

**BRUNSWICK EXAM  
50-325 & 324/2001-301**

**JULY 27 - AUGUST 3, 2001**

**DRAFT INITIAL SUBMITTAL**

**WRITTEN EXAM WITH  
ANSWERS**

1. 201001A401 001

The CRD system is being restarted per OP08 following a trip of the running CRD pump. CRD system configuration:

CRD pump A	Running
CRD flow control valve	Auto
CRD drive water pressure valve	Full open
CRD system flow	45 gpm
Cooling water dp	20 psid

The operator is directed to throttle the drive pressure valve (F003) to establish drive water differential pressure between 260 and 275 psid. As the operator throttles this valve, which ONE (1) of the following describes how the CRD flow control valve will throttle:

- A. open, and drive water dp will drop.
- B. open, and drive water dp will rise.
- C. closed, and drive water dp will drop.
- D. closed, and drive water dp will rise.

Answer: B

2. 201002K405 001

Control rod INSERTION using the "EMERGENCY IN" position of the Rod Out Notch Override switch will bypass which ONE (1) of the following?

- A. a Select Block.
- B. a RWM Insert Block.
- C. the normal "drivein bus".
- D. the normal settle function.

Answer: D

3. 201006K405 001

Loss of individual reed switches for a selected rod will cause the RWM to do which ONE (1) of the following?

- A. The RWM will go to the LPSP, regardless of actual reactor power.

B. The RWM will sense a BPWS incompatible pattern is selected, generate a "critical self-test failure" and generate rod blocks

C. The RWM will cause an insert and withdraw block until a substitute position is placed in the RWM memory.

D. The RWM will require removing the rod from the BPWS and establishing a position allowed by the RWM pattern.

Answer: C

4. 202001A107 001

Which ONE (1) of the following occurs on an increase in Recirculation Pump speed?

A. There is a temporary increase in core void content which causes an decrease in moderator density with a resultant decrease in neutron moderation. The steam generation rate decreases which causes a positive reactivity effect.

B. There is a temporary decrease in core void content which causes an increase in moderator density with a resultant increase in neutron moderation. The steam generation rate increases which causes a negative reactivity effect.

C. There is a temporary decrease in core void content which causes an increase in moderator density with a resultant increase in neutron moderation. The steam generation rate decreases which causes a positive reactivity effect.

D. There is a temporary increase in core void content which causes an decrease in moderator density with a resultant decrease in neutron moderation. The steam generation rate increases which causes a negative reactivity effect.

Answer: B

5. 202002GEN2.1.28 001

The signal from the recirculation pump speed controller suddenly decreases from 10 Ma. to less than 1 Ma. The signal failure circuit annunciates a signal failure alarm in the Control Room and which ONE (1) of the following?

A. Limit the Recirc M-G set speed demand to 28%.

B. Fully insert the scoop tube.

C. Fully retract the scoop tube.

D. Lock scoop tube in its present position.

Answer: D

6. 202002K101 001

Unit 2 is operating at 100% power with  $\sim 35.42 \times 10^6$  lbm/hr is driving flow and  $\sim 41.5 \times 10^6$  LBm/hr is driven flow. Steam flow is  $\sim 11.077 \times 10^6$  lbm/hr

Total flow through the core is broken down as follows:

90% of the total flow is through the fuel channels

10% of the total flow bypasses the fuel by design

Which ONE (1) of the following is closest to the recirculation ratio?

A.  $\sim 3.0/1$

B.  $\sim 3.8/1$

C.  $\sim 6.3/1$

D.  $\sim 7.0/1$

Answer: D

7. 203000K303 001

Which ONE (1) of the following describe the ADS logic?

A. Transmitters from pumps A and C provide signals to the "A" logic system. Signals from pumps B and D provide inputs to the "B" logic system.

B. Transmitters from pumps A and D provide signals to the "A" logic system. Signals from pumps B and C provide inputs to the "B" logic system.

C. Transmitters from pumps B and C provide signals to the "A" logic system. Signals from pumps A and D provide inputs to the "B" logic system.

D. Transmitters from pumps B and D provide signals to the "A" logic system. Signals from pumps A and C provide inputs to the "B" logic system.

Answer: A

8. 204000A409 001

Which ONE (1) of the following signals will cause a partial Group 3 Reactor Water Cleanup (RWCU) isolation?

