U.S. Nuclear Regulatory Commission

Site-Specific RO Written Examination

Applicant Information			
Name:			
Date:	March 20, 2009	Facility/Unit:	Pilgrim
Region:	I	Reactor Type:	GE
Start Time:		Finish Time:	

Instructions

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

Applicant Certification

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

_____
Applicant's Signature

Results		
Examination Value	_____	Points
Applicant's Score	_____	Points
Applicant's Grade	_____	Percent

1.	A	B	C	D	26.	A	B	C	D
2.	A	B	C	D	27.	A	B	C	D
3.	A	B	C	D	28.	A	B	C	D
4.	A	B	C	D	29.	A	B	C	D
5.	A	B	C	D	30.	A	B	C	D
6.	A	B	C	D	31.	A	B	C	D
7.	A	B	C	D	32.	A	B	C	D
8.	A	B	C	D	33.	A	B	C	D
9.	A	B	C	D	34.	A	B	C	D
10.	A	B	C	D	35.	A	B	C	D
11.	A	B	C	D	36.	A	B	C	D
12.	A	B	C	D	37.	A	B	C	D
13.	A	B	C	D	38.	A	B	C	D
14.	A	B	C	D	39.	A	B	C	D
15.	A	B	C	D	40.	A	B	C	D
16.	A	B	C	D	41.	A	B	C	D
17.	A	B	C	D	42.	A	B	C	D
18.	A	B	C	D	43.	A	B	C	D
19.	A	B	C	D	44.	A	B	C	D
20.	A	B	C	D	45.	A	B	C	D
21.	A	B	C	D	46.	A	B	C	D
22.	A	B	C	D	47.	A	B	C	D
23.	A	B	C	D	48.	A	B	C	D
24.	A	B	C	D	49.	A	B	C	D
25.	A	B	C	D	50.	A	B	C	D

51.	A	B	C	D
52.	A	B	C	D
53.	A	B	C	D
54.	A	B	C	D
55.	A	B	C	D
56.	A	B	C	D
57.	A	B	C	D
58.	A	B	C	D
59.	A	B	C	D
60.	A	B	C	D
61.	A	B	C	D
62.	A	B	C	D
63.	A	B	C	D
64.	A	B	C	D
65.	A	B	C	D
66.	A	B	C	D
67.	A	B	C	D
68.	A	B	C	D
69.	A	B	C	D
70.	A	B	C	D
71.	A	B	C	D
72.	A	B	C	D
73.	A	B	C	D
74.	A	B	C	D
75.	A	B	C	D

Question 001

4160 VAC system bus A-5 is being powered from the SUT. All other plant systems are operable and in their normal alignment.

Then 4160 VAC breaker A504 (Bus A-5 Startup Transformer Feeder) trips due to a breaker failure.

Which ONE of the following describes the effect on Bus A-5?

A. The "A" EDG output breaker will close onto the bus in 10 seconds.

B. The bus will remain de-energized.

C. The shutdown transformer feeder breaker will close onto the bus in 12 seconds.

D. The shutdown transformer feeder breaker will immediately close onto the bus.

Question 002

With the reactor mode switch in Startup, which one of the following conditions will result in a full automatic scram?

A. Hi-Hi trip on SRM "A" and INOP trip on SRM "C" with ALL shorting links installed.

B. Hi-Hi trip on SRM "A" with ALL shorting links removed.

C. INOP trip on SRM "C" with ALL shorting links installed.

D. Downscale trip on SRM "A" and Downscale trip on SRM "B" with ALL shorting links removed.

Question 003

Which ONE of the following describes the relationship between HPCI and its power supplies?

A. ONLY HPCI initiation logic is powered directly from 125 VDC.

B. ONLY HPCI isolation logic is powered directly from 125 VDC.

C. HPCI initiation & isolation logic are powered directly from 125 VDC.

D. HPCI initiation & isolation logic are powered directly from a 120 VAC inverter.

Question 004

Which ONE of the following describes the RCIC system response, if any, if a loss of D7 occurs, and then reactor water level lowers to –47"?

A. RCIC will automatically start and inject into the reactor.

B. RCIC will not automatically start and inject, and cannot be aligned for injection from the control room.

C. RCIC will automatically start and inject but the RCIC flow control must be controlled in MANUAL.

D. RCIC will not automatically start but can be manually started from the control room.

Question 005

With the plant operating at power, a loss of Panel Y-2 occurs. The plant is manually scrammed.

Which ONE of the following describes the affect of this power loss on the IRM system?

A. The ability to monitor IRM levels on C905 and on the back panels will be lost.
The IRM detector drive control relays will not function.

B. The ability to monitor IRM levels on C905 and on the back panels will be lost.
The IRM detector drive control relays will remain functional.

C. The ability to monitor IRM levels on C905 will be lost. IRM levels can still be determined on the back panels.
The IRM detector drive control relays will not function.

D. The ability to monitor IRM levels on C905 will be lost. IRM levels can still be determined on the back panels.
The IRM detector drive control relays will remain functional.

Question 006

A power ascension with control rods is in progress. Current reactor power is 52% and a center control rod is being withdrawn. During the rod withdraw, APRM channel "B" fails downscale.

Without any operator actions, which one of the following statements describes the response of the Rod Block Monitoring System?

A. An automatic bypass of RBM channel "B" occurs.

B. A RBM Downscale trip is generated.

C. A RBM INOP trip is generated.

D. The reference APRM signal to RBM "B" automatically shifts to APRM "D"

Question 007

The plant is at full power with a normal electric plant configuration.

Regarding the Vital 120 VAC system Y-2, which ONE of the following will result in Y-2's Automatic Bus Transfer (ABT) shifting to the backup power supply?

A. Loss of B-6 solely.

B. Loss of D-10 solely.

C. Loss of B-6 AND D-10.

D. Loss of B-6 AND B-15.

Question 008

RHR pump "A" is aligned in the Shutdown Cooling Mode of operation. The RHR inboard injection valve (MO-29A) and outboard injection valve (MO-28A) are full open. Then, reactor water level is inadvertently lowered below +12 inches.

Which ONE of the following describes the response of the RHR system? (assume no operator action)

A. "A" RHR pump trips.
MO-29A closes, and will remain closed even if reactor level continues to drop below -46 inches.

B. "A" RHR pump trips.
MO-29A closes but will automatically reopen if reactor level continues to drop below -46 inches.

C. "A" RHR pump will be operating on minimum flow.
MO-29A closes, and will remain closed even if reactor level continues to drop below -46 inches.

D. "A" RHR pump will be operating on minimum flow.
MO-29A closes but will automatically reopen if reactor level continues to drop below -46 inches.

Question 009

During rated power operation of Pilgrim, a loss of 125 VDC panel D-6 occurs, which results in a reactor scram.

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

A. The main turbine will trip automatically, but the hood spray valve will not open.

B. The main turbine can be tripped from Control Room Panel C-2 by using the Master Trip Pushbuttons, but Turbine Supervisory indications and alarms will be lost.

C. The main turbine can only be manually tripped from the Front Standard, but the EPR will still have control power.

D. The Main turbine can be tripped from Control Room Panel C-2 by using the Vacuum Trip #2 Pushbutton and the main turbine turning gear will still have control power.

Question 010

The following plant conditions exist:

- A major Loss of Coolant Accident has occurred and the RPV is depressurized.
- All control rods are fully inserted.
- Both Core Spray pumps are injecting into the reactor vessel at 4000 gpm each
- Reactor water level is -130 inches and rising.
- "A" and "B" RHR pumps are aligned for containment cooling.
- "C" and "D" RHR pumps are secured.

An operator subsequently notes that Core Spray System flow and pump amps begin to fluctuate significantly.

Which ONE of the following describes the condition of the Core Spray pumps, including guidance for continued operation?

They are...

A. running out but should not be secured since adequate core cooling does not exist.

B. running out and may be secured since adequate core cooling can be maintained.

C. cavitating but should not be secured since adequate core cooling does not exist.

D. cavitating and may be secured since adequate core cooling can be maintained.

Question 011

The plant is operating at 96%. The Reactor Vessel Steam Dome Pressure - High Trip Unit (PIS-263-51A) for Reactor Protection System (RPS) Channel A2 has failed high.

Which ONE of the following describes the affect of this failure on RPS?

A. A full reactor scram would occur

B. A ½ scram would occur on the A Channel of RPS.

C. A ½ scram would occur on the B Channel of RPS.

D. One half the logic for a half scram is satisfied but no RPS actuations occur.

Question 012

A loss of bus D-4 occurs. Which ONE of the following describes the effect on the Diesel Generator 'A'?

If running, the Diesel Generator 'A' _(1)_ and if not running, the diesel _(2)_.

A. (1) will trip under all trip conditions
(2) cannot be started from the Control Room but will auto start

B. (1) will only trip on mechanical overspeed
(2) will not respond to an auto start signal and cannot be started from the Control Room

C. (1) cannot be tripped from the Control Room
(2) cannot be started from the Control Room but will auto start if a start signal is generated

D. (1) can be tripped from the Control Room and will trip on mechanical overspeed
(2) will not respond to an auto start signal but can be manually started from the Control Room

Question 013

The plant has experienced a failure to SCRAM.

Upon direction of the CRS, the 905 Operator initiates SBLC by taking the Standby Liquid Control System initiation control switch to position "A".

After a few minutes, the Operator observes the following indications:

- Reactor power is 13% and steady
- "SQUIB VALVE CONTINUITY FAILURE" annunciator is in alarm
- The Amber continuity lamp for "A" squib is extinguished
- The SBLC tank level is 4300 gallons and steady
- The "A" SBLC pump discharge pressure is 1425 psig and steady
- The red indicating lamp for "A" SBLC pump is lit

Which ONE of the following describes the status of the SBLC system?

A. The SBLC system is operating properly.

B. The SBLC tank level indicator has failed.

C. The "A" squib valve has fired, but it has failed to open.

D. The "A" SBLC pump suction is blocked.

Question 014

SRVs are being used for pressure control during a plant event.

They are opened in a preferred sequence in order to....

A. prevent SRV solenoid valve failure.

B. evenly distribute heat around the torus.

C. prevent the overheating of any one SRV tailpipe.

D. minimize the possibility of SRV T-quencher failure.

Question 016

A plant event occurred and all equipment responded as designed. Plant parameters responded as follows.

- RPV water level lowered to -39 inches and has since recovered to +20 inches.
- Drywell Pressure has increased to 5.0 psig and has since lowered to 2.7 psig.

Which ONE of the following contains ALL the actions necessary to reopen the H2/O2 isolation valves on panel C904?

Place all control switches to the CLOSED position and...

A. Reset the isolation using the PCIS Group 2, 3, 6 ISOL reset switch on C905.
Reopen the valves.

B. Reset the isolation using the PCIS Group 2, 3, 6 ISOL reset switch on C905.
Position the PCIS GROUP 2 ISOL OVERRIDE RESET switch to the RESET position on C904.
Reopen the valves.

C. Position the PCIS GROUP 2 ISOL OVERRIDE RESET switch to the OVERRIDE position on C904.
Reopen the valves.

D. Reset the isolation using the PCIS Group 2, 3, 6 ISOL reset switch on C905.
Position the PCIS GROUP 2 ISOL OVERRIDE RESET switch to the OVERRIDE position on C904.
Reopen the valves.

Question 017

The instrument air system is in its normal configuration with the K-111 air compressor in Lead and the K-110 in Lag.

Which ONE of the following describes the response of the Instrument Air system following a complete loss of TBCCW?

K-111 trips on high discharge air temperature AND

A. K-110 will not start due to low cooling water flow interlock
K-117 will start and maintain instrument air pressure indefinitely.

B. K-110 will start and subsequently trip on high discharge air temperature.
K-117 will start and maintain instrument air pressure indefinitely.

C. K-110 will start and subsequently trip on high discharge air temperature.
K-117 will not start due to low cooling water flow interlock resulting in a complete loss of instrument air.

D. K-110 will start and subsequently trip on high discharge air temperature.
K-117 will then start and also trip on high discharge air temperature resulting in a complete loss of instrument air.

Question 018

A valid Reactor Building Isolation System (RBIS) signal is received.

Which ONE of the following describes sequentially how the SBGT system responds? (SBGT Train "A" is in AUTO, Train "B" is in STBY)

A. SBGT FAN "A" starts.
AO-N-99 and AO-N-106 (TRAIN "A" and TRAIN "B" INLET DMPRs) open.
When AO-N-106 is open, a limit switch starts SBGT FAN "B".

B. SBGT FAN "A" & "B" start simultaneously.
AO-N-99 and AO-N-106 (TRAIN "A" and TRAIN "B" INLET DMPRs) open.

C. SBGT FAN "A" starts.
AO-N-99 and AO-N-106 (TRAIN "A" and TRAIN "B" INLET DMPRs) open.
SBGT FAN "B" does NOT start unless a low discharge flow is sensed on the "A" Train.

D. AO-N-99 and AO-N-106 (TRAIN "A" and TRAIN "B" INLET DMPRs) open.
Once AO-N-99 and AO-N-106 are open, a limit switch starts SBGT FANS "A" & "B".

Question 019

RCIC is in operation injecting to the RPV.

Under which of the following conditions would the RCIC Turbine Trip Throttle valve indicate OPEN in the main control room?

(1) RPV Level of -46"
(2) RPV level of +45"
(3) RPV pressure of 20 psig
(4) RCIC pump suction pressure of 15" Hg vacuum

A. (3) and (4)

B. (1) and (2)

C. (1) and (3)

D. (2) and (4)

Question 020

Following a complete loss of normal feed, RPV level lowers to -46 inches. Both recirc pumps trip and the "B" recirc pump discharge valve closes (MO 202-5B). RPV level has now recovered and efforts are underway to stabilize the plant.

What actions are required to re-open the "B" recirc pump discharge valve (MO 202-5B) and restart the "B" recirc pump?

A. Depress the "B" LPCI INITIATION SIGNAL RESET pushbutton
No other action is required

B. Depress BOTH "A" and "B" LPCI INITIATION SIGNAL RESET pushbuttons
No other action is required

C. Depress the "B" LPCI INITIATION SIGNAL RESET pushbutton AND
Depress the "B" LPCI LOOP SELECT RESET pushbutton
No other action is required

D. Depress BOTH "A" and "B" LPCI LOOP SELECT RESET pushbuttons
No other action is required

Question 021

While operating at 100% power in 3-element control, one FWLC feedwater flow detector is inadvertently bypassed. (The equalizer valve on the feed flow detector was opened.)

Which ONE of the following describes the RPV level response to the above condition?

A. RPV level decreases due to an erroneously high feed flow signal.

B. RPV level increases due to an erroneously low feed flow signal.

C. RPV level remains constant due to just one feedwater flow detector being bypassed.

D. RPV level remains constant due to FWLC being level dominant.

Question 022

Which of the following conditions will cause an automatic transfer of HPCI pump suction?

(1) With HPCI suction aligned to the CST, torus level rises and continues to rise.
(2) With HPCI suction aligned to the torus, torus level lowers and continues to lower.
(3) With HPCI suction aligned to the CST, CST level lowers and continues to lower.

A. Condition (3) only

B. Conditions (1) and (3) only

C. Conditions (2) and (3) only

D. Conditions (1) and (2) only

Question 023

Which ONE the following describes the inter-relationship between the TIP system and the LPRMs?

A. The TIP system provides an axial flux profile of the reactor using 4 TIP detectors. Each TIP detector can be inserted into the dry tubes of each LPRM assembly.

B. The TIP system provides a radial flux profile of the reactor using 4 TIP detectors. Each TIP detector can be inserted into the dry tubes of each LPRM assembly.

C. The TIP system provides an axial flux profile of the core using 4 TIP detectors. Each LPRM detector is capable of being probed by a TIP. The central LPRM assembly can be probed by each of the four TIP units.

D. The TIP system provides a radial flux profile of the core using 4 TIP detectors. Each LPRM detector is capable of being probed by a TIP. The central LPRM assembly can be probed by each of the four TIP units.

Question 024

MCC B-2 is not available due to maintenance on the bus.

Then, MCC B-1 loses power.

Which answer contains THREE valves that no longer are powered?

