent exceeding the high flux scram on SRM-C.
- B. Control rod withdrawal can continue until power level exceeds 1E5 counts. Reactor power increases until the point of adding heat.
- C. Reactor period indication on SRM-C is stable (140 seconds) as long as the detector does not move.
- D. The startup continues per the procedure. There is no effect from the stuck detector.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 82

2/22/2001

EX01120

The plant is operating at 98% power with all systems operable, when a loss of all feedwater occurs.

Assuming no operator actions, which one of the following is the **first** procedure entered?

- A. PPM 5.3.1 Secondary Cont. Control
- B. PPM 5.2.1 Pri. Cont. Control
- C. PPM 5.1.2 RPV Cont. ATWS
- D. PPM 5.1.1 RPV Control

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 83

2/22/2001

EX01121

The plant is in Mode 5. You have attempted to close Bkr. 1-7 for a backfeed of SM-1, but the breaker does not close.

Which one of the following is the reason Bkr. 1-7 cannot be closed?

- A. Undervoltage on SM-7
- B. Undervoltage on SM-1
- C. 86 L/O on 7-1
- D. 86 L/O on N1-1

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 84

2/22/2001

EX01122

The plant is shutdown when a loss of MC-7A occurs.

Which one of the following rad monitors is inoperable from this loss of power?

- A. REA-RIS-609C
- B. REA-RIS-609D
- C. MS-RIS-610C
- D. MS-RIS-610D

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 85

2/22/2001

EX01123

The plant is operating at 65% power when Ops 2 calls the control room and says he has a reverse transfer light illuminated on IN-3. The forward transfer light is out.

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

Loss of...

- A. PP-7A
- B. PP-8A
- C. S1-1.
- D. S1-2

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 86

2/22/2001

EX01124

The plant was operating at 99% power when a DBA LOCA occurred. Reactor level is –166 inches and up slow. The only available source of injection is COND-P-1A. An earthquake results in Fuel Zone indication decreasing off scale low.

Which one of the following caused this indication?

A broken...

- A. variable leg at the Jet Pump Diffuser instrument tap.
- B. variable leg at the Above Core Plate instrument tap.
- C. reference leg inside containment.
- D. reference leg outside containment.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 87

2/22/2001

EX01125

Which one of the following is the reason for operating the Standby Gas Treatment during accident conditions?

SGT...

- A. recirculates and filters reactor building atmosphere to allow personnel entry.
- B. recirculates and filters primary containment atmosphere to allow personnel entry.
- C. limits the release of radioactive material within the guidelines of 10CFR100.
- D. maintains a negative pressure if at least -.5 inches of water under all conditions.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 88

2/22/2001

EX01126

A plant startup is underway with the A2 sequence selected. All rod withdrawals in RSCS groups 1-4 have been completed.

Which one of the following is the correct control rod density for this condition?

- A. 25%
- B. 50%
- C. 75%
- D. 100%

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 89

2/22/2001

EX01127

The weekly Control Rod Operability Surveillance is in progress. The CRO is directed to apply a continuous withdraw signal to the selected control rod and verify stall flow on the selected rod.

Which one of the following is the reason for this direction?

Verifies...

- A. adequate cooling water flow.
- B. control rod coupling.
- C. proper operation of the stabilizing valves.
- D. proper operation of the withdraw directional control valves.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 90

2/22/2001

EX01128

The plant was operating at 97% power when a LOCA occurred. The LOCA signal is sealed in and has not been reset. All plant equipment functioned as designed. RHR-P-2A is in operation in Upper Drywell Spray. RHR-P-2B is in operation in Wetwell Spray. A lockout on Bkr 7-1 then causes the Startup Transformer to trip.

Which one of the following is correct for these conditions?

- A. RHR-P-2A and RHR-P-2B are in operation with power from the Backup Transformer.
- B. RHR-P-2A and RHR-P-2B are in operation with power from their respective DGs.
- C. RHR-P-2A is off. RHR-P-2B is in operation with power from the Backup Transformer
- D. RHR-P-2A is off. RHR-P-2B is in operation with power from DG-2.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 91

2/22/2001

EX01129

The plant was operating at 100% power when a LOCA coincident with a large leak in the Suppression Pool happens. The following conditions exist:

Wetwell level	20 feet and going down
Drywell Pressure	35 psig
Suppression Chamber Pressure	25 psig

Which one of the following is correct concerning these conditions?

- A. Suppression chamber pressure increases to .5 psig greater than Drywell pressure when Wetwell level is less than the bottom of the SRV Tailpipes.
- B. Suppression chamber pressure increases to .5 psig less than Drywell pressure when Wetwell level is less than the bottom of the SRV Tailpipes.
- C. When Wetwell level is less than the bottom of the downcomers, Suppression chamber pressure increases until it is slightly less than drywell pressure,
- D. When Wetwell level is less than the bottom of the downcomers, Suppression chamber pressure increases until it is slightly greater than drywell pressure,

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 92

2/22/2001

EX01130

The plant is operating at 93% power with surveillance for APRM-F Operability in progress. The I&C Technician places the APRM-F mode switch in the STANDBY position. However, no annunciators were received on P603 following the movement of the APRM mode switch.

Which one of the following is correct for these conditions?