A. High differential flow.

B. Low low reactor water level.

C. Area ventilation deltaT high.

D. Nonregenerative Hx outlet temperature high.

Answer: D

9. 206000K203 001

Unit 1 is at 50% power when the only operating Reactor Feedwater Pump trips. Reactor water level is decreasing rapidly and is currently +177 inches. Annunciator A07 22 (REACTOR WTR LVL HI/LOW) is sealed in.

If Reactor water level lowers to +125" before HPCI is manually started to restore level to normal, the recirculation pump speed control system will do which ONE (1) of the following?

- A. trip both recirculation pumps.
- B. maintain the current recirculation pump speed.
- C. decrease recirculation pump speed on both recirculation pumps to 28%.
- D. decrease recirculation pump speed on both recirculation pumps to 45%.

Answer: C

10. 209001A102 001

Following a LOCA a single Core Spray Pump is delivering rated flow of 4725 gpm at a discharge pressure of 290 psig. The discharge is into a Reactor vessel at 85 psig. The pump shut off head is 790 ft. Core spray was secured to for five minutes and the vessel pressure slowly rose to 100 psig. Which ONE (1) of the following describe the condition of the Core Spray System if the same train was restarted? (Assume no operator action, accept turning on the pump)

- A. Deliver 4720 gpm at a higher discharge pressure
- B. Deliver 4720 gpm at a lower discharge pressure
- C. Deliver a lower flow rate at 290 psig
- D. Deliver a higher flow rate at 290 psig.

Answer: C

11. 211000K403 001

Which ONE (1) of the following describes why the SLC solution enters the Reactor Vessel through the SLC/core differential pressure line penetration?

- A. To accommodate differential movement between the shroud and the vessel.
- B. To maintain differential temperature limit between the RPV top and bottom head of less than 145 °F.

C. To ensure adequate mixing of the SLC solution with the reactor water injected when natural circulation exists with normal reactor water level.

D. To ensure adequate flow measurement during the SLC solution injection phase.

Answer: C

12. 212000K602 001

A Unit One reactor startup is in progress. The following plant conditions exist:

RPS Shorting Links Installed  
Reactor power 15/40 scale, Range 3 IRMs

The Reactor Operator has just calculated doubling time to be 100 seconds and inadvertently ranged IRM F DOWN from Range 3 to Range 2.

This will cause which ONE (1) of the following?

- A. a rod block only.
- B. a full reactor scram.
- C. a half scram, and a rod block.
- D. no RPS or rod block functions.

Answer: C

13. 215001A403 001

A Unit One (1) TIP trace is being run in the MANUAL mode using TIP machine "C" which is currently at the core top limit. With TIP machine "C" ball valve control switch held in OPEN, RPV water level lowers to Low Level 1.

Which ONE (1) of the following is correct concerning TIP machine "C"?

- A. must be manually withdrawn to the inshield position then the ball valve will automatically close.
- B. will withdraw to the inshield position then the ball valve will automatically close.
- C. must be manually withdrawn to the inshield position then the ball valve must be manually closed.
- D. will withdraw to the inshield position then the ball valve must be manually closed.

Answer: B

14. 215002K301 001

Each time a new rod is selected the RBM resets or "nulls". This null sequence sets

the local average LPRM signal to 100%. Then as the rod is withdrawn the local average signal is compared against one of three pre-selected high flux trip setpoints (approximately 106%, 109% or 115%). If the local average signal exceeds the reference trip setpoint then the RBM "trips" and initiates a rod withdrawal block in the Reactor Manual Control System (RMCS). Which ONE (1) of the following describes how the RBM determines the reference trip set point?

- A. by referencing an APRM signal for core average power ONLY.
- B. by referencing the "A" level LPRM signals for core average power ONLY.
- C. by referencing the "B" and "D" level signals for core average power ONLY.
- D. by referencing the "A", "B", "C" and "D" level string for core average power ONLY.

Answer: A

15. 215002K301 002  
Which ONE (1) of the following is enough to initiate a rod block?

- A. If 25 % of the LPRM inputs required by the count circuit are downscale
- B. One RBM channel trip signal supplied to RMCS.
- C. If the gain change circuit increases to 104% of scale.
- D. If the average core power exceeds local flux by preset limits.

Answer: B

16. 215003K301 001  
A Unit Startup is in progress; conditions as follows:

RPS Shorting Links INSTALLED  
IRM A Range 3 reading 50/125  
IRM B Range 2 reading 50/125

All other IRMs are on Range 3 between 15/125 and 50/125. No IRMs are bypassed. The CO is withdrawing SRMs. SRM counts are as follows:

SRM A	5x103 cps
SRM B	90 cps
SRM C	180 cps
SRM D	6x103 cps

The CO performs the following IRM Range Switch actions:

- A) IRM A taken to Range 2
- B) IRM B taken to Range 3

This will cause which ONE (1) of the following:

- A. a rod block only.
- B. no RPS or rod block functions.
- C. a full reactor scram and a rod block.
- D. a half reactor scram and a rod block.