A. SDC Outboard Isolation VLV MO-1001-47
LPCI INJ VLV, MO-1001-29A
Upper Drywell Spray VLV #1, MO-1001-23A

B. SDC Inboard Isolation VLV MO-1001-50
LPCI INJ VLV, MO-1001-29B
Upper Drywell Spray VLV #1, MO-1001-23B

C. SDC Outboard Isolation VLV MO-1001-47
LPCI INJ VLV, MO-1001-29A
LPCI INJ VLV, MO-1001-29B

D. SDC Inboard Isolation VLV MO-1001-50
LPCI INJ VLV, MO-1001-29B
Radwaste Block Valve, MO-1001-21

Question 025

During the conduct of PNPS 8.7.2.1, Measurement of Standby Gas Treatment (SBGT) Filters and Fan Capacity the "A" SBGT Train has been started and the following Perforated Plate DP (AA22) reading taken

- AA22 1.01

Using Attachment 4 from 8.7.2.1, A TRAIN SGTS PERFORATED PLATE DP (AA22) VERSUS AIR FLOW (CFM), determine if the SGT flow is acceptable and what actions are required.

In accordance with PNPS 8.7.2.1, Attachment 4 the "A" SGT flow is:

A. Acceptable, no further actions are required.

B. Acceptable but not at optimum, initiate action to have the flow raised.

C. NOT Acceptable, the flow is too low, enter the appropriate Technical Specifications.

D. NOT Acceptable, the flow is too high, enter the appropriate Technical Specifications.

Question 026

The "B" train of ADS LOGIC is INOPERABLE and being worked on. The "INHIBIT" switch for the "B" train is in the "INHIBIT" position.

The plant conditions are as follows:

- Reactor pressure 1000#
- RPV level -49"
- Drywell pressure 3 psig
- Drywell temp 156 degrees F
- RHR pump "D" is running

Which of the following describes the Automatic Depressurization System response if the above conditions have been in place for 2 minutes?

A. Only SRVs "A" and "C" will open.

B. Only SRVs "B" and "D" will open.

C. All SRVs remain closed.

D. All SRVs will open.

Question 027

PNPS was initially at 100% power when a feed line break inside the drywell resulted in a reactor scram. In addition:

- All available reactor feed pumps have tripped on low suction pressure
- Drywell pressure is 3.2 psig and rising
- RPV level lowered to -35 inches before recovering to its current value of +25 inches via HPCI injection.

Based on the information provided, which ONE of the following describes the current status of "A" and "B" Recirc Pumps? Assume 5 minutes have elapsed since the onset of the transient.

A. "A" Recirc Pump has tripped
"B" Recirc Pump has tripped

B. "A" Recirc Pump has tripped
"B" Recirc Pump has run back to minimum speed

C. "A" Recirc Pump has run back to minimum speed
"B" Recirc Pump has tripped

D. "A" Recirc Pump has run back to minimum speed
"B" Recirc Pump has run back to minimum speed

Question 028

Given the following conditions:

- A reactor scram has occurred.
- A-5 and A-6 have transferred to the Start-up Transformer.

Which ONE of the following describes the Drywell Cooler lineup?

A. Running coolers will trip and restart after a 45 second time delay.

B. A scram initiated load shed will occur and Drywell coolers will have to be manually started.

C. All Drywell coolers will be in service as soon as A-5 and A-6 are powered from the Startup transformer.

D. The running coolers will stay in service and the coolers in STBY will start after a 45 second time delay.

Question 029

Following a LOCA, RHR is being aligned for torus cooling and torus sprays in accordance with PNPS 2.2.19.5, "RHR Modes of Operation During Transients". When attempting to open MO-1001-37A, Loop A Torus Spray Valve, the valve fails to open.

How does this failure affect the remaining torus spray capability and the ability of torus cooling to control torus temperature?

Assume all other RHR components function as designed.

A. Maximum torus spray capability can still be established.
Maximum torus cooling capability can still be established.

B. ONLY partial torus spray capability can be established.
Maximum torus cooling capability can still be established.

C. ONLY partial torus spray capability can be established.
ONLY partial torus cooling capability can be established.

D. Maximum torus spray capability can still be established.
ONLY partial torus cooling capability can still be established.

Question 030

Which ONE of the following would cause a Control Rod Withdrawal Block?

A. Refuel Platform monorail mounted hoist loaded AND the Refueling Platform over the spent fuel pool AND the Reactor Mode Switch in Startup.

B. Refuel Platform monorail mounted hoist loaded AND the Refueling Platform over the core AND the Reactor Mode Switch in Refuel.

C. One control rod at position 48 AND a different control rod selected for withdrawal AND the Reactor Mode Switch in Startup.

D. One control rod at position 48 AND the Refueling Platform over the core AND Reactor Mode Switch in Refuel.

Question 031

With the plant operating at 100% power, operators are placing a condensate demineralizer in service.

Which ONE of the following indications would indicate resin intrusion into the reactor?

A significant increase in Reactor Water Cleanup ...

A. inlet pH and a decrease in conductivity.

B. inlet conductivity and a decrease in pH.

C. demineralizers dPs with lowering demineralizer flows.

D. demineralizers flows with lowering demineralizer dPs.

Question 032

The plant is operating at 100% power.

A malfunction in the Hydrogen Water Chemistry Control system (HWCCS) results in reduced oxygen injection flow.

Which ONE of the following describes where the HWCC system injects oxygen and the effects of this malfunction?

A. O_2 is injected into the offgas and condensate systems.
An increased probability of an offgas explosion.

B. O_2 is injected into the offgas and condensate systems.
An increased probability of IGSCC

C. O_2 is injected into the offgas system ONLY.
An increased probability of an offgas explosion

D. O_2 is injected into the offgas system ONLY.
An increased probability of IGSCC

Question 033

Given the following conditions:

- Reactor power is 2% with the Rx. Mode Switch in STARTUP during a reactor plant startup.
- Control rod 26-27, currently at position 12, is scheduled to be withdrawn to position 20.
- When the operator attempts to withdraw control rod 26-27 one notch, the Reactor Manual Control Timer fails such that the withdraw "bus" remains continuously energized

Which ONE of the following will terminate the rod withdraw transient?

A. Rod Worth Minimizer will insert a withdraw block when the rod withdraws past position 20.

B. Rod Block Monitor will insert a withdraw block when local power around the rod increases by 20%.

C. Reactor Manual Control will de-select the control rod.

D. APRMs will insert a withdraw block when power increases to 12%.

Question 034

A large air leak is reported on the air operator for the Stator Water Cooling (SWC) Temperature control valve. SWC Generator inlet temperature cannot be maintained within required limits.

Prior to reducing generator load, which ONE of the following describes an action that can be taken to restore SWC to within temperature limits IAW PNPS 2.4.156 "Stator Water Cooling Malfunctions"?

A. Place local SWC temperature controller TIC-2411 to Manual.

B. Isolate air to temperature control valve TCV-Y-07 and throttle CLOSED the SWC heat exchanger TBCCW outlet valves.

C. Isolate air to temperature control valve TCV-Y-07 and throttle OPEN the SWC heat exchanger TBCCW outlet valves.

D. Lower the setpoint on TBCCW Temperature Controller TIC-4161.

Question 035

PNPS is at 80% power. While adjusting the EPR setpoint to establish the required pressure for this power level a short circuit in the EPR control switch results in the EPR continuing to lower.

Assuming that the EPR setpoint continues to lower and that no operator actions are taken, the reactor transient will be terminated by which ONE of the following?

When the:

A. Reactor scrams on reactor high pressure.

B. MSIVs isolate on high steam line flow and the reactor scrams on MSIV closure.

C. MPR takes control at a slightly lower reactor pressure.

D. MSIV isolate on low steam line pressure and the reactor scrams on MSIV closure.

Question 036

Concerning the SPDS Critical Plant Variables Display:

The digital readout for "MSL RAD CAUTION" is displayed in WHITE text and surrounded by a thick YELLOW border.

This is because:

A. The SPDS calculated MSL radiation is NOT valid

B. The SPDS calculated MSL radiation level is approaching an alarm limit

C. The SPDS calculated MSL radiation level has been successfully validated

D. The SPDS calculated MSL radiation level has exceeded an alarm setpoint

Question 037

During an event initiated by a LOCA, EOP-02 is being executed due to a hydraulic lock on the scram discharge volumes.

The electric plant responded as designed to the transient and "A" and "B" EDGs are supplying buses A5 and A6.

Additional plant conditions are as follows:

- Reactor level is being controlled between -125 to -150 inches
- Reactor pressure is being controlled between 400 and 500 psig
- RPS and ARI have been bypassed in accordance with procedure 5.3.23.

Under these conditions which one of the following is required in order to perform repeated scrams?

A. At least ONE RPS bus must be restored
At least ONE CRD pump must be restored

B. BOTH RPS buses must be restored
At least ONE CRD pump must be restored

C. At least ONE RPS bus must be restored
A CRD pump is NOT required

D. BOTH RPS buses must be restored
A CRD pump is NOT required

Question 038

Control rod 30-23 is being withdrawn from position 24 to 48 using Notch Out Override. When the operator releases the switches the following indications are received:

- Rod Drift alarm (905L-A3) annunciates;
- Rod Drift Light for rod 30-23 illuminates;
- Rod Full Out Light for rod 30-23 illuminates;
- Black-black indication for the selected rod on the Four Rod Display;
- No other alarms have annunciated.

Which ONE of the following is consistent with these indications?

A. Control rod 30-23 is uncoupled.

B. Reed switch for position 48 has failed open.

C. Control rod 30-23 is drifting.

D. Reed switch for position 48 has failed closed.

Question 039

Which ONE of the following is the AOP 2.4.29, Stuck Open Safety Relief Valve, Suppression Pool Temperature requirement for scramming the reactor and the bases for that setpoint.

A. 110°F, to ensure complete steam condensation following a reactor blowdown that Primary Containment pressures does not exceed 24 psig.

B. 120°F, to ensure complete steam condensation following a reactor blowdown that Primary Containment pressures does not exceed 24 psig.

C. 110°F, to ensure complete steam condensation following a Loss of Coolant Accident prior to reaching a Suppression Pool temperature of 170°F.

D. 120°F, to ensure complete steam condensation following a Loss of Coolant Accident prior to reaching a Suppression Pool temperature of 170°F.

Question 040

The plant is in Cold Shutdown, twenty-four hours after shutdown from an extended high power run, with the following conditions:

- B Residual Heat Removal (RHR) pump is operating in the Shutdown Cooling Mode.
- Reactor Coolant Temperature is 185°F on a very slow downward trend.
- No Reactor Recirculation pumps are in service.
- Reactor water level is being maintained at +30 inches.
- MSIVs are shut.

Which ONE of the following describes the Reactor Coolant Temperature response if the B RHR pump trips? Assume no operator action is taken.

Coolant temperature will...

A. remain constant as natural circulation occurs between the reactor vessel and the RHR heat exchanger.

B. increase throughout the reactor until bulk boiling occurs, with reactor pressure steady at atmospheric pressure.

C. increase throughout the reactor until bulk boiling occurs, with reactor pressure rising above atmospheric pressure.

D. stratify in the reactor vessel with temperatures increasing in the upper areas until boiling occurs, and reactor pressure increases above atmospheric pressure.

Question 041

A fire occurs in the Cable Spreading Room.

- The installed fire protection system automatically actuates.
- The room must be entered to determine if the fire has been extinguished.

(1) What is the classification of the fire that is expected in this area?

AND

(2) What safety hazard, from the automatic system actuation, shall be considered prior to entering the Cable Spreading Room?

A. (1) Class C
(2) Suffocation from oxygen depletion due to the discharge of CO_2 in the area

B. (1) Class B
(2) Suffocation from oxygen depletion due to the discharge of halon in the area

C. (1) Class C
(2) Suffocation from oxygen depletion due to the discharge of halon in the area

D. (1) Class B
(2) Suffocation from oxygen depletion due to the discharge of CO_2 in the area

Question 042

With the unit operating at power the following conditions exist:

- ONE of the RPS scram solenoid group lights on panel 905 is OUT.
- The light is associated with RPS system B.
- The problem is not due to a burnt out light bulb.

Which of the following describes the immediate effect on plant operation should APRM "C" suddenly fail upscale?

A. All control rods will immediately insert.

B. Approximately one-half of the control rods will immediately insert.

C. Approximately one-quarter of the control rods will immediately insert.

D. None of the control rods will insert.

Question 043

The plant is operating at 80% power when the following events occur:

- A total loss of Stator Cooling occurs
- The Turbine Generator responds as designed.

Which of the following is the response of the Turbine Control Valves (TCVs), Turbine Bypass Valves (BPV) and the Reactor Protection System (RPS)?

(Assume NO operator actions)

A. TCVs throttle close, BPVs throttle open and RPS trips.

B. TCVs fast close, BPVs throttle open RPS does NOT trip.

C. TCVs throttle close, BPVs throttle open and RPS does NOT trip.

D. TCVs fast close, BPVs do NOT open and RPS trips.

Question 044

Plant conditions are as follows:

- 100% power
- Core Flow is 58 MLbm/hr

The feedwater flow signal to the Recirculation Pump controls is lost causing a runback of both reactor recirculation pumps.

WHICH ONE of the following is the approximate reactor power one minute later based on automatic actions and the above conditions?

A. 72%

B. 60%

C. 55%

D. 51%

Question 045

While performing a fuel bundle transfer from the Spent Fuel Pool to the Reactor Vessel through the cattle chute, the following alarms are received:

- C904LC-C7, Refuel Floor Rad Hi
- C904LC-A4, REFL FLR Vent RAD CHAN A Hi
- C904LC-B4, REFL FLR Vent RAD CHAN B Hi

A control room operator reports that the "Refuel Floor Rad Hi" alarm is due to the area radiation monitor for the Spent Fuel Pool Area being offscale high.

In accordance with PNPS 5.4.3, Refueling Floor High Radiation, what actions are immediately required and the reason for those actions?

A. Contact the Radiation Protection and inform them of the alarm. Only evacuate the refuel floor if high radiation is confirmed to prevent the potential spread of contamination from the Refueling Floor.

B. Lower the bundle into the nearest suitable location and evacuate the refuel floor to prevent possible overexposure from fission products released from the bundle.

C. Contact the Radiation Protection and direct RP to confirm control room habitability to prevent internal contamination to control room personnel from fission products released from the bundle.

D. Enter EOP-04, Secondary Containment Control and evacuate the Reactor Building to prevent internal contamination from fission products released from the bundle.

Question 046

In accordance with AOP-2.4.16, Distribution Alignment Electrical System Malfunctions, the timing of manual transfer from "A" EDG to the SUT feeder is critical.

The manual transfer must be completed after 1 second and before 4 seconds from the opening of the "A" EDG output breaker.

Which of the following is the reason for this restriction?

A. 1 second allows B6 to transfer. 4 seconds prevents the SDT feeder breaker from closing on the A5

B. 1 second ensures a dead bus transfer. 4 seconds prevents the SDT feeder breaker from closing on the A5

C. 1 second ensures that the SUT UV relay is not actuated. 4 seconds prevents EDG breaker reclosure onto A5.

D. 1 second ensures a dead bus transfer. 4 seconds prevents EDG breaker reclosure onto A5.

Question 047

The plant is operating at 100% power with all systems operable when the following alarm is received:

- "BACKUP DIESEL COMPRESSOR RUNNING" - C2R-D4

This alarm indicates that the air header has decreased to __(1)___ and that the Backup Diesel Compressor will continue to run until __(2)___.

A. (1) 102 psig
(2) It is manually shutdown.

B. (1) 102 psig
(2) It auto shuts down at 110 psig.

C. (1) 90 psig
(2) It is manually shutdown.

D. (1) 90 psig
(2) It auto shuts down at 110 psig.

Question 048

PNPS is at rated conditions when a complete loss of 125 VDC bus D-16 occurs. While attempting to recover the DC bus the "B" recirc loop ruptures. The event is compounded by a complete loss of offsite power.

Which ONE of the following describes the response of the RHR and Core Spray systems five minutes later? Assume no operator action.

A. The "B" Core Spray pump is the only pump injecting.

B. The "B" Core Spray Pump is injecting.
The "B" and "D" RHR pumps are running but injecting into the "B" Recirc Loop.
"A" side ECCS pumps are de-energized.

C. The "B" Core Spray Pump is injecting.
All RHR pumps are injecting.
"A" Core Spray pump is de-energized.

D. The "B" Core Spray Pump is injecting.
The "B" and "D" RHR pumps are running and injecting into the "A" Recirc Loop.
"A" side ECCS pumps are de-energized.

Question 049

A LPCI initiation has just occurred. Torus/drywell spray and torus cooling valves are all closed. The fuel zone instruments indicate water level at -170 inches.

Select the minimum conditions required to open the torus/drywell spray valves (MO-23, 26, and 37)

A. The LPCI OVERRIDE control switch (knurled knob) must be placed in MANUAL OVERRIDE.

B. The LPCI OVERRIDE control switch (knurled knob) must be placed in MANUAL OVERRIDE and drywell pressure must be >1.8 psig.