- A. Reactor operation may continue, there is no Tech Spec action required.
- B. APRM Channel F must be placed in the tripped condition in 12 hours.
- C. RPS-B must be placed in the tripped condition in 12 hours.
- D. APRM Channel F must be placed in the tripped condition in 6 hours.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 93

2/22/2001

EX01131

Which one of the following describes the purpose of the Steam flow signal input to Feedwater Level Control?

Steam flow is directly summed with...

- A. feedflow, which modifies the level signal input to anticipate short-term level changes.
- B. feedflow, which modifies the level signal input to anticipate long term level changes.
- C. the level signal input to Feedwater Level Control to modify the level feedback and anticipate short-term level changes.
- D. the level signal input to Feedwater Level Control to modify the level feedback and anticipate long term level changes.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 94

2/22/2001

EX01132

Direction is given in the Drywell Temperature Control leg to spray the drywell before temperature reaches 330°F.

Which one of the following is the basis for this direction?

Drywell sprays are initiated to cool the drywell and prevent exceeding the...

- A. Drywell floor downward pressure limit.
- B. Reactor Recirc Pump Motor temperature limit.
- C. Primary Containment design pressure.
- D. ADS design temperature.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 95

2/22/2001

EX01133

The plant was operating at 87% power when an MSIV isolation occurred. Following the isolation, a loss of DP-S1-1A occurred.

Which one of the following is correct concerning these conditions?

- A. The relief function for all SRVs is disabled, manual operation can only be performed from the Div 2 ADS switches on P631.
- B. The relief function for all SRVs is disabled, manual control can be performed for all SRVs from P601.
- C. The relief function for all SRVs is operable, manual operation can only be performed from the Div 2 ADS switches on P631.
- D. The relief function for all SRVs is operable, manual control can be performed for all SRVs from P601.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 96

2/22/2001

EX01134

Which one of the following is the DEH Mode that responds to RPM input requests?

- A. Reactor Start
- B. Turbine Follow Reactor Manual
- C. Turbine Start
- D. Turbine Load Control

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 97

2/22/2001

EX01135

A reactor startup is underway. FWLC is being changed from the 10 valves for level control to RFP Speed control. PPM directs that RFW-V-112A be opened, which has been done. The next step also directs that RFW-V-112A be opened.

Which one of the following is correct for these conditions?

- A. A Verbal Temporary Change must be made to the procedure and approved by the SM/CRS. A TCN does not have to be completed.
- B. An Editorial change can be made to the procedure, signed (by the SM/CRS) and dated copies of the changes are submitted to Admin Services, Procedure Control, and the startup can continue.
- C. The CRO can make an editorial change to the procedure and submit it for approval to Admin Services, Procedure Control. The startup can continue.
- D. The TCN must be completed by the SM/CRS and approved by one other member of the Management Staff before the startup continues.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 98

2/22/2001

EX01136

PPM 5.2.1 has been entered due to high Drywell Pressure. Neither RHR-A nor RHR-B can be placed in Containment Spray. Direction is given in the PC Pressure leg of PPM 5.2.1 to Emergency Depressurize the reactor if Wetwell Pressure cannot be maintained less than the Pressure Suppression Pressure.

Which one of the following is the basis for this direction?

- A. Any LOCA subsequent to exceeding the Pressure Suppression Pressure will cause a containment failure due to exceeding the Primary Containment Pressure Limit.
- B. Any LOCA subsequent to exceeding the Pressure Suppression Pressure will cause a containment failure due to failure of the Wetwell to Drywell Interface.
- C. A subsequent reactor blowdown may exceed the Heat Capacity Temperature Limit when the SRVs are opened.
- D. A subsequent reactor blowdown may exceed the Suppression Pool boundary design load when the SRVs are opened.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION
QUESTION # 99

2/22/2001

EX01137

The Control Room Emergency Filtration fans, WMA-FN-54A/B auto started due to an auto initiation. The auto initiation signal has been cleared and you have been directed to stop WMA-FN-54A/B and realign WMA-AD-54A1/B1.

Which one of the following describes the minimum action(s) necessary to realign these components?

- A. Depress both ISOLATION LOGIC A AND B and ISOLATION LOGIC C AND D pushbuttons on P601 and place both WMA-FN-54A/B control switches to the RESET position.
- B. Depress both ISOLATION LOGIC A AND B and ISOLATION LOGIC C AND D pushbuttons on P601 and both WMA-RMS-FAZ-3AXY/3BXY pushbuttons on RC-1 and RC-2.
- C. Place both WMA-FN-54A/B control switches to the RESET and back to AUTO position.
- D. Depress both WMA-RMS-FAZ-3AXY/3BXY pushbuttons on RC-1 and RC-2.

COLUMBIA GENERATING STATION RO WRITTEN EXAMINATION

QUESTION # 100

2/22/2001

EX01138

A LOCA has just caused an automatic scram from 45% power. All systems operated as expected. Reactor pressure is 145 psig and reactor level is -206 inches and down slow. A BISI annunciator for RHR B OUT OF SERVICE illuminates. Investigation indicates RRA-FN-10 (RHR-B room cooling fan) has a power supply failure. The room temperature is normal. The CRS directs that RHR-B be operated in LPCI injection.

Which one of the following is correct for this condition?

The direction given is...

- A. incorrect, continued operation of RHR is not assured without the room coolers.
- B. incorrect, there are enough systems injection to ensure adequate core cooling.
- C. correct, room coolers have no effect on continued operation of RHR in the LPCI Mode.
- D. correct, all available injection systems should inject, regardless of operability concerns.