Answer: D

17. 215004K501 001

Testing of the SRM RETRACT NOT PERMITTED Rod Block is in progress on Unit One(1). The CO inserts SRM A until the Detector Full In light is illuminated and observes that the Drive In pushbutton light goes out. The CO selects SRM B and depresses the Drive Out pushbutton and observes no apparent response of SRM B.

SRM B will not retract because of which ONE (1) of the following?

- A. Distribution Panel 1ABRX is deenergized.
- B. I&C failed to reset the Trip Unit for SRM A Rod Block.
- C. the CO failed to reset the seal in Drive In Pushbutton for SRM A.
- D. I&C failed to raise SRM B count rate above 125 cps to allow a Retract Permissive.

Answer: C

18. 215005A203 001

Unit 1 is at 17 % power, an instrument Tech has just reported that APRM Flux HI not in RUN was bypassed in addition to IRM Flux HI-HI in Run. Which ONE (1) of the following describe the consequences of this error? The unit may not adequately protected from:

- A. continuous control rod withdrawal accident.
- B. slow thermal transients.
- C. low power transients.
- D. local control rod errors.

Answer: A

19. 216000A402 001

Level transmitters C32-LT-N004 B has been selected to recorder C31-LPR-608. Which ONE (1) of the following does the signal from the recorder now provide ?

- A. REACTOR WATER LEVEL HIGH/LOW Annunciator ONLY.
- B. REACTOR WATER LEVEL HIGH/LOW Trip ONLY.
- C. REACTOR WATER LEVEL HIGH/LOW Annunciator and trip ONLY.
- D. REACTOR WATER LEVEL HIGH/LOW Annunciator, runback and trip.

Answer: A

20. 216000K504 001

With the Core Spray system operating a break in the injection line between the reactor vessel penetration and the core shroud would do which ONE (1) of the following?

A. expose the low pressure side of the Core Spray Sparger Line Break Detection instrument to the higher pressure of the region outside the shroud. This would be sensed as an decreased differential pressure and would activate a Control Room annunciator only.

B. expose the low pressure side of the Core Spray Sparger Line Break Detection instrument to the higher pressure of the region outside the shroud. This would be sensed as an decreased differential pressure and would activate a Control Room annunciator and local DP indication.

C. expose the low pressure side of the Core Spray Sparger Line Break Detection instrument to the lower pressure of the region outside the shroud. This would be sensed as an increased differential pressure and would activate a Control Room annunciator and local DP indication.

D. expose the low pressure side of the Core Spray Sparger Line Break Detection instrument to the lower pressure of the region outside the shroud. This would be sensed as an increased differential pressure and would activate a Control Room annunciator.

Answer: C

21. 217000A306 001

Following a low reactor water level event, RCIC initiated. P601 indication has been lost. All other indication is that the RCIC is performing as designed. Which ONE (1) of the following is the most probable cause of this situation? The loss of:

A. 125 Vdc power from Panel 3B.

B. 125 Vdc power from Panel 4B.

C. 52.5 Vdc power supply.

D. 24 Vdc power supply.

Answer: C

22. 217000K202 001

Reactor Low Level Two, LL2, is received on Unit Two, the Condensate Storage Tank Suction Valve is closed. Which One (1) of the following describe the automatic actions that will take place?

A. The Condensate Storage Tank Suction Valve will receive an open signal as long as at least one of the two Suppression Pool RCIC Suction Valves is not full open.

B. The Condensate Storage Tank Suction Valve will receive an open signal as long as at least one of the two Suppression Pool RCIC Suction Valves is full open.

C. The Condensate Storage Tank Suction Valve will receive a close signal only after the two Suppression Pool RCIC Suction Valves are fully open.

D. The Condensate Storage Tank Suction Valve will receive open signal, then will receive a close signal after one of the two Suppression Pool RCIC Suction Valves are fully open.

Answer: A

23. 218000 GEN 2.3.2 001  
Which ONE (1) of the following is a design basis of ADS ?

A. The pressure relief system prevents overpressurization of the Primary Containment system in order to prevent failure of the process barrier due to high pressure.