C. The RPV LEVEL OVERRIDE (keylock switch) must be turned to OVERRIDE concurrently with drywell pressure >1.8 psig.

D. The RPV LEVEL OVERRIDE (keylock switch) must be turned to OVERRIDE. The LPCI OVERRIDE control switch (knurled knob) must be placed in MANUAL OVERRIDE and drywell pressure must be >1.8 psig.

Question 050

The plant is at 100% power when a small fuel element failure results in rising Main Stack Process Radiation Monitor readings. During the subsequent power reduction, alarm C7L-A3, "Main Stack Dilution Fan Trip", is received. When the standby Stack Dilution Fan cannot be started, off-normal procedure 2.4.45, Loss / Reduction of Main Stack Dilution Flow is entered.

In accordance with procedure 2.4.45, which ONE of the following actions is required, and following the completion of this action what will be the impact on Main Stack PRM indication and the reason for this change?

A. Start one Standby Gas Train.
Main Stack PRM indication will lower because of the reduction in the amount of radio-nuclides going up the stack due to the lower flow.

B. Start one Standby Gas Train.
Main Stack PRM indication will increase because the radio-nuclides going up the stack have concentrated due to the lower flow.

C. Continue the power reduction to less than 50% and bypass the AOG.
Main Stack PRM indication lower because of the reduction in the amount of radio-nuclides going up the stack due to the lower flow.

D. Continue the power reduction to less than 50% and bypass the AOG.
Main Stack PRM indication will increase because the radio-nuclides going up the stack have concentrated due to the lower flow.

Question 051

The plant has entered EOP-2, RPV Control, Failure to Scram; the following conditions exist:

- "RPV pressure is 900 psig.
- "Torus water level is 120 in. and stable.
- "Torus water temperature is 180°F and rising.

IAW EOP-2 step P-4

P-4

IF torus water temperature CANNOT be maintained below Heat Capacity Temperature Limit, FIGURE 2	THEN maintain RPV pressure below Limit (exceed 100°F/hr cooldown rate if necessary)
IF ALL of following: ☐ **Boron Injection** is required ☐ main condenser is available ☐ NO indication of steam line break	THEN open MSIVs to re-establish main condenser as heat sink (bypass low RPV water level interlocks if necessary, procedure 5.3.21)

Which of the following is:

(1) the MAXIMUM Torus water temperature for this Torus Water Level and RPV pressure AND

(2) the MAXIMUM RPV pressure permitted for THESE conditions?

A. (1) 167°F
(2) <690 psig

B. (1) 167°F
(2) <760 psig

C. (1) 173°F
(2) <690 psig

D. (1) 173°F
(2) <760 psig

Question 052

During ATWS conditions actions of EOP-02, RPV Control, Failure to Scram are being taken.

Which ONE of the following conditions will allow exiting of EOP-02 and re-entry into EOP-01?

A. Two rods at 04, with all other rods at position 02.

B. One rod at 48, with all other rods at position 04.

C. Twelve (12) hundred gallons of boron injected AND reactor power in the source range and lowering.

D. Two rods at 48, with all other rods at 00 AND reactor power in the source range and lowering.

Question 053

PNPS is operating with the turbine control system aligned for 100% power operation when the EPR POWER control switch is placed in the "OFF" position. All systems respond as designed.

Which ONE of the following is the response of reactor power?

A. Reactor power will lower and stabilize at a slightly lower power and pressure when the MPR takes control.

B. Reactor power will rise and then stabilize at a slightly higher power and pressure when the MPR takes control.

C. Reactor power will rise slightly and be terminated when reactor pressure reaches the scram setpoint of 1060 psig.

D. Reactor power will lower slightly and be terminated when the reactor scrams on a closure of the MSIVs on low pressure.

Question 054

PNPS is operating at 100% power when the following annunciators alarm:

- C904LC-A1, DRYWELL PRESSURE HI
- C7L-A5, COOLER 205A LEAKING

No other alarms occur at this time.

Which ONE of the following is required?

A. Monitor RBCCW pressure and temperatures and if the standby RBCCW pump has NOT started, start the standby RBCCW pump.

B. Monitor Drywell temperatures, pressure and floor sump for indications of increased leakage while maximizing drywell cooling as necessary.

C. Monitor RBCCW pressure and temperatures and isolate RBCCW to the Drywell and lower reactor power to clear the Hi Drywell Press Annunciator.

D. Monitor Drywell temperatures, pressure and floor sump for indications of increased leakage and verify standby drywell cooling fans start 45 seconds after the Hi Drywell Press Annunciator.

Question 055

A fire in the main control room requires the control room be evacuated. An Equipment Operator (EO) is directed to locally operate a valve from the MCC cubicle.

What action is required to stroke the valve open and how would the EO know the valve was open?

A. Verify the breaker is ON.
Verify control power by observing position lights on the breaker front.
Depress the OPEN pushbutton on the breaker front and release the pushbutton when the GREEN light is energized.

B. Defeat the mechanical interlock and open the breaker door.
Depress the open contactor and hold the contactor closed until the breaker trips on the valve operator position or torque switch.
Close the breaker door.

C. Defeat the mechanical interlock and open the breaker door.
Connect a clamp-on ammeter to one power lead.
Depress the open contactor and hold the contactor closed until a spike above normal running current indicates that the valve has backseated.
Close the breaker door.

D. Verify the breaker is OFF.
Open the breaker door.
Connect a volt meter to verify electrical power to the breaker.
Depress the OPEN pushbutton inside the cubicle until the breaker trips on the valve operator position or torque switch.
Close the breaker door.

Question 056

PNPS is at rated conditions with all 4160 VAC buses being supplied from the Startup Transformer (SUT). While in this alignment, the following annunciators and indications are received:

- (C3R-A7) LINE 342 UNDERVOLTAGE
- (C3R-A8) LINE 355 UNDERVOLTAGE
- 345kV Grid voltage reading less than 342kV
- The Auto Voltage Regulator is slowly drifting lower.

In accordance with PNPS 2.4.144, Degraded Voltage which ONE of the following is required?

A. Place the Voltage Regulator Transfer Switch in MAN and then adjust 345 kV voltages using the Auto Voltage Adjuster.

B. Start both diesel generators and align to A5 and A6. Separate A5 and A6 from the SUT. When A5 and A6 are being carried by the diesels, insert a manual scram.

C. Null the Voltage Regulator Transfer Voltmeter and place the Voltage Regulator Transfer Switch in MAN and then adjust 345 kV voltages using the Manual Voltage Adjuster.

D. Start both diesel generators and align to A5 and A6. Separate A5 and A6 from the SUT. When A5 and A6 are being carried by the diesels, initiate a shutdown to less than 25% power.

Question 057

With PNPS at 100% power, a failure of the "B" RBCCW Temperature Controller results in rising loop "B" temperatures.

Which ONE of the following components will be affected?

A. "B" RCIC pump area cooler

B. "B" Recirc MG set area cooler

C. "B" CRD pump oil and bearing cooler

D. "B" Recirc MG set fluid coupling oil cooler

Question 058

Following a transient, plant conditions are:

- Drywell Pressure is 8 psig.
- NO ECCS Pumps are running.
- NO High OR Low Pressure Injection systems are running.

Which of the following is the LOWEST stable RPV Water Level (RWL) which assures Adequate Core Cooling?

A. -155" RWL

B. -165" RWL

C. -175" RWL

D. -185" RWL

Question 059

The plant is at rated conditions with a normal torus water level and with drywell to torus differential pressure at the minimum value specified by Technical Specifications. From these initial conditions, a loss of drywell cooling results in a slowly rising drywell pressure.

Regarding the response of the primary containment:

As drywell pressure rises, water level inside the Downcomers _____(1)_____ and water level outside the Downcomers _____(2)_____.

A. (1) Lowers and continues to lower as long as drywell pressure is rising
(2) Rises and continues to rise as long as drywell pressure is rising

B. (1) Lowers but eventually stabilizes
(2) Rises but eventually stabilizes

C. (1) Lowers and continues to lower as long as drywell pressure is rising
(2) Lowers and continues to lower as long as drywell pressure is rising

D. (1) Lowers but eventually stabilizes
(2) Lowers but eventually stabilizes

Question 060

A LOCA has occurred and venting the containment in accordance with PNPS 5.4.6, is required per EOP-03.

In accordance with PNPS 5.4.6 venting from the torus is preferred to ___ (1) ___ and is allowed UNTIL torus water level EXCEEDS __ (2) __.

A. (1) provide more controlled vent rate
(2) 180 inches

B. (1) provide more controlled vent rate
(2) 300 inches

C. (1) obtain the benefits of suppression pool scrubbing
(2) 180 inches

D. (1) obtain the benefits of suppression pool scrubbing
(2) 300 inches

Question 061

PNPS is starting up following a refueling outage. An operator determines that Reactor Building differential pressure on Panel C-61 is -0.40 inches of water.

Which ONE of the following Reactor Building Ventilation System lineups is the reason for this differential pressure?

A. The Reactor Building Ventilation System has tripped and the Standby Gas Treatment system has failed to start.

B. ONLY the Reactor Building Exhaust fans tripped.

C. The Reactor Building Supply Fans inlet vanes are closed in MANUAL while the Exhaust Fans inlet vanes are open in MANUAL.

D. The Reactor Building Supply Fans inlet vanes are open in MANUAL while the Exhaust Fans inlet vanes are closed in MANUAL.

Question 062

During a shutdown the following conditions exist:

- Reactor power is 20%
- Turbine first stage pressure is 100 psig
- Off-Gas flow is rising due to a Main Condenser air leak
- Condenser vacuum is 21 inches and degrading

Assuming no operator action the reactor will scram due to:

A. Turbine Stop Valve Closure.

B. Control Valve Fast Closure.

C. Reactor High Pressure.

D. Reactor High Power.

Question 063

The plant is at full power when drywell temperature is observed to have risen from 110 degrees to 140 degrees.

Other containment trends are as follows:

- Drywell pressure has risen from 1.3 psig to 1.9 psig.
- Drywell Humidity has lowered from 12% to 4%.

Which ONE of the following is consistent with these indications?

A. Reduction in RBCCW flow to the drywell.

B. Small main steam leak in the drywell.

C. Small feed line leak in the drywell.

D. SRV leaking.

Question 064

A fire has occurred in the Control Room which required entry into PNPS 2.4.143, Shutdown from Outside the Control Room. As the RO you have been directed to monitor and maintain RPV pressure utilizing RCIC from the alternate shutdown panel.

With RCIC aligned for pressure control, RPV water level is slowly rising and has just exceeded +40 inches. If RPV level continues to rise which one of the following is directed by PNPS 2.4.143?

A. Verify automatic RCIC shutdown when RPV level exceeds +45 inches. Place HPCI in service for pressure control.

B. Close the CRD Charging Water Isolation valve, 301-HO-25 and if necessary secure the CRD Pump to terminate injection from CRD.

C. Place RWCU in service locally and initiate a RWCU letdown to Radwaste to lower RPV water level.

D. Manually secure RCIC when RPV level exceeds +45 inches. Place HPCI in service for pressure control.

Question 065

A Reactor startup is in progress. Plant parameters are:

- Reactor power 18%
- Reactor Pressure 947 psig
- NR Water Level 28 inches
- Main Generator Output 89 MWe

At time:

00:00 CRD PUMP 'A' TRIP, (C905R-A5), alarms
CHARGING WTR PRESSURE LO, (C905R-G5), alarms

00:05 ACCUMULATOR TROUBLE, (C905R-F6), alarms
The accumulator trouble light is illuminated for fully withdrawn control rod 26-19

00:08 A second accumulator trouble light is illuminated. This one for fully withdrawn control rod 26-35.

00:15 A third accumulator trouble light is illuminated. This one for partially withdrawn control rod 30-19.

00:30 'B' CRD Pump is placed in service and all alarms clear.

The reactor should have been scrammed at time:

A. 00:05 when the first accumulator trouble alarm was received

B. 00:08 when the second accumulator trouble alarm was received.

C. 00:15 when accumulator trouble alarms were received for adjacent control rods.

D. 00:25 when 20 minutes have elapsed following receipt of the first accumulator trouble alarm.

Question 066

While reviewing the eSOMS narrative log prior to turnover, the off-going BOP operator determines that the RO made an incorrect log entry two hours earlier, resulting in an incorrect status of equipment operability.

In accordance with 1.3.34, Conduct of Operations which ONE of the following describes the requirement for correcting this error prior to shift turnover?

A. The BOP may delete the original entry and replace it with the correct information, because shift turnover has not yet occurred.

B. The BOP may make an annotation against the incorrect entry, but any deletions or other changes must be made by the RO making the entry or the SM.

C. Anyone may make an annotation against the entry, but only the SM may make changes to the incorrect log entry.

D. Only the CRS or SM may make annotations or changes to the incorrect log entry.

Question 067

The plant is refueling. Fuel is being moved within the reactor core.

Which ONE of the following describes restrictions placed on the activities in progress?

Two individuals must verify each fuel movement; ONE must be at least a licensed...

A. RO; the ORC switch must be closed for ANY movement of the refueling mast.

B. RO; the ORC switch must be closed for movement of the refueling mast while handling fuel bundles ONLY.

C. SRO; the ORC switch must be closed for ANY movement of the refueling mast.

D. SRO; the ORC switch must be closed for movement of the refueling mast while handling fuel bundles ONLY.

Question 068

An operator is placing Caution Tags on two different components. One component already has a Test & Maintenance Tag applied. The other component already has a Danger Tag applied.

Which ONE of the following describes the requirements in applying the Caution Tags IAW EN-OP-102 "Protective and Caution Tagging"?

A. It is permitted to be applied to ONLY the component with the Test & Maintenance tag already applied.
A 2nd check of the tag application is required.

B. It is permitted to be applied to both components.
A 2nd check of the tag application is required.

C. It is permitted to be applied to ONLY the component with the Test & Maintenance tag already applied.
A 2nd check of the tag application is NOT required.

D. It is permitted to be applied to both components.
A 2nd check of the tag application is NOT required.

Question 069

The plant is at rated conditions with all equipment operable. RHR Loop "A" is then placed in torus cooling in preparation for a surveillance.

Which ONE of the following Technical Specification LCOs is required?

The LCO for _____ being inoperable.

A. loop "A" of Torus Spray

B. loop "A" of Torus Cooling

C. loop "A" of Drywell Spray

D. LPCI

Question 070

The Off-Gas Stack Isolation PRM Channel Selector Switch is moved from the Post Treat Position (position 1) to the Pre-Treat Position (position 2).

Which ONE of the following complete the statements below?

Radiation Monitors at the discharge of the SJAEs provide ____(1)____.

The main steam radiation monitors provide _____ (2)____ on main steam line high radiation levels.

A. (1) an isolation signal for the stack isolation valve AO-3751
(2) a mechanical vacuum pump seal water pump trip

B. (1) a reactor building isolation signal
(2) an isolation signal for the stack isolation valve AO-3751

C. (1) an isolation signal to the main condenser vapor valves
(2) a mechanical vacuum pump seal water pump trip

D. (1) an isolation signal for the stack isolation valve AO-3751
(2) an isolation signal to the main condenser vapor valves

Question 071

You have been directed to locally verify valve alignments that require entry to a Locked High Radiation Area. NO component manipulation is required.

Which ONE of the following describes the radiological controls required for this task?

A. General RWP required; Pre-Job Briefing required.

B. General RWP required; Pre-Job Briefing NOT required.

C. Specific RWP required; Pre-Job Briefing required.

D. Specific RWP required; Pre-Job Briefing NOT required.

Question 072

During a Site Area Emergency which one of the following personnel man the ENS - NRC Emergency Notification System.

A. An off-shift qualified operator called to the Control Room.

B. An on-shift qualified operator on watch in the Control Room.

C. An off-shift operator called to the Off-site Emergency Operations Facility.

D. An on-shift operator familiar with the event dispatched to the Off-site Emergency Operations Center.

Question 073

Which ONE of the following describes ONLY instrumentation available to accurately provide for post accident indication on panels C170 and C171?

A. Reactor Water Level Normal Range
Reactor Vessel Differential Pressure

B. Reactor Water Level Fuel Zone Range
Torus Water Level

C. Torus Water Level
Feedwater Control Narrow Range Level

D. Reactor Water Level Fuel Zone Range
Reactor Vessel Differential Pressure

Question 074

Given the following conditions:

- The plant is starting up per PNPS 2.1.1 with reactor power at 50% and core flow at 65 Mlbm/hr.
- A transient then causes feedwater temperature to lower by 10 degrees F.
- Reactor power stabilizes at 55%.

In taking the immediate action of 2.4.150, you would lower core flow until either _____ (1) _____ or until reactor power reaches _____ (2) _____.

A. (1) Core flow reaches 43 Mlbm/hr
(2) 30%

B. (1) Core flow reaches 43 Mlbm/hr
(2) 25%

C. (1) Reactor Recirc Pumps reach minimum speed
(2) 30%

D. (1) Reactor Recirc Pumps reach minimum speed
(2) 25%

Question 075

A General Emergency exists.

A piece of equipment required for mitigation of the accident must be operated locally in a radiation field of 60 Rem per hour. There is NO immediate danger to the public.

A 52 year old worker volunteers to perform the required manipulation. He has 0 mrem accumulated dose for this calendar year.

Which ONE of the following describes the (1) amount of time spent in the area until the volunteer's annual TEDE limit is reached, and (2) the MAXIMUM dose he is authorized to receive to perform this operation?

A. (1) Three minutes
(2) 10 Rem

B. (1) Three minutes
(2) 25 Rem

C. (1) Five minutes
(2) 10 Rem

D. (1) Five minutes
(2) 25 Rem

Site-Specific Written Examination
Pilgrim
Reactor Operator
Answer Key

1.	C	26.	D	51.	D
2.	B	27.	C	52.	A
3.	C	28.	D	53.	B
4.	B	29.	A	54.	B
5.	D	30.	B	55.	C
6.	A	31.	B	56.	C
7.	C	32.	A	57.	C
8.	A	33.	C	58.	B
9.	C	34.	B	59.	B
10.	D	35.	D	60.	D
11.	B	36.	B	61.	C
12.	B	37.	A	62.	C
13.	C	38.	B	63.	A
14.	B	39.	C	64.	B
15.	D	40.	D	65.	A
16.	C	41.	C	66.	B
17.	B	42.	C	67.	D
18.	A	43.	A	68.	D
19.	B	44.	B	69.	D
20.	D	45.	B	70.	A
21.	B	46.	D	71.	C
22.	B	47.	C	72.	A & D
23.	C	48.	D	73.	B
24.	B	49.	D	74.	D
25.	C	50.	B	75.	C & D

U.S. Nuclear Regulatory Commission

Site-Specific SRO Written Examination

Applicant Information			
Name:			
Date:	March 20, 2009	Facility/Unit:	Pilgrim
Region:	I	Reactor Type:	GE
Start Time:		Finish Time:	

Instructions

Use the answer sheets provided to document your answers. Staple this cover sheet on top of the answer sheets. To pass the examination you must achieve a final grade of at least 80.00 percent overall, with a 70.00 percent or better on the SRO-only items if given in conjunction with the RO exam; SRO-only exams given alone require a final grade of 80.00 percent to pass. You have 8 hours to complete the combined examination, and 3 hours if you are only taking the SRO portion.

Applicant Certification

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

_____
Applicant's Signature

Results		
RO/SRO-Only/Total Examination Values	_____ / _____ / _____	Points
Applicant's Score	_____ / _____ / _____	Points
Applicant's Grade	_____ / _____ / _____	Percent

1.	A	B	C	D
2.	A	B	C	D
3.	A	B	C	D
4.	A	B	C	D
5.	A	B	C	D
6.	A	B	C	D
7.	A	B	C	D
8.	A	B	C	D
9.	A	B	C	D
10.	A	B	C	D
11.	A	B	C	D
12.	A	B	C	D
13.	A	B	C	D
14.	A	B	C	D
15.	A	B	C	D
16.	A	B	C	D
17.	A	B	C	D
18.	A	B	C	D
19.	A	B	C	D
20.	A	B	C	D
21.	A	B	C	D
22.	A	B	C	D
23.	A	B	C	D
24.	A	B	C	D
25.	A	B	C	D
26.	A	B	C	D
27.	A	B	C	D
28.	A	B	C	D
29.	A	B	C	D
30.	A	B	C	D
31.	A	B	C	D
32.	A	B	C	D
33.	A	B	C	D
34.	A	B	C	D
35.	A	B	C	D
36.	A	B	C	D
37.	A	B	C	D
38.	A	B	C	D
39.	A	B	C	D
40.	A	B	C	D
41.	A	B	C	D
42.	A	B	C	D
43.	A	B	C	D
44.	A	B	C	D
45.	A	B	C	D
46.	A	B	C	D
47.	A	B	C	D
48.	A	B	C	D
49.	A	B	C	D
50.	A	B	C	D

51.	A	B	C	D
52.	A	B	C	D
53.	A	B	C	D
54.	A	B	C	D
55.	A	B	C	D
56.	A	B	C	D
57.	A	B	C	D
58.	A	B	C	D
59.	A	B	C	D
60.	A	B	C	D
61.	A	B	C	D
62.	A	B	C	D
63.	A	B	C	D
64.	A	B	C	D
65.	A	B	C	D
66.	A	B	C	D
67.	A	B	C	D
68.	A	B	C	D
69.	A	B	C	D
70.	A	B	C	D
71.	A	B	C	D
72.	A	B	C	D
73.	A	B	C	D
74.	A	B	C	D
75.	A	B	C	D

76.	A	B	C	D
77.	A	B	C	D
78.	A	B	C	D
79.	A	B	C	D
80.	A	B	C	D
81.	A	B	C	D
82.	A	B	C	D
83.	A	B	C	D
84.	A	B	C	D
85.	A	B	C	D
86.	A	B	C	D
87.	A	B	C	D
88.	A	B	C	D
89.	A	B	C	D
90.	A	B	C	D
91.	A	B	C	D
92.	A	B	C	D
93.	A	B	C	D
94.	A	B	C	D
95.	A	B	C	D
96.	A	B	C	D
97.	A	B	C	D
98.	A	B	C	D
99.	A	B	C	D
100.	A	B	C	D

Question 001

4160 VAC system bus A-5 is being powered from the SUT. All other plant systems are operable and in their normal alignment.

Then 4160 VAC breaker A504 (Bus A-5 Startup Transformer Feeder) trips due to a breaker failure.

Which ONE of the following describes the effect on Bus A-5?

A. The "A" EDG output breaker will close onto the bus in 10 seconds.

B. The bus will remain de-energized.

C. The shutdown transformer feeder breaker will close onto the bus in 12 seconds.

D. The shutdown transformer feeder breaker will immediately close onto the bus.

Question 002

With the reactor mode switch in Startup, which one of the following conditions will result in a full automatic scram?

A. Hi-Hi trip on SRM "A" and INOP trip on SRM "C" with ALL shorting links installed.

B. Hi-Hi trip on SRM "A" with ALL shorting links removed.

C. INOP trip on SRM "C" with ALL shorting links installed.

D. Downscale trip on SRM "A" and Downscale trip on SRM "B" with ALL shorting links removed.

Question 003

Which ONE of the following describes the relationship between HPCI and its power supplies?

A. ONLY HPCI initiation logic is powered directly from 125 VDC.

B. ONLY HPCI isolation logic is powered directly from 125 VDC.

C. HPCI initiation & isolation logic are powered directly from 125 VDC.

D. HPCI initiation & isolation logic are powered directly from a 120 VAC inverter.

Question 004

Which ONE of the following describes the RCIC system response, if any, if a loss of D7 occurs, and then reactor water level lowers to –47"?

A. RCIC will automatically start and inject into the reactor.

B. RCIC will not automatically start and inject, and cannot be aligned for injection from the control room.

C. RCIC will automatically start and inject but the RCIC flow control must be controlled in MANUAL.

D. RCIC will not automatically start but can be manually started from the control room.

Question 005

With the plant operating at power, a loss of Panel Y-2 occurs. The plant is manually scrammed.

Which ONE of the following describes the affect of this power loss on the IRM system?

A. The ability to monitor IRM levels on C905 and on the back panels will be lost.
The IRM detector drive control relays will not function.

B. The ability to monitor IRM levels on C905 and on the back panels will be lost.
The IRM detector drive control relays will remain functional.

C. The ability to monitor IRM levels on C905 will be lost. IRM levels can still be determined on the back panels.
The IRM detector drive control relays will not function.

D. The ability to monitor IRM levels on C905 will be lost. IRM levels can still be determined on the back panels.
The IRM detector drive control relays will remain functional.

Question 006

A power ascension with control rods is in progress. Current reactor power is 52% and a center control rod is being withdrawn. During the rod withdraw, APRM channel "B" fails downscale.

Without any operator actions, which one of the following statements describes the response of the Rod Block Monitoring System?

A. An automatic bypass of RBM channel "B" occurs.

B. A RBM Downscale trip is generated.

C. A RBM INOP trip is generated.

D. The reference APRM signal to RBM "B" automatically shifts to APRM "D"

Question 007

The plant is at full power with a normal electric plant configuration.

Regarding the Vital 120 VAC system Y-2, which ONE of the following will result in Y-2's Automatic Bus Transfer (ABT) shifting to the backup power supply?

A. Loss of B-6 solely.

B. Loss of D-10 solely.

C. Loss of B-6 AND D-10.

D. Loss of B-6 AND B-15.

Question 008

RHR pump "A" is aligned in the Shutdown Cooling Mode of operation. The RHR inboard injection valve (MO-29A) and outboard injection valve (MO-28A) are full open. Then, reactor water level is inadvertently lowered below +12 inches.

Which ONE of the following describes the response of the RHR system? (assume no operator action)

A. "A" RHR pump trips.
MO-29A closes, and will remain closed even if reactor level continues to drop below -46 inches.

B. "A" RHR pump trips.
MO-29A closes but will automatically reopen if reactor level continues to drop below -46 inches.

C. "A" RHR pump will be operating on minimum flow.
MO-29A closes, and will remain closed even if reactor level continues to drop below -46 inches.

D. "A" RHR pump will be operating on minimum flow.
MO-29A closes but will automatically reopen if reactor level continues to drop below -46 inches.

Question 009

During rated power operation of Pilgrim, a loss of 125 VDC panel D-6 occurs, which results in a reactor scram.

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

A. The main turbine will trip automatically, but the hood spray valve will not open.

B. The main turbine can be tripped from Control Room Panel C-2 by using the Master Trip Pushbuttons, but Turbine Supervisory indications and alarms will be lost.

C. The main turbine can only be manually tripped from the Front Standard, but the EPR will still have control power.

D. The Main turbine can be tripped from Control Room Panel C-2 by using the Vacuum Trip #2 Pushbutton and the main turbine turning gear will still have control power.

Question 010

The following plant conditions exist:

- A major Loss of Coolant Accident has occurred and the RPV is depressurized.
- All control rods are fully inserted.
- Both Core Spray pumps are injecting into the reactor vessel at 4000 gpm each
- Reactor water level is -130 inches and rising.
- "A" and "B" RHR pumps are aligned for containment cooling.
- "C" and "D" RHR pumps are secured.

An operator subsequently notes that Core Spray System flow and pump amps begin to fluctuate significantly.

Which ONE of the following describes the condition of the Core Spray pumps, including guidance for continued operation?

They are...

A. running out but should not be secured since adequate core cooling does not exist.

B. running out and may be secured since adequate core cooling can be maintained.

C. cavitating but should not be secured since adequate core cooling does not exist.

D. cavitating and may be secured since adequate core cooling can be maintained.

Question 011

The plant is operating at 96%. The Reactor Vessel Steam Dome Pressure - High Trip Unit (PIS-263-51A) for Reactor Protection System (RPS) Channel A2 has failed high.

Which ONE of the following describes the affect of this failure on RPS?

A. A full reactor scram would occur

B. A ½ scram would occur on the A Channel of RPS.

C. A ½ scram would occur on the B Channel of RPS.

D. One half the logic for a half scram is satisfied but no RPS actuations occur.

Question 012

A loss of bus D-4 occurs. Which ONE of the following describes the effect on the Diesel Generator 'A'?

If running, the Diesel Generator 'A' _(1)_ and if not running, the diesel _(2)_.

A. (1) will trip under all trip conditions
(2) cannot be started from the Control Room but will auto start

B. (1) will only trip on mechanical overspeed
(2) will not respond to an auto start signal and cannot be started from the Control Room

C. (1) cannot be tripped from the Control Room
(2) cannot be started from the Control Room but will auto start if a start signal is generated

D. (1) can be tripped from the Control Room and will trip on mechanical overspeed
(2) will not respond to an auto start signal but can be manually started from the Control Room

Question 013

The plant has experienced a failure to SCRAM.

Upon direction of the CRS, the 905 Operator initiates SBLC by taking the Standby Liquid Control System initiation control switch to position "A".

After a few minutes, the Operator observes the following indications:

- Reactor power is 13% and steady
- "SQUIB VALVE CONTINUITY FAILURE" annunciator is in alarm
- The Amber continuity lamp for "A" squib is extinguished
- The SBLC tank level is 4300 gallons and steady
- The "A" SBLC pump discharge pressure is 1425 psig and steady
- The red indicating lamp for "A" SBLC pump is lit

Which ONE of the following describes the status of the SBLC system?

A. The SBLC system is operating properly.

B. The SBLC tank level indicator has failed.

C. The "A" squib valve has fired, but it has failed to open.

D. The "A" SBLC pump suction is blocked.

Question 014

SRVs are being used for pressure control during a plant event.

They are opened in a preferred sequence in order to....

A. prevent SRV solenoid valve failure.

B. evenly distribute heat around the torus.

C. prevent the overheating of any one SRV tailpipe.

D. minimize the possibility of SRV T-quencher failure.

Question 015

PNPS is at full power with a normal configuration on the RBCCW and SSW systems when the "A" RBCCW/SSW Heat Exchanger begins to foul due to a seaweed intrusion.

Which ONE of the following describes:

(1) The response of RBCCW Loop "A" TCV-3836 to the fouling AND

(2) The Operator actions required to restore RBCCW temperatures in accordance with PNPS 2.4.42, Loss Of One Salt Service Water Loop?

A. (1) RBCCW Loop "A" Temperature Controller Valve TV-3836 will OPEN
(2) Start an additional RBCCW pump in the "A" Loop

B. (1) RBCCW Loop "A" Temperature Controller Valve TV-3836 will CLOSE
(2) Start an additional RBCCW pump in the "A" Loop

C. (1) RBCCW Loop "A" Temperature Controller Valve TV-3836 will OPEN
(2) Raise SSW flow to "A" RBCCW/SSW Heat Exchanger

D. (1) RBCCW Loop "A" Temperature Controller Valve TV-3836 will CLOSE
(2) Raise SSW flow to "A" RBCCW/SSW Heat Exchanger

Question 016

A plant event occurred and all equipment responded as designed. Plant parameters responded as follows.

- RPV water level lowered to -39 inches and has since recovered to +20 inches.
- Drywell Pressure has increased to 5.0 psig and has since lowered to 2.7 psig.

Which ONE of the following contains ALL the actions necessary to reopen the H2/O2 isolation valves on panel C904?

Place all control switches to the CLOSED position and...

A. Reset the isolation using the PCIS Group 2, 3, 6 ISOL reset switch on C905.
Reopen the valves.

B. Reset the isolation using the PCIS Group 2, 3, 6 ISOL reset switch on C905.
Position the PCIS GROUP 2 ISOL OVERRIDE RESET switch to the RESET position on C904.
Reopen the valves.

C. Position the PCIS GROUP 2 ISOL OVERRIDE RESET switch to the OVERRIDE position on C904.
Reopen the valves.

D. Reset the isolation using the PCIS Group 2, 3, 6 ISOL reset switch on C905.
Position the PCIS GROUP 2 ISOL OVERRIDE RESET switch to the OVERRIDE position on C904.
Reopen the valves.

Question 017

The instrument air system is in its normal configuration with the K-111 air compressor in Lead and the K-110 in Lag.

Which ONE of the following describes the response of the Instrument Air system following a complete loss of TBCCW?

K-111 trips on high discharge air temperature AND

A. K-110 will not start due to low cooling water flow interlock
K-117 will start and maintain instrument air pressure indefinitely.

B. K-110 will start and subsequently trip on high discharge air temperature.
K-117 will start and maintain instrument air pressure indefinitely.

C. K-110 will start and subsequently trip on high discharge air temperature.
K-117 will not start due to low cooling water flow interlock resulting in a complete loss of instrument air.

D. K-110 will start and subsequently trip on high discharge air temperature.
K-117 will then start and also trip on high discharge air temperature resulting in a complete loss of instrument air.

Question 018

A valid Reactor Building Isolation System (RBIS) signal is received.

Which ONE of the following describes sequentially how the SBGT system responds? (SBGT Train "A" is in AUTO, Train "B" is in STBY)

A. SBGT FAN "A" starts.
AO-N-99 and AO-N-106 (TRAIN "A" and TRAIN "B" INLET DMPRs) open.
When AO-N-106 is open, a limit switch starts SBGT FAN "B".

B. SBGT FAN "A" & "B" start simultaneously.
AO-N-99 and AO-N-106 (TRAIN "A" and TRAIN "B" INLET DMPRs) open.

C. SBGT FAN "A" starts.
AO-N-99 and AO-N-106 (TRAIN "A" and TRAIN "B" INLET DMPRs) open.
SBGT FAN "B" does NOT start unless a low discharge flow is sensed on the "A" Train.

D. AO-N-99 and AO-N-106 (TRAIN "A" and TRAIN "B" INLET DMPRs) open.
Once AO-N-99 and AO-N-106 are open, a limit switch starts SBGT FANS "A" & "B".

Question 019

RCIC is in operation injecting to the RPV.

Under which of the following conditions would the RCIC Turbine Trip Throttle valve indicate OPEN in the main control room?

(1) RPV Level of -46"
(2) RPV level of +45"
(3) RPV pressure of 20 psig
(4) RCIC pump suction pressure of 15" Hg vacuum

A. (3) and (4)

B. (1) and (2)

C. (1) and (3)

D. (2) and (4)

Question 020

Following a complete loss of normal feed, RPV level lowers to -46 inches. Both recirc pumps trip and the "B" recirc pump discharge valve closes (MO 202-5B). RPV level has now recovered and efforts are underway to stabilize the plant.

What actions are required to re-open the "B" recirc pump discharge valve (MO 202-5B) and restart the "B" recirc pump?

A. Depress the "B" LPCI INITIATION SIGNAL RESET pushbutton
No other action is required

B. Depress BOTH "A" and "B" LPCI INITIATION SIGNAL RESET pushbuttons
No other action is required

C. Depress the "B" LPCI INITIATION SIGNAL RESET pushbutton AND
Depress the "B" LPCI LOOP SELECT RESET pushbutton
No other action is required

D. Depress BOTH "A" and "B" LPCI LOOP SELECT RESET pushbuttons
No other action is required

Question 021

While operating at 100% power in 3-element control, one FWLC feedwater flow detector is inadvertently bypassed. (The equalizer valve on the feed flow detector was opened.)

Which ONE of the following describes the RPV level response to the above condition?

A. RPV level decreases due to an erroneously high feed flow signal.

B. RPV level increases due to an erroneously low feed flow signal.

C. RPV level remains constant due to just one feedwater flow detector being bypassed.

D. RPV level remains constant due to FWLC being level dominant.

Question 022

Which of the following conditions will cause an automatic transfer of HPCI pump suction?

(1) With HPCI suction aligned to the CST, torus level rises and continues to rise.
(2) With HPCI suction aligned to the torus, torus level lowers and continues to lower.
(3) With HPCI suction aligned to the CST, CST level lowers and continues to lower.

A. Condition (3) only

B. Conditions (1) and (3) only

C. Conditions (2) and (3) only

D. Conditions (1) and (2) only

Question 023

Which ONE the following describes the inter-relationship between the TIP system and the LPRMs?

A. The TIP system provides an axial flux profile of the reactor using 4 TIP detectors. Each TIP detector can be inserted into the dry tubes of each LPRM assembly.

B. The TIP system provides a radial flux profile of the reactor using 4 TIP detectors. Each TIP detector can be inserted into the dry tubes of each LPRM assembly.

C. The TIP system provides an axial flux profile of the core using 4 TIP detectors. Each LPRM detector is capable of being probed by a TIP. The central LPRM assembly can be probed by each of the four TIP units.

D. The TIP system provides a radial flux profile of the core using 4 TIP detectors. Each LPRM detector is capable of being probed by a TIP. The central LPRM assembly can be probed by each of the four TIP units.

Question 024

MCC B-2 is not available due to maintenance on the bus.

Then, MCC B-1 loses power.

Which answer contains THREE valves that no longer are powered?

A. SDC Outboard Isolation VLV MO-1001-47
LPCI INJ VLV, MO-1001-29A
Upper Drywell Spray VLV #1, MO-1001-23A

B. SDC Inboard Isolation VLV MO-1001-50
LPCI INJ VLV, MO-1001-29B
Upper Drywell Spray VLV #1, MO-1001-23B

C. SDC Outboard Isolation VLV MO-1001-47
LPCI INJ VLV, MO-1001-29A
LPCI INJ VLV, MO-1001-29B

D. SDC Inboard Isolation VLV MO-1001-50
LPCI INJ VLV, MO-1001-29B
Radwaste Block Valve, MO-1001-21

Question 025

During the conduct of PNPS 8.7.2.1, Measurement of Standby Gas Treatment (SBGT) Filters and Fan Capacity the "A" SBGT Train has been started and the following Perforated Plate DP (AA22) reading taken

- AA22 1.01

Using Attachment 4 from 8.7.2.1, A TRAIN SGTS PERFORATED PLATE DP (AA22) VERSUS AIR FLOW (CFM), determine if the SGT flow is acceptable and what actions are required.

In accordance with PNPS 8.7.2.1, Attachment 4 the "A" SGT flow is:

A. Acceptable, no further actions are required.

B. Acceptable but not at optimum, initiate action to have the flow raised.

C. NOT Acceptable, the flow is too low, enter the appropriate Technical Specifications.

D. NOT Acceptable, the flow is too high, enter the appropriate Technical Specifications.

Question 026

The "B" train of ADS LOGIC is INOPERABLE and being worked on. The "INHIBIT" switch for the "B" train is in the "INHIBIT" position.

The plant conditions are as follows:

- Reactor pressure 1000#
- RPV level -49"
- Drywell pressure 3 psig
- Drywell temp 156 degrees F
- RHR pump "D" is running

Which of the following describes the Automatic Depressurization System response if the above conditions have been in place for 2 minutes?

A. Only SRVs "A" and "C" will open.

B. Only SRVs "B" and "D" will open.

C. All SRVs remain closed.

D. All SRVs will open.

Question 027

PNPS was initially at 100% power when a feed line break inside the drywell resulted in a reactor scram. In addition:

- All available reactor feed pumps have tripped on low suction pressure
- Drywell pressure is 3.2 psig and rising
- RPV level lowered to -35 inches before recovering to its current value of +25 inches via HPCI injection.

Based on the information provided, which ONE of the following describes the current status of "A" and "B" Recirc Pumps? Assume 5 minutes have elapsed since the onset of the transient.

A. "A" Recirc Pump has tripped
"B" Recirc Pump has tripped

B. "A" Recirc Pump has tripped
"B" Recirc Pump has run back to minimum speed

C. "A" Recirc Pump has run back to minimum speed
"B" Recirc Pump has tripped

D. "A" Recirc Pump has run back to minimum speed
"B" Recirc Pump has run back to minimum speed

Question 028

Given the following conditions:

- A reactor scram has occurred.
- A-5 and A-6 have transferred to the Start-up Transformer.

Which ONE of the following describes the Drywell Cooler lineup?

A. Running coolers will trip and restart after a 45 second time delay.

B. A scram initiated load shed will occur and Drywell coolers will have to be manually started.

C. All Drywell coolers will be in service as soon as A-5 and A-6 are powered from the Startup transformer.

D. The running coolers will stay in service and the coolers in STBY will start after a 45 second time delay.

Question 029

Following a LOCA, RHR is being aligned for torus cooling and torus sprays in accordance with PNPS 2.2.19.5, "RHR Modes of Operation During Transients". When attempting to open MO-1001-37A, Loop A Torus Spray Valve, the valve fails to open.

How does this failure affect the remaining torus spray capability and the ability of torus cooling to control torus temperature?

Assume all other RHR components function as designed.

A. Maximum torus spray capability can still be established.
Maximum torus cooling capability can still be established.

B. ONLY partial torus spray capability can be established.
Maximum torus cooling capability can still be established.

C. ONLY partial torus spray capability can be established.
ONLY partial torus cooling capability can be established.

D. Maximum torus spray capability can still be established.
ONLY partial torus cooling capability can still be established.

Question 030

Which ONE of the following would cause a Control Rod Withdrawal Block?

A. Refuel Platform monorail mounted hoist loaded AND the Refueling Platform over the spent fuel pool AND the Reactor Mode Switch in Startup.

B. Refuel Platform monorail mounted hoist loaded AND the Refueling Platform over the core AND the Reactor Mode Switch in Refuel.

C. One control rod at position 48 AND a different control rod selected for withdrawal AND the Reactor Mode Switch in Startup.

D. One control rod at position 48 AND the Refueling Platform over the core AND Reactor Mode Switch in Refuel.

Question 031

With the plant operating at 100% power, operators are placing a condensate demineralizer in service.

Which ONE of the following indications would indicate resin intrusion into the reactor?

A significant increase in Reactor Water Cleanup ...

A. inlet pH and a decrease in conductivity.

B. inlet conductivity and a decrease in pH.

C. demineralizers dPs with lowering demineralizer flows.

D. demineralizers flows with lowering demineralizer dPs.

Question 032

The plant is operating at 100% power.

A malfunction in the Hydrogen Water Chemistry Control system (HWCCS) results in reduced oxygen injection flow.

Which ONE of the following describes where the HWCC system injects oxygen and the effects of this malfunction?

A. O_2 is injected into the offgas and condensate systems.
An increased probability of an offgas explosion.

B. O_2 is injected into the offgas and condensate systems.
An increased probability of IGSCC

C. O_2 is injected into the offgas system ONLY.
An increased probability of an offgas explosion

D. O_2 is injected into the offgas system ONLY.
An increased probability of IGSCC

Question 033

Given the following conditions:

- Reactor power is 2% with the Rx. Mode Switch in STARTUP during a reactor plant startup.
- Control rod 26-27, currently at position 12, is scheduled to be withdrawn to position 20.
- When the operator attempts to withdraw control rod 26-27 one notch, the Reactor Manual Control Timer fails such that the withdraw "bus" remains continuously energized

Which ONE of the following will terminate the rod withdraw transient?

A. Rod Worth Minimizer will insert a withdraw block when the rod withdraws past position 20.

B. Rod Block Monitor will insert a withdraw block when local power around the rod increases by 20%.

C. Reactor Manual Control will de-select the control rod.

D. APRMs will insert a withdraw block when power increases to 12%.

Question 034

A large air leak is reported on the air operator for the Stator Water Cooling (SWC) Temperature control valve. SWC Generator inlet temperature cannot be maintained within required limits.

Prior to reducing generator load, which ONE of the following describes an action that can be taken to restore SWC to within temperature limits IAW PNPS 2.4.156 "Stator Water Cooling Malfunctions"?

A. Place local SWC temperature controller TIC-2411 to Manual.

B. Isolate air to temperature control valve TCV-Y-07 and throttle CLOSED the SWC heat exchanger TBCCW outlet valves.

C. Isolate air to temperature control valve TCV-Y-07 and throttle OPEN the SWC heat exchanger TBCCW outlet valves.

D. Lower the setpoint on TBCCW Temperature Controller TIC-4161.

Question 035

PNPS is at 80% power. While adjusting the EPR setpoint to establish the required pressure for this power level a short circuit in the EPR control switch results in the EPR continuing to lower.

Assuming that the EPR setpoint continues to lower and that no operator actions are taken, the reactor transient will be terminated by which ONE of the following?

When the:

A. Reactor scrams on reactor high pressure.

B. MSIVs isolate on high steam line flow and the reactor scrams on MSIV closure.

C. MPR takes control at a slightly lower reactor pressure.

D. MSIV isolate on low steam line pressure and the reactor scrams on MSIV closure.

Question 036

Concerning the SPDS Critical Plant Variables Display:

The digital readout for "MSL RAD CAUTION" is displayed in WHITE text and surrounded by a thick YELLOW border.

This is because:

A. The SPDS calculated MSL radiation is NOT valid

B. The SPDS calculated MSL radiation level is approaching an alarm limit

C. The SPDS calculated MSL radiation level has been successfully validated

D. The SPDS calculated MSL radiation level has exceeded an alarm setpoint

Question 037

During an event initiated by a LOCA, EOP-02 is being executed due to a hydraulic lock on the scram discharge volumes.

The electric plant responded as designed to the transient and "A" and "B" EDGs are supplying buses A5 and A6.

Additional plant conditions are as follows:

- Reactor level is being controlled between -125 to -150 inches
- Reactor pressure is being controlled between 400 and 500 psig
- RPS and ARI have been bypassed in accordance with procedure 5.3.23.

Under these conditions which one of the following is required in order to perform repeated scrams?

A. At least ONE RPS bus must be restored
At least ONE CRD pump must be restored

B. BOTH RPS buses must be restored
At least ONE CRD pump must be restored

C. At least ONE RPS bus must be restored
A CRD pump is NOT required

D. BOTH RPS buses must be restored
A CRD pump is NOT required

Question 038

Control rod 30-23 is being withdrawn from position 24 to 48 using Notch Out Override. When the operator releases the switches the following indications are received:

- Rod Drift alarm (905L-A3) annunciates;
- Rod Drift Light for rod 30-23 illuminates;
- Rod Full Out Light for rod 30-23 illuminates;
- Black-black indication for the selected rod on the Four Rod Display;
- No other alarms have annunciated.

Which ONE of the following is consistent with these indications?

A. Control rod 30-23 is uncoupled.

B. Reed switch for position 48 has failed open.

C. Control rod 30-23 is drifting.

D. Reed switch for position 48 has failed closed.

Question 039

Which ONE of the following is the AOP 2.4.29, Stuck Open Safety Relief Valve, Suppression Pool Temperature requirement for scramming the reactor and the bases for that setpoint.

A. 110°F, to ensure complete steam condensation following a reactor blowdown that Primary Containment pressures does not exceed 24 psig.

B. 120°F, to ensure complete steam condensation following a reactor blowdown that Primary Containment pressures does not exceed 24 psig.

C. 110°F, to ensure complete steam condensation following a Loss of Coolant Accident prior to reaching a Suppression Pool temperature of 170°F.

D. 120°F, to ensure complete steam condensation following a Loss of Coolant Accident prior to reaching a Suppression Pool temperature of 170°F.

Question 040

The plant is in Cold Shutdown, twenty-four hours after shutdown from an extended high power run, with the following conditions:

- B Residual Heat Removal (RHR) pump is operating in the Shutdown Cooling Mode.
- Reactor Coolant Temperature is 185°F on a very slow downward trend.
- No Reactor Recirculation pumps are in service.
- Reactor water level is being maintained at +30 inches.
- MSIVs are shut.

Which ONE of the following describes the Reactor Coolant Temperature response if the B RHR pump trips? Assume no operator action is taken.

Coolant temperature will...

A. remain constant as natural circulation occurs between the reactor vessel and the RHR heat exchanger.

B. increase throughout the reactor until bulk boiling occurs, with reactor pressure steady at atmospheric pressure.

C. increase throughout the reactor until bulk boiling occurs, with reactor pressure rising above atmospheric pressure.

D. stratify in the reactor vessel with temperatures increasing in the upper areas until boiling occurs, and reactor pressure increases above atmospheric pressure.

Question 041

A fire occurs in the Cable Spreading Room.

- The installed fire protection system automatically actuates.
- The room must be entered to determine if the fire has been extinguished.

(1) What is the classification of the fire that is expected in this area?

AND

(2) What safety hazard, from the automatic system actuation, shall be considered prior to entering the Cable Spreading Room?

A. (1) Class C
(2) Suffocation from oxygen depletion due to the discharge of CO_2 in the area

B. (1) Class B
(2) Suffocation from oxygen depletion due to the discharge of halon in the area

C. (1) Class C
(2) Suffocation from oxygen depletion due to the discharge of halon in the area

D. (1) Class B
(2) Suffocation from oxygen depletion due to the discharge of CO_2 in the area

Question 042

With the unit operating at power the following conditions exist:

- ONE of the RPS scram solenoid group lights on panel 905 is OUT.
- The light is associated with RPS system B.
- The problem is not due to a burnt out light bulb.

Which of the following describes the immediate effect on plant operation should APRM "C" suddenly fail upscale?

A. All control rods will immediately insert.

B. Approximately one-half of the control rods will immediately insert.

C. Approximately one-quarter of the control rods will immediately insert.

D. None of the control rods will insert.

Question 043

The plant is operating at 80% power when the following events occur:

- A total loss of Stator Cooling occurs
- The Turbine Generator responds as designed.

Which of the following is the response of the Turbine Control Valves (TCVs), Turbine Bypass Valves (BPV) and the Reactor Protection System (RPS)?

(Assume NO operator actions)

A. TCVs throttle close, BPVs throttle open and RPS trips.

B. TCVs fast close, BPVs throttle open RPS does NOT trip.

C. TCVs throttle close, BPVs throttle open and RPS does NOT trip.

D. TCVs fast close, BPVs do NOT open and RPS trips.

Question 044

Plant conditions are as follows:

- 100% power
- Core Flow is 58 MLbm/hr

The feedwater flow signal to the Recirculation Pump controls is lost causing a runback of both reactor recirculation pumps.

WHICH ONE of the following is the approximate reactor power one minute later based on automatic actions and the above conditions?

A. 72%

B. 60%

C. 55%

D. 51%

Question 045

While performing a fuel bundle transfer from the Spent Fuel Pool to the Reactor Vessel through the cattle chute, the following alarms are received:

- C904LC-C7, Refuel Floor Rad Hi
- C904LC-A4, REFL FLR Vent RAD CHAN A Hi
- C904LC-B4, REFL FLR Vent RAD CHAN B Hi

A control room operator reports that the "Refuel Floor Rad Hi" alarm is due to the area radiation monitor for the Spent Fuel Pool Area being offscale high.

In accordance with PNPS 5.4.3, Refueling Floor High Radiation, what actions are immediately required and the reason for those actions?

A. Contact the Radiation Protection and inform them of the alarm. Only evacuate the refuel floor if high radiation is confirmed to prevent the potential spread of contamination from the Refueling Floor.

B. Lower the bundle into the nearest suitable location and evacuate the refuel floor to prevent possible overexposure from fission products released from the bundle.

C. Contact the Radiation Protection and direct RP to confirm control room habitability to prevent internal contamination to control room personnel from fission products released from the bundle.

D. Enter EOP-04, Secondary Containment Control and evacuate the Reactor Building to prevent internal contamination from fission products released from the bundle.

Question 046

In accordance with AOP-2.4.16, Distribution Alignment Electrical System Malfunctions, the timing of manual transfer from "A" EDG to the SUT feeder is critical.

The manual transfer must be completed after 1 second and before 4 seconds from the opening of the "A" EDG output breaker.

Which of the following is the reason for this restriction?

A. 1 second allows B6 to transfer. 4 seconds prevents the SDT feeder breaker from closing on the A5

B. 1 second ensures a dead bus transfer. 4 seconds prevents the SDT feeder breaker from closing on the A5

C. 1 second ensures that the SUT UV relay is not actuated. 4 seconds prevents EDG breaker reclosure onto A5.

D. 1 second ensures a dead bus transfer. 4 seconds prevents EDG breaker reclosure onto A5.

Question 047

The plant is operating at 100% power with all systems operable when the following alarm is received:

- "BACKUP DIESEL COMPRESSOR RUNNING" - C2R-D4

This alarm indicates that the air header has decreased to __(1)___ and that the Backup Diesel Compressor will continue to run until __(2)___.

A. (1) 102 psig
(2) It is manually shutdown.

B. (1) 102 psig
(2) It auto shuts down at 110 psig.

C. (1) 90 psig
(2) It is manually shutdown.

D. (1) 90 psig
(2) It auto shuts down at 110 psig.

Question 048

PNPS is at rated conditions when a complete loss of 125 VDC bus D-16 occurs. While attempting to recover the DC bus the "B" recirc loop ruptures. The event is compounded by a complete loss of offsite power.

Which ONE of the following describes the response of the RHR and Core Spray systems five minutes later? Assume no operator action.

A. The "B" Core Spray pump is the only pump injecting.

B. The "B" Core Spray Pump is injecting.
The "B" and "D" RHR pumps are running but injecting into the "B" Recirc Loop.
"A" side ECCS pumps are de-energized.

C. The "B" Core Spray Pump is injecting.
All RHR pumps are injecting.
"A" Core Spray pump is de-energized.

D. The "B" Core Spray Pump is injecting.
The "B" and "D" RHR pumps are running and injecting into the "A" Recirc Loop.
"A" side ECCS pumps are de-energized.

Question 049

A LPCI initiation has just occurred. Torus/drywell spray and torus cooling valves are all closed. The fuel zone instruments indicate water level at -170 inches.

Select the minimum conditions required to open the torus/drywell spray valves (MO-23, 26, and 37)

A. The LPCI OVERRIDE control switch (knurled knob) must be placed in MANUAL OVERRIDE.

B. The LPCI OVERRIDE control switch (knurled knob) must be placed in MANUAL OVERRIDE and drywell pressure must be >1.8 psig.

C. The RPV LEVEL OVERRIDE (keylock switch) must be turned to OVERRIDE concurrently with drywell pressure >1.8 psig.

D. The RPV LEVEL OVERRIDE (keylock switch) must be turned to OVERRIDE. The LPCI OVERRIDE control switch (knurled knob) must be placed in MANUAL OVERRIDE and drywell pressure must be >1.8 psig.

Question 050

The plant is at 100% power when a small fuel element failure results in rising Main Stack Process Radiation Monitor readings. During the subsequent power reduction, alarm C7L-A3, "Main Stack Dilution Fan Trip", is received. When the standby Stack Dilution Fan cannot be started, off-normal procedure 2.4.45, Loss / Reduction of Main Stack Dilution Flow is entered.

In accordance with procedure 2.4.45, which ONE of the following actions is required, and following the completion of this action what will be the impact on Main Stack PRM indication and the reason for this change?

A. Start one Standby Gas Train.
Main Stack PRM indication will lower because of the reduction in the amount of radio-nuclides going up the stack due to the lower flow.

B. Start one Standby Gas Train.
Main Stack PRM indication will increase because the radio-nuclides going up the stack have concentrated due to the lower flow.

C. Continue the power reduction to less than 50% and bypass the AOG.
Main Stack PRM indication lower because of the reduction in the amount of radio-nuclides going up the stack due to the lower flow.

D. Continue the power reduction to less than 50% and bypass the AOG.
Main Stack PRM indication will increase because the radio-nuclides going up the stack have concentrated due to the lower flow.

Question 051

The plant has entered EOP-2, RPV Control, Failure to Scram; the following conditions exist:

- "RPV pressure is 900 psig.
- "Torus water level is 120 in. and stable.
- "Torus water temperature is 180°F and rising.

IAW EOP-2 step P-4

P-4

IF torus water temperature CANNOT be maintained below Heat Capacity Temperature Limit, FIGURE 2	THEN maintain RPV pressure below Limit (exceed 100°F/hr cooldown rate if necessary)
IF ALL of following: ☐ **Boron Injection** is required ☐ main condenser is available ☐ NO indication of steam line break	THEN open MSIVs to re-establish main condenser as heat sink (bypass low RPV water level interlocks if necessary, procedure 5.3.21)

Which of the following is:

(1) the MAXIMUM Torus water temperature for this Torus Water Level and RPV pressure AND

(2) the MAXIMUM RPV pressure permitted for THESE conditions?

A. (1) 167°F
(2) <690 psig

B. (1) 167°F
(2) <760 psig

C. (1) 173°F
(2) <690 psig

D. (1) 173°F
(2) <760 psig

Question 052

During ATWS conditions actions of EOP-02, RPV Control, Failure to Scram are being taken.

Which ONE of the following conditions will allow exiting of EOP-02 and re-entry into EOP-01?

A. Two rods at 04, with all other rods at position 02.

B. One rod at 48, with all other rods at position 04.

C. Twelve (12) hundred gallons of boron injected AND reactor power in the source range and lowering.

D. Two rods at 48, with all other rods at 00 AND reactor power in the source range and lowering.

Question 053

PNPS is operating with the turbine control system aligned for 100% power operation when the EPR POWER control switch is placed in the "OFF" position. All systems respond as designed.

Which ONE of the following is the response of reactor power?

A. Reactor power will lower and stabilize at a slightly lower power and pressure when the MPR takes control.

B. Reactor power will rise and then stabilize at a slightly higher power and pressure when the MPR takes control.

C. Reactor power will rise slightly and be terminated when reactor pressure reaches the scram setpoint of 1060 psig.

D. Reactor power will lower slightly and be terminated when the reactor scrams on a closure of the MSIVs on low pressure.

Question 054

PNPS is operating at 100% power when the following annunciators alarm:

- C904LC-A1, DRYWELL PRESSURE HI
- C7L-A5, COOLER 205A LEAKING

No other alarms occur at this time.

Which ONE of the following is required?

A. Monitor RBCCW pressure and temperatures and if the standby RBCCW pump has NOT started, start the standby RBCCW pump.

B. Monitor Drywell temperatures, pressure and floor sump for indications of increased leakage while maximizing drywell cooling as necessary.

C. Monitor RBCCW pressure and temperatures and isolate RBCCW to the Drywell and lower reactor power to clear the Hi Drywell Press Annunciator.

D. Monitor Drywell temperatures, pressure and floor sump for indications of increased leakage and verify standby drywell cooling fans start 45 seconds after the Hi Drywell Press Annunciator.

Question 055

A fire in the main control room requires the control room be evacuated. An Equipment Operator (EO) is directed to locally operate a valve from the MCC cubicle.

What action is required to stroke the valve open and how would the EO know the valve was open?

A. Verify the breaker is ON.
Verify control power by observing position lights on the breaker front.
Depress the OPEN pushbutton on the breaker front and release the pushbutton when the GREEN light is energized.

B. Defeat the mechanical interlock and open the breaker door.
Depress the open contactor and hold the contactor closed until the breaker trips on the valve operator position or torque switch.
Close the breaker door.

C. Defeat the mechanical interlock and open the breaker door.
Connect a clamp-on ammeter to one power lead.
Depress the open contactor and hold the contactor closed until a spike above normal running current indicates that the valve has backseated.
Close the breaker door.

D. Verify the breaker is OFF.
Open the breaker door.
Connect a volt meter to verify electrical power to the breaker.
Depress the OPEN pushbutton inside the cubicle until the breaker trips on the valve operator position or torque switch.
Close the breaker door.

Question 056

PNPS is at rated conditions with all 4160 VAC buses being supplied from the Startup Transformer (SUT). While in this alignment, the following annunciators and indications are received:

- (C3R-A7) LINE 342 UNDERVOLTAGE
- (C3R-A8) LINE 355 UNDERVOLTAGE
- 345kV Grid voltage reading less than 342kV
- The Auto Voltage Regulator is slowly drifting lower.

In accordance with PNPS 2.4.144, Degraded Voltage which ONE of the following is required?

A. Place the Voltage Regulator Transfer Switch in MAN and then adjust 345 kV voltages using the Auto Voltage Adjuster.

B. Start both diesel generators and align to A5 and A6. Separate A5 and A6 from the SUT. When A5 and A6 are being carried by the diesels, insert a manual scram.

C. Null the Voltage Regulator Transfer Voltmeter and place the Voltage Regulator Transfer Switch in MAN and then adjust 345 kV voltages using the Manual Voltage Adjuster.

D. Start both diesel generators and align to A5 and A6. Separate A5 and A6 from the SUT. When A5 and A6 are being carried by the diesels, initiate a shutdown to less than 25% power.

Question 057

With PNPS at 100% power, a failure of the "B" RBCCW Temperature Controller results in rising loop "B" temperatures.

Which ONE of the following components will be affected?

A. "B" RCIC pump area cooler

B. "B" Recirc MG set area cooler

C. "B" CRD pump oil and bearing cooler

D. "B" Recirc MG set fluid coupling oil cooler

Question 058

Following a transient, plant conditions are:

- Drywell Pressure is 8 psig.
- NO ECCS Pumps are running.
- NO High OR Low Pressure Injection systems are running.

Which of the following is the LOWEST stable RPV Water Level (RWL) which assures Adequate Core Cooling?

A. -155" RWL

B. -165" RWL

C. -175" RWL

D. -185" RWL

Question 059

The plant is at rated conditions with a normal torus water level and with drywell to torus differential pressure at the minimum value specified by Technical Specifications. From these initial conditions, a loss of drywell cooling results in a slowly rising drywell pressure.

Regarding the response of the primary containment:

As drywell pressure rises, water level inside the Downcomers _____(1)_____ and water level outside the Downcomers _____(2)_____.

A. (1) Lowers and continues to lower as long as drywell pressure is rising
(2) Rises and continues to rise as long as drywell pressure is rising

B. (1) Lowers but eventually stabilizes
(2) Rises but eventually stabilizes

C. (1) Lowers and continues to lower as long as drywell pressure is rising
(2) Lowers and continues to lower as long as drywell pressure is rising

D. (1) Lowers but eventually stabilizes
(2) Lowers but eventually stabilizes

Question 060

A LOCA has occurred and venting the containment in accordance with PNPS 5.4.6, is required per EOP-03.

In accordance with PNPS 5.4.6 venting from the torus is preferred to ___ (1) ___ and is allowed UNTIL torus water level EXCEEDS __ (2) __.

A. (1) provide more controlled vent rate
(2) 180 inches

B. (1) provide more controlled vent rate
(2) 300 inches

C. (1) obtain the benefits of suppression pool scrubbing
(2) 180 inches

D. (1) obtain the benefits of suppression pool scrubbing
(2) 300 inches

Question 061

PNPS is starting up following a refueling outage. An operator determines that Reactor Building differential pressure on Panel C-61 is -0.40 inches of water.

Which ONE of the following Reactor Building Ventilation System lineups is the reason for this differential pressure?

A. The Reactor Building Ventilation System has tripped and the Standby Gas Treatment system has failed to start.

B. ONLY the Reactor Building Exhaust fans tripped.

C. The Reactor Building Supply Fans inlet vanes are closed in MANUAL while the Exhaust Fans inlet vanes are open in MANUAL.

D. The Reactor Building Supply Fans inlet vanes are open in MANUAL while the Exhaust Fans inlet vanes are closed in MANUAL.

Question 062

During a shutdown the following conditions exist:

- Reactor power is 20%
- Turbine first stage pressure is 100 psig
- Off-Gas flow is rising due to a Main Condenser air leak
- Condenser vacuum is 21 inches and degrading

Assuming no operator action the reactor will scram due to:

A. Turbine Stop Valve Closure.

B. Control Valve Fast Closure.

C. Reactor High Pressure.

D. Reactor High Power.

Question 063

The plant is at full power when drywell temperature is observed to have risen from 110 degrees to 140 degrees.

Other containment trends are as follows:

- Drywell pressure has risen from 1.3 psig to 1.9 psig.
- Drywell Humidity has lowered from 12% to 4%.

Which ONE of the following is consistent with these indications?

A. Reduction in RBCCW flow to the drywell.

B. Small main steam leak in the drywell.

C. Small feed line leak in the drywell.

D. SRV leaking.

Question 064

A fire has occurred in the Control Room which required entry into PNPS 2.4.143, Shutdown from Outside the Control Room. As the RO you have been directed to monitor and maintain RPV pressure utilizing RCIC from the alternate shutdown panel.

With RCIC aligned for pressure control, RPV water level is slowly rising and has just exceeded +40 inches. If RPV level continues to rise which one of the following is directed by PNPS 2.4.143?

A. Verify automatic RCIC shutdown when RPV level exceeds +45 inches. Place HPCI in service for pressure control.

B. Close the CRD Charging Water Isolation valve, 301-HO-25 and if necessary secure the CRD Pump to terminate injection from CRD.

C. Place RWCU in service locally and initiate a RWCU letdown to Radwaste to lower RPV water level.

D. Manually secure RCIC when RPV level exceeds +45 inches. Place HPCI in service for pressure control.

Question 065

A Reactor startup is in progress. Plant parameters are:

- Reactor power 18%
- Reactor Pressure 947 psig
- NR Water Level 28 inches
- Main Generator Output 89 MWe

At time:

00:00 CRD PUMP 'A' TRIP, (C905R-A5), alarms
CHARGING WTR PRESSURE LO, (C905R-G5), alarms

00:05 ACCUMULATOR TROUBLE, (C905R-F6), alarms
The accumulator trouble light is illuminated for fully withdrawn control rod 26-19

00:08 A second accumulator trouble light is illuminated. This one for fully withdrawn control rod 26-35.

00:15 A third accumulator trouble light is illuminated. This one for partially withdrawn control rod 30-19.

00:30 'B' CRD Pump is placed in service and all alarms clear.

The reactor should have been scrammed at time:

A. 00:05 when the first accumulator trouble alarm was received

B. 00:08 when the second accumulator trouble alarm was received.

C. 00:15 when accumulator trouble alarms were received for adjacent control rods.

D. 00:25 when 20 minutes have elapsed following receipt of the first accumulator trouble alarm.

Question 066

While reviewing the eSOMS narrative log prior to turnover, the off-going BOP operator determines that the RO made an incorrect log entry two hours earlier, resulting in an incorrect status of equipment operability.

In accordance with 1.3.34, Conduct of Operations which ONE of the following describes the requirement for correcting this error prior to shift turnover?

A. The BOP may delete the original entry and replace it with the correct information, because shift turnover has not yet occurred.

B. The BOP may make an annotation against the incorrect entry, but any deletions or other changes must be made by the RO making the entry or the SM.

C. Anyone may make an annotation against the entry, but only the SM may make changes to the incorrect log entry.

D. Only the CRS or SM may make annotations or changes to the incorrect log entry.

Question 067

The plant is refueling. Fuel is being moved within the reactor core.

Which ONE of the following describes restrictions placed on the activities in progress?

Two individuals must verify each fuel movement; ONE must be at least a licensed...

A. RO; the ORC switch must be closed for ANY movement of the refueling mast.

B. RO; the ORC switch must be closed for movement of the refueling mast while handling fuel bundles ONLY.

C. SRO; the ORC switch must be closed for ANY movement of the refueling mast.

D. SRO; the ORC switch must be closed for movement of the refueling mast while handling fuel bundles ONLY.

Question 068

An operator is placing Caution Tags on two different components. One component already has a Test & Maintenance Tag applied. The other component already has a Danger Tag applied.

Which ONE of the following describes the requirements in applying the Caution Tags IAW EN-OP-102 "Protective and Caution Tagging"?

A. It is permitted to be applied to ONLY the component with the Test & Maintenance tag already applied.
A 2nd check of the tag application is required.

B. It is permitted to be applied to both components.
A 2nd check of the tag application is required.

C. It is permitted to be applied to ONLY the component with the Test & Maintenance tag already applied.
A 2nd check of the tag application is NOT required.

D. It is permitted to be applied to both components.
A 2nd check of the tag application is NOT required.

Question 069

The plant is at rated conditions with all equipment operable. RHR Loop "A" is then placed in torus cooling in preparation for a surveillance.

Which ONE of the following Technical Specification LCOs is required?

The LCO for _____ being inoperable.

A. loop "A" of Torus Spray

B. loop "A" of Torus Cooling

C. loop "A" of Drywell Spray

D. LPCI

Question 070

The Off-Gas Stack Isolation PRM Channel Selector Switch is moved from the Post Treat Position (position 1) to the Pre-Treat Position (position 2).

Which ONE of the following complete the statements below?

Radiation Monitors at the discharge of the SJAEs provide ____(1)____.

The main steam radiation monitors provide _____ (2)____ on main steam line high radiation levels.

A. (1) an isolation signal for the stack isolation valve AO-3751
(2) a mechanical vacuum pump seal water pump trip

B. (1) a reactor building isolation signal
(2) an isolation signal for the stack isolation valve AO-3751

C. (1) an isolation signal to the main condenser vapor valves
(2) a mechanical vacuum pump seal water pump trip

D. (1) an isolation signal for the stack isolation valve AO-3751
(2) an isolation signal to the main condenser vapor valves

Question 071

You have been directed to locally verify valve alignments that require entry to a Locked High Radiation Area. NO component manipulation is required.

Which ONE of the following describes the radiological controls required for this task?

A. General RWP required; Pre-Job Briefing required.

B. General RWP required; Pre-Job Briefing NOT required.

C. Specific RWP required; Pre-Job Briefing required.

D. Specific RWP required; Pre-Job Briefing NOT required.

Question 072

During a Site Area Emergency which one of the following personnel man the ENS - NRC Emergency Notification System.

A. An off-shift qualified operator called to the Control Room.

B. An on-shift qualified operator on watch in the Control Room.

C. An off-shift operator called to the Off-site Emergency Operations Facility.

D. An on-shift operator familiar with the event dispatched to the Off-site Emergency Operations Center.

Question 073

Which ONE of the following describes ONLY instrumentation available to accurately provide for post accident indication on panels C170 and C171?

A. Reactor Water Level Normal Range
Reactor Vessel Differential Pressure

B. Reactor Water Level Fuel Zone Range
Torus Water Level

C. Torus Water Level
Feedwater Control Narrow Range Level

D. Reactor Water Level Fuel Zone Range
Reactor Vessel Differential Pressure

Question 074

Given the following conditions:

- The plant is starting up per PNPS 2.1.1 with reactor power at 50% and core flow at 65 Mlbm/hr.
- A transient then causes feedwater temperature to lower by 10 degrees F.
- Reactor power stabilizes at 55%.

In taking the immediate action of 2.4.150, you would lower core flow until either _____ (1) _____ or until reactor power reaches _____ (2) _____.

A. (1) Core flow reaches 43 Mlbm/hr
(2) 30%

B. (1) Core flow reaches 43 Mlbm/hr
(2) 25%

C. (1) Reactor Recirc Pumps reach minimum speed
(2) 30%

D. (1) Reactor Recirc Pumps reach minimum speed
(2) 25%

Question 075

A General Emergency exists.

A piece of equipment required for mitigation of the accident must be operated locally in a radiation field of 60 Rem per hour. There is NO immediate danger to the public.

A 52 year old worker volunteers to perform the required manipulation. He has 0 mrem accumulated dose for this calendar year.

Which ONE of the following describes the (1) amount of time spent in the area until the volunteer's annual TEDE limit is reached, and (2) the MAXIMUM dose he is authorized to receive to perform this operation?

A. (1) Three minutes
(2) 10 Rem

B. (1) Three minutes
(2) 25 Rem

C. (1) Five minutes
(2) 10 Rem

D. (1) Five minutes
(2) 25 Rem

Question 076

The PNPS is operating at 100% power when the following occurs:

- Annunciator C3RC-B7, "B" 125 V DC UNDERVOLTAGE alarms
- Annunciator C3RC-F7, 125V DC CHARGER FAILURE alarms

Investigation confirms the "B" Battery Charger is inoperable. Battery voltage has lowered to 104VDC. There are NO other abnormal system indications.

Which ONE of the following is required and what is the status of the "B" 125 VDC Battery system at this time?

A. The "B" 125 VDC Battery is operable. Place backup charger in service within 4 hours in accordance with PNPS 2.2.14.

B. Enter PNPS 5.3.12, Loss of Essential DC Bus D5, and initiate actions to shutdown the plant. Declare the "B" 125 VDC Battery inoperable.

C. Place backup charger in service in accordance with PNPS 2.2.14. Declare the "B" 125 VDC Battery inoperable UNTIL bus voltage is returned to normal.

D. Enter PNPS 5.3.12, Loss of Essential DC Bus D5, and perform Attachment 3, RESTORATION OF "B" 125V DC BUSES and attempt to restore Bus D17/D5. Declare the "B" 125 VDC Battery inoperable.

Question 077

A Recirc loop rupture compounded by a loss of offsite power has occurred. The vessel rapidly depressurizes and all available low pressure ECCS inject. Current plant conditions are:

- RPV level stable at -172" (actual)
- Core Spray "B" injecting at 3000 gpm
- Core Spray "A" injecting at 3000 gpm
- RHR Pumps "B' and "D" are injecting at 8000 gpm (total)
- RHR Pumps "A" and "C" will not start.

Given these conditions and the Level Leg of EOP-1 determine if adequate core cooling exists.

Adequate core cooling ...

A. exists because RHR is injecting at greater than or equal to 3600 gpm.

B. does NOT exist. RPV level must be restored to greater than -125 inches.

C. does NOT exist. RPV level must be restored to greater than -150 inches.

D. exists because both Core Spray subsystems are injecting at greater than or equal to 3600 gpm combined.

Question 078

A rupture of an Instrument Air line in the Reactor Building has resulted in the need to manually scram the reactor.

Which ONE of the following is the status of the Main Steam Isolation Valves (MSIVs) and what options does the CRS have to maintain the Main Condenser as a heat sink?

Assume all systems are in their normal 100% power lineup.

A. The outboard MSIVs will drift close as instrument air pressure lowers, however they may be maintained in service by lining up the nitrogen supply using PNPS 5.3.8, Loss of Instrument Air.

B. The inboard MSIVs must be swapped over to their nitrogen supply using PNPS 2.2.105, Backup Nitrogen System. The outboard MSIVs will remain open supplied by their accumulators.

C. The MSIVs will remain open with the inboards supplied by the nitrogen supply system and the outboards by the air trapped in their accumulators. They will allow use of the Main Condenser for several hours.

D. The inboard MSIVs must be swapped over to their nitrogen supply using PNPS 2.2.105, Backup Nitrogen System. The outboard MSIVs must be pinned open by maintenance using the direction in PNPS 5.3.8, Loss of Instrument Air.

Question 079

Following a major LOCA inside the drywell coupled with a loss of offsite power, the following conditions exist:

- 4160 VAC bus A5 has locked out
- RHR Pumps B & D are injecting at full capacity
- Core Spray Pump B is injecting at full capacity
- RPV Level is being maintained at -100 inches
- Torus water temperature is at 135°F and rising slowly.

Which ONE of the following actions is required to mitigate the rising torus temperature?

A. In accordance with PNPS 2.2.19.5, RHR Modes of Operation for Transients, close RBCCW nonessential block valves to maximize RBCCW flow to the RHR heat exchanger.

B. In accordance with PNPS 2.4.A.5, Loss Electrical Bus A5, secure RHR injection and place RHR loop B in 2 pump torus cooling mode to maximize heat rejection to RHR heat exchanger

C. In accordance with PNPS 2.4.A.5, Loss Electrical Bus A5, secure RHR injection and place RHR loop B in single pump torus cooling mode to maximize heat rejection to RHR heat exchanger.

D. In accordance with PNPS 2.2.19.5, RHR Modes of Operation for Transients, close the heat exchanger bypass valve on RHR loop B and maintain both RHR Pumps running to maximize heat transfer to the RHR heat exchanger.

Question 080

PNPS has just shutdown from an extended full power run and RHR placed in Shutdown Cooling when the following annunciators alarm:

- C904LC-F6, RBCCW RAD HI
- C1R-C4, SURGE TANK A LEVEL HI

Chemistry performs PNPS 7.4.64, Process Radiation Monitor alarm Response and confirms a massive tube failure in the A RHR Heat Exchanger. No other abnormal conditions exist.

Which ONE of the following off-site notifications is required in accordance with PNPS 1.3.12, Notification and Recall of Personnel and EPIP 100.1 Emergency Action Levels?

A. Notify the State and local authorities of the Unusual Event within 15 minutes. Notify the NRC no later than I hour after declaring the Unusual Event.

B. Notify the State and local authorities of the Alert within 15 minutes. Notify the NRC no later than I hour after declaring the Alert.

C. Notify the NRC within 8 hours in accordance with 10FR 50.72.

D. Notify the NRC within 4 hours in accordance with 10FR 50.72.

Question 081

Five minutes after a reactor scram, the following conditions exist:

- All IRMs are fully inserted and power is on range 4 and slowly rising
- Twenty (20) control rods indicate "black-black". Both the green and red position indication lights for these rods are extinguished.
- All other rods indicate full-in
- Call Rods indicates NO
- No EOP entry conditions have been exceeded.

PNPS 2.1.6, Reactor Scram, directs the crew to verify all control rods are fully inserted.

Regarding this step, which ONE of the following is required?

A. Enter procedure 5.3.23, Alternate Rod Insertion and execute concurrently with procedure 2.1.6.

B. Enter EOP-02 and execute concurrently with scram procedure 2.1.6.

C. Exit the scram procedure 2.1.6 and enter EOP-02.

D. Exit the scram procedure 2.1.6 and enter 5.3.23, Alternate Rod Insertion.

Question 082

PNPS is operating at 100% power when problems on the Electrical Distribution system cause a loss of off-site power. Following the loss the BOP operator reports the following:

- The "A" Diesel Generator has started and is powering its bus
- Bus A-6 is DEENERGIZED and the following alarms have annunciated:
  - C3LC-B3, A-6 UNDERVOLTAGE
  - C3LC-A3, A-6 LOCKOUT
  - C3RC-A3, EDG B LOCKOUT
  - C3RC-B3, EDG B GENERATOR BKR TRIP OR INOP

Which ONE of the following procedures is required to be entered?

A. Enter 2.4.16 Distribution Alignment Electrical System Malfunctions and direct the non licensed operator to attempt one reset of the lockout devices. If they can't be reset, enter procedure 2.2.146, Station Blackout Diesel Generator and place the SBODG on bus A-6.

B. Enter 2.4.16 Distribution Alignment Electrical System Malfunctions and verify that 480 VAC load centers B-1 and B-6 are energized. Concurrently enter 2.4.A6 Loss of A-6 and direct the non licensed operator to cross-tie RBCCW.

C. Enter 2.4.A6 Loss of A-6 and direct the BOP operator to re-energize Bus A-6 from the Shutdown Transformer. Verify that 480 VAC load centers B-1, B-2, and B-6 are energized.

D. Enter 2.4.A6 Loss of A-6 and direct the BOP operator attempt a manual closure of the EDG output breaker. If the breaker does not close, enter procedure 2.2.146, Station Blackout Diesel Generator and place the SBODG on bus A-6.

Question 083

PNPS is operating at 75% power when the following alarms and indications occurred:

- C904LC-A1, DRYWELL PRESSURE HI
- Drywell pressure 2.0 psig and slowly rising on PI-9046B, on Panel C903
- C904R-C5, PUMP B SEAL LEAKAGE HI
- C904R-D5, PUMP B SEAL STAGING FLOW HI

Following attempts to isolate the "B" recirc pump, the 'B" recirc suction valve position showed dual indication and both seals remain pressurized. Drywell pressure is being controlled via periodic venting during the plant shutdown.

Current and previous drywell leakage rates are as follows:

	Yesterday (Determined at 12:00)	Current Leakage Rates (Determined at 12:00)
Unidentified	0.5 gpm	3 gpm
Total	2.6 gpm	8 gpm

The Tech Spec Limit has been exceeded for _____:

A. Pressure Boundary Leakage

B. Identified Leakage

C. Unidentified Leakage

D. Total Leakage

Question 084

The plant was shutdown one week ago for refueling. Fuel handling is ongoing on the refuel floor. No other maintenance or outage activities are taking place.

Then I&C reports that Refueling Ventilation Exhaust Monitor 1705-8C has failed a surveillance and will not generate an upscale trip.

Which ONE of the following actions is required by Technical Specifications?

A. Insert an upscale trip on Refueling Ventilation Exhaust Monitor 1705-8A.

B. Initiate Standby Gas treatment and isolate Reactor Building Ventilation.

C. Terminate Refuel Activities.

D. No action is required provided conditions remain as stated.

Question 085

PNPS is operating at 100% with the "A" Recirc Pump locked-up due to as yet undiagnosed speed control circuit failures. While in this condition a seaweed intrusion event results in the fouling of the main condenser.

The shift manager directs that an emergency backwash of the main condenser be performed.

What is the power level that is specified in procedure PNPS 2.4.36, "Decreasing Condenser Vacuum" to initiate the backwash AND how is it to be achieved?

A. 70% power.
Lower "B" Recirculation Pump speed to achieve 43 Mlbm/hr core flow and then insert RPR steps as required to achieve the desired power level in accordance with PNPS 2.1.14, "Station Power Changes".

B. 50% power.
Reset "A" Recirculation Pump scoop tube lockup, lower "A" and "B" Recirculation Pump speeds to 43Mlbm/hr and insert RPR steps as required to achieve the desired power level in accordance with PNPS 2.2.84, "Reactor Recirculation System"

C. 50% power.
Trip Recirculation Pump "A", lower "B" Recirculation Pump speed to achieve 43 Mlbm/hr core flow and then insert RPR steps as required to achieve the desired power level in accordance with PNPS 2.1.14, "Station Power Changes".

D. 70% power
Maintain "A" and "B" Recirculation speeds constant and speed mismatch within Technical Specification 3.6.F requirements and insert RPR steps as required to achieve the desired power level.

Question 086

A transient results in the following conditions:

- A reactor scram with all control rods fully inserting
- The RPV completely depressurizes
- Torus bottom pressure is 15 psig
- Torus water level is 30 inches
- Torus bulk water temperature is 150 degrees F
- RPV Level is being maintained steady at -160 inches with the 'A' Core Spray Pump injecting at rated capacity
- No other sources of injection are available

Under these conditions the 'A' Core Spray Pump is violating its _____ (1) _____.

EOPs direct that _____ (2) _____.

A. (1) Vortex limit only
(2) the 'A' Core Spray Pump can not be operated in violation of this limit. The 'A' Core Spray Pump must be shutdown and the Primary Containment must be flooded.

B. (1) Vortex and NPSH limits
(2) the 'A' Core Spray Pump can not be operated in violation of these limits. The 'A' Core Spray Pump must be shutdown and the Primary Containment must be flooded.

C. (1) Vortex limit only
(2) the 'A' Core Spray Pump remain in service

D. (1) Vortex and NPSH limit
(2) the 'A' Core Spray Pump remain in service

Question 087

Reactor power is 80% with a power ascension in progress utilizing recirculation flow. Core flow is currently 45 Mlbm/hr.

When power reaches 91% alarm RECIRC FLOW CONVERTER FAILURE, 904R-A1, annunciates. Other indications are as follows:

- All indications on C904 appear normal.
- Total Core Flow indication on C905 is 55 Mlbm/hr
- "A" Recirc Flow Converter Output Meter indicates 80%
- "B" Recirc Flow Converter Output Meter indicates 72%
- The "COMP" light is illuminated on "A" Recirc Flow Converter.

Which ONE of the following describes the status of the APRM scram setpoints and the required Technical Specifications actions, if any?

A. The "A" side APRM scram setpoints are higher than required.
Place associated trip system in trip within 12 hours.

B. The "A" side APRM scram setpoints are lower than required.
No Technical Specification actions are required.

C. The "B" side APRM scram setpoints are lower than required.
No Technical Specification actions are required.

D. The "B" side APRM scram setpoints are higher than required.
Place associated trip system in trip within 12 hours.

Question 088

PNPS is conducting a startup in accordance with PNPS 2.1.1, "Startup from Shutdown". The reactor is critical and the RO withdraws control rods to establish a heatup rate. When the SRM channels reach the upscale rod block set point, the RO notes the following:

- IRM channels A and C indicate 15/125 of scale (Range 3)
- IRM channels D and H indicate 25/125 of scale (Range 3)
- IRM channel B indicates 20/125 of scale (Range 3)
- IRM channels E, F, and G are downscale (Range 1)

Which ONE of the following actions is required?

A. Place IRM E or F in the tripped condition within 1 hour.

B. Insert a manual scram on RPS Channel A within twelve hours.

C. Place IRM E or G in the tripped condition within 1 hour.

D. Insert a manual scram on RPS Channel B within twelve hours

Question 089

A loss of coolant accident requires entry into EOP-17, "Emergency RPV Depressurization" due to an inability to restore and maintain reactor water level.

Reactor water level is being maintained at TAF with LPCI and CS systems when annunciator C904LC-F3, AIR/N2 TO DRYWELL TROUBLE" is received.

What actions are necessary to ensure that the reactor vessel can be maintained depressurized long-term?

A. Enter PNPS 2.2.70, Primary Containment Atmospheric Control System and isolate the N_2 supply and cross connect with instrument air system.

B. Enter PNPS, 5.3.24, Alternate Methods for Venting and Depressurizing the RPV under Emergency Conditions and lineup and depressurize with the Turbine Bypass Valves.

C. Enter PNPS, 5.3.24, Alternate Methods for Venting and Depressurizing the RPV under Emergency Conditions and lineup and depressurize with the High Pressure Coolant Injection System.

D. Enter PNPS 2.2.70, Primary Containment Atmospheric Control System and align nitrogen storage bottles to the system and pressurize the containment nitrogen header.

Question 090

A reactor plant startup and heatup is in progress with all IRMs on range 7. SRM "B" is inoperable and bypassed.

With these initial conditions SRM "D" then fails resulting in the following indications:

- Annunciator 905L-F9, SRM Downscale, in alarm
- Annunciator 905L-B4, Rod Withdraw Block, clear
- SRM "D" reading downscale on both the back panel and C905 panel indications.
- Rod Out Permissive Light on C905 illuminated.

Which ONE of the following is required and the reason for that action?

A. Manually insert a Rod Block immediately. The Rod Block circuit failed to trip following the SRM failure.

B. Manually insert a Rod Block within the next hour. The Rod Block circuit failed to trip following the SRM failure.

C. Declare a seven day LCO and continue the startup based on the number operable SRMs remaining.

D. Enter a tracking LCO for the SRM "D" failure. SRM rod blocks are not required given the initial plant conditions.

Question 091

Traversing Incore Probe (TIP) trace is in progress when drywell pressure exceeds 2.2 psig. Five minutes following the event, the Reactor Operator reports the following indications for Valve Control Channel 1, TIP Control Unit 1 at Panel C913:

- "SQUIB MONITOR" light - extinguished
- "SHEAR VALVE MONITOR" light- extinguished
- "BALL VALVE OPEN" light - illuminated
- "BALL VALVE CLOSED" light -extinguished

Which of the following describes the status of the TIP system and the required actions

A. The system has responded as designed. Enter PNPS 2.2.69, Traversing In-Core Probe System, and direct an operator fire the "Shear Valves" for TIP Control Unit 1.

B. The system has responded as designed. Enter 2.2.125, Containment And Reactor Vessel Isolation Systems, and direct an operator to close the ball valves.

C. The TIP detectors have not withdrawn. Enter 2.2.125, Containment And Reactor Vessel Isolation Systems and direct an operator to fire the "Shear Valves" for TIP Control Unit 1.

D. The TIP detectors have not withdrawn. Enter PNPS 2.2.69 Traversing In-Core Probe System, and direct an operator to withdraw the detectors and verify the ball valves close.

Question 092

Seven minutes following a recirc pump trip from 100% power the following plant conditions exist:

- The discharge valve on the tripped pump has been opened.
- Forward flow exists in the idle recirculation loop jet pumps.
- APRM TLO/SLO switches have ALL been placed in the SLO position

Which ONE of the following is current status of the 3D Monicore computer program and what action is required?

A. Core flow AND power inputs into 3D Monicore are correct, however the APRM scram and rod block settings are incorrect. Enter Technical Specifications Sections 3.6.F.2, single loop operating Core Thermal Limits and 3/4.11, Reactor Fuel Assemblies.

B. Core flow AND power inputs into 3D Monicore are correct, however the APRM scram and rod block settings are incorrect. Enter Technical Specifications Sections 3.1.1, Reactor Protection System Scram Instrumentation and 3.2.C, Control Rod Block Actuation Instrumentation.

C. Core flow input into 3D Monicore is incorrect and Core Thermal Limits, Core Decay Ratio, and Hot Channel Decay Ratio are not being accurately calculated. Enter Technical Specifications Sections 3.6.F.2, single loop operating Core Thermal Limits and 3/4.11, Reactor Fuel Assemblies.

D. Core power input into 3D Monicore is incorrect and Core Thermal Limits, APRM scram and rod block setpoints are not being accurately calculated. Enter Technical Specifications Sections 3.1.1, Reactor Protection System Scram Instrumentation and 3.2.C, Control Rod Block Actuation Instrumentation.

Question 093

PNPS is at 80% with the "A" Reactor Feed Pump out of service. Conditions are as follows:

- FWLC LEVEL MODE SELECT SWITCH: 1 ELEMENT
- FWLC CHANNEL SELECTOR SWITCH: CH B (LI-640-29B)
- Both RECIRC Pump Speeds are matched at 60%

While in this configuration the following indications are observed:

- Annunciator 905R-D8, RX FEED PUMP HI WATERLEVEL CHAN DNSCL, alarms
- Annunciator 905R-D7, REACTOR WATER LEVEL LO, alarms
- RPV level indicator LI-640-29B, FW LEVEL LINE B pegs downscale

After the operators take manual control of the Feedwater level control system and stabilize level. Recirc Pump Speeds are reported as:

- RECIRC PUMP "A" Speed: 60%
- RECIRC PUMP "B" Speed: 44%

Which ONE of the following is required?

A. Enter PNPS 2.2.84, Reactor Recirculation System and lower both pump speeds to 26% speed.

B. Enter PNPS 2.2.84, Reactor Recirculation System and reset the runback and restore Recirc Pump "B" speed to 60%.

C. Enter PNPS, 2.4.20 Reactor Recirculation System Speed or Flow Control Malfunction and lower "A" Recirc pump speed to 44% speed.

D. Enter PNPS, 2.4.20 Reactor Recirculation System Speed or Flow Control Malfunction and raise "B" Recirc pump speed to within a minimum of 13% of Pump "A" speed.

Question 094

Given the following:

- The plant is at 100% power.
- The shift is manned to the Technical Specification minimum composition.
- The shift has 4 hours remaining.
- The ATC operator has become ill and must leave the site for emergency medical treatment.

Which ONE of the following describes the requirements regarding the shift composition and the MINIMUM required action in this situation?

A. Responsibilities of the ATC may be turned over to the BOP for the remainder of the shift

B. The ATC may leave the site immediately after turnover of responsibilities to another qualified person on shift. A replacement must arrive within 1 hour

C. The ATC may leave the site immediately after turnover of responsibilities to another qualified person on shift. A replacement must arrive within 2 hours.

D. The ATC may leave the site immediately after turnover of responsibilities to another qualified person on shift. A reactor plant shutdown must be initiated if a replacement does not arrive within 4 hours.

Question 095

During an in-progress, scheduled surveillance, I&C determines that a procedure change is required in order to complete the surveillance.

Regarding the procedure change process associated with Emergent Work (EWN):

The EWN process can be used for_____(1)_____.

The _____(2)_____ is the final authority in determining whether this process can be used.

A. (1) EITHER Intent or Non-Intent changes
(2) Procedure Owner

B. (1) Non-Intent changes ONLY
(2) Shift Manager

C. (1) EITHER Intent or Non-Intent changes
(2) Shift manager

D. (1) Non-Intent changes ONLY
(2) Procedure Owner

Question 096

Given the following:

- Increasing Turbine Building ARM readings
- Turbine Building air samples taken outside the Turbine Building Truck Lock show excessive airborne contamination levels

Which of the following is required?

A. Enter EOP-05, Radioactive Release Control, start all available Turbine Building Roof Exhaust Fans.

B. Enter EOP-05, Radioactive Release Control, isolate the Turbine Building and secure all Turbine Building Ventilation.

C. Enter EOP-04, Secondary Containment Control, secure all operating Turbine Building Ventilation.

D. Enter EOP-04, Secondary Containment Control, start all available Turbine Building Roof Exhaust Fans.

Question 097

Given the following:

- A fuel bundle has been dropped while refueling.
- Fuel Pool level is stable in the normal band.
- Main Stack Process Radiation Monitors 1705-18A and B are both reading 4.0E4 cps and stable
- Dose Rates at the site boundary have been determined to be 1.08 Rem/Hr.
- Wind Direction is from 105 degrees.

Which ONE of the following describes proper implementation of the Emergency Plan?

(Reference provided)

A. Declare a Site Area Emergency; Evacuate subareas 1, 3, and 12. Shelter all other subareas.

B. Declare a Site Area Emergency; Evacuate subareas 1, 2, 3, 4, 6, 7, 8, 9, 11, and 12. Shelter all other subareas.

C. Declare a General Emergency: Evacuate subareas 1, 3, and 12. Shelter all other subareas.

D. Declare a General Emergency; Evacuate subareas 1, 2, 3, 4, 6, 7, 8, 9, 11, and 12. Shelter all other subareas.

Question 098

Following a transient core and plant operating conditions are as indicated on the Official 3D Monicore Case below.

			PILGRIM CYCLE 17		SEQUENCE NO 2	
CORE PARAMETERS			3DM/P11		7-JUL-2008 06:40 CALCULATED	
POWER	MWT	1723.8	PERIODIC LOG		7-JUL-2008 06:40 PRINTED	
POWER	MWE	596.7	USER REQUEST		CASE ID FMLD1080306064009	
FLOW	MLB/HR	39.5	CALC RESULTS		RESTART FRFD1080306062454	
FPAPDR		0.656			LPRM SHAPE - FULL CORE	
SUBC	BTU/LB	27.58	Keff	1.0095		
PR	PSIa	1041.75	XE WORTH %	-0.15	LOAD LINE SUMMARY	
CORE	MWD/sT	23308.1	XE / RATED	1.027	CORE POWER	85.1%
CYCLE	MWD/sT	3181.3	AVE VF	0.406	CORE FLOW	56.5%
MCPR		1.712	FLLLP	1.03	LOAD LINE	122.5%

CORRECTION FACTORS	MFLCPR=1.002	MFLPD=0.998	MAPRAT=0.996	ZBB=3.19 ft
OPTION: ARTS	2 LOOPS ON	MANUAL FLOW	MCPRLIM= 1.460	FCBB= N/A

MOST LIMITING LOCATIONS (NON-SYMMETRIC)

MFLCPR	LOC	MFLPD	LOC	MAPRAT	LOC	PCRAT	LOC
0.855	29-22	0.652	25-20-11	0.713	29-22-10	1.005	35.26-11
0.845	29-18	0.651	29-22-10	0.689	31-24-11	1.002	27-18-11

The current FLLLP indicated value means that:

A. the reactor is operating above the MELLLA line and a power reduction is required.

B. the reactor is operating below the MELLLA line and a power reduction is NOT required.

C. if flow is increased to 100% rated, at least one core thermal limit will be exceeded.

D. if flow is increased to 100% rated, there will be a 3% margin to the most limiting thermal limit.

Question 099

During refueling the plant is performing a core spiral unloading program. The Reactor Operator monitoring the SRMs reports the following:

- SRM 'A' – reading 4 cps
- SRM 'B' - reading 2 cps
- SRM 'C' – reading 3 cps
- SRM 'D' – reading 3 cps

In accordance with technical specification requirements you direct the refueling floor SRO to ____(1)_____because___(2)____:

A. (1) Stop the core spiral unloading
(2) Lower than required SRM readings will NOT ensure protection against a rod drop accident.

B. (1) Continue the core spiral unloading.
(2) SRM readings are expected to drop below 3 cps during spiral unloading.

C. (1) Stop the core spiral unloading.
(2) Lower than required SRM readings will NOT ensure protection against an inadvertent control rod withdrawal.

D. (1) Continue the core spiral unloading.
(2) SRM readings will ensure protection against an inadvertent control rod withdrawal.

Question 100

PNPS is at 50% power with the "A" Recirculation Pump secured when the following alarms are received:

- C3LC-A7, B-2 TRIP
- C3LC-A7, B-2 OVERLOAD

Which ONE of the following is required?

A. Enter 2.1.6 and direct a manual scram
Cross-tie RBCCW loops
Declare a 24 hour Cold Shutdown LCO

B. Enter 2.1.6 and direct a manual scram
Cross-tie RBCCW loops
Declare a 7 day Cold Shutdown LCO

C. Commence a Reactor Shutdown per 2.1.5, Controlled Shutdown From Power
Cross-tie RBCCW loops
Declare a 24 hour Cold Shutdown LCO

D. Commence a Reactor Shutdown per 2.1.5, Controlled Shutdown From Power
Cross-tie RBCCW loops
Declare a 7 day Cold Shutdown LCO

Site-Specific Written Examination
Pilgrim
Senior Reactor Operator
Answer Key

1.	C	26.	D	51.	D	76.	C
2.	B	27.	C	52.	A	77.	C
3.	C	28.	D	53.	B	78.	A
4.	B	29.	A	54.	B	79.	A
5.	D	30.	B	55.	C	80.	C
6.	A	31.	B	56.	C	81.	C
7.	C	32.	A	57.	C	82.	B
8.	A	33.	C	58.	B	83.	C
9.	C	34.	B	59.	B	84.	D
10.	D	35.	D	60.	D	85.	C
11.	B	36.	B	61.	C	86.	C
12.	B	37.	A	62.	C	87.	C
13.	C	38.	B	63.	A	88.	B
14.	B	39.	C	64.	B	89.	D
15.	D	40.	D	65.	A	90.	C
16.	C	41.	C	66.	B	91.	D
17.	B	42.	C	67.	D	92.	C
18.	A	43.	A	68.	D	93.	C
19.	B	44.	B	69.	D	94.	C
20.	D	45.	B	70.	A	95.	B
21.	B	46.	D	71.	C	96.	A
22.	B	47.	C	72.	~~A~~ A,B	97.	C
23.	C	48.	D	73.	B	98.	A
24.	B	49.	D	74.	D	99.	B
25.	C	50.	B	75.	~~C~~ D	100.	A