B. The pressure relief system provides automatic depressurization for large breaks in the Primary Coolant system so that the LPCI and/or the Core Spray System can inject coolant sufficient to protect the fuel barrier. This depressurization is dependent on the availability of LPCI and/or Core Spray.

C. The pressure relief system provides automatic depressurization for large breaks in the Primary Coolant system so that the LPCI and/or the Core Spray System can inject coolant sufficient to protect the fuel barrier. This depressurization is NOT dependent on the availability of LPCI and/or Core Spray.

D. The pressure relief system prevents overpressurization of the Primary Coolant system in order to prevent failure of the process barrier due to high pressure.

Answer: D

24. 218000K603 001  
The setpoint for the Unit 2 annunciator 2-B21-F013C has been changed for 2-B21-F013C from 290 °F to 340 °F. While the Unit 1 annunciator 1-B21-F013C remains at 290 °F. Which ONE (1) of the following is the reason the difference between units?

A. The 2B21-F013C thermocouple is physically closer to the SRV main body than the other thermocouples. It reads 60 -70 °F higher than the average group of SRV thermocouple indicators. The alarm set point was raised to accommodate the thermocouple position.

B. The 2B21-F013C thermocouple has a small unisolateable leak resulting in a tailpipe temperature that is 60 -70 °F higher than the average group of SRV thermocouple indicators. The alarm set point was raised to accommodate this leak.

C. There is only one annunciator to alert operators of a leaking SRV on Unit 1. There are individual annunciators on Unit 2. The alarm set point was raised to allow the rest of the SRV thermocouples to be set at a lower temperature.

D. The 2B21-F013C thermocouple was replaced with a more accurate thermocouple. The alarm setpoint was raised to provide additional operational flexibility.

Answer: A

25. 223001A304 001

Following a LOCA, which included a group 6 isolation, the Containment Hydrogen/Oxygen monitors have been placed in service.

After placing the monitors in service, the following alarms and indications occur:

Reactor Building Vent Rad Hi alarm sealed in  
Reactor Building Vent Rad Hi Hi alarm sealed in  
Reactor Building Vent Radiation recorder channel A pegged high  
Reactor Building Vent Radiation recorder channel B 0.5 mr/hr

Which ONE (1) of the following describes how this failure affect Hydrogen/Oxygen (H<sub>2</sub>/O<sub>2</sub>) monitors?

- A. Both Division I and II H<sub>2</sub>/O<sub>2</sub> monitors remain in service.
- B. Only Division I H<sub>2</sub>/O<sub>2</sub> monitor isolates, but can be placed back in service.
- C. Only Division I H<sub>2</sub>/O<sub>2</sub> monitor isolates, and cannot be placed back in service.
- D. Both Division I and II H<sub>2</sub>/O<sub>2</sub> monitors isolate, but can be placed back in service.

Answer: A

26. 223001K103 001

The two radiation detectors measuring reactor building exhaust radiation level, D12-RE-N010A/B, have passed their high, setpoint. Which ONE (1) of the following describe the automatic actions that will take place?

A. Channel A upscale initiates outboard CAC/CAD and all CAM/PASS isolations. Channel B upscale initiates inboard CAC/CAD and all CAM/PASS isolations.

B. Channel A upscale initiates outboard CAC/CAD and all inboard CAM/PASS isolations. Channel B upscale initiates inboard CAC/CAD and all outboard CAM/PASS isolations.

C. Channel A upscale initiates inboard CAC/CAD and all CAM/PASS isolations. Channel B upscale initiates outboard CAC/CAD and all CAM/PASS isolations.

D. Channel A upscale initiates inboard CAC/CAD and all outboard CAM/PASS isolations. Channel B upscale initiates outboard CAC/CAD and all inboard CAM/PASS isolations.

Answer: C

27. 223002K311 001

Unit One is in AOP-36.2 Station Blackout. You have just turned off the 120 Vac power supply breaker, 31A and 31B to the NUMAC steam leak detection modules. Which ONE (1) of the following was accomplished by this step?

- A. HPCI is now available.
- B. RCIC is now available.
- C. RHR is now available.
- D. Core Spray is now available.

Answer: A

28. 226001 001

Following a large break LOCA

The suppression pool cooling valves have automatically close as the result of a LPCI initiation

The water level inside the core shroud is below the level equivalent to 2/3 of the core height, as indicated by both B21-LTM-N036-1 and N037-1

A LPCI initiation signal present.

Suppression pool temperature is above the maximum limit and cooling must be started.

Which ONE (1) of the following describe what must be before the manual positioning F016A/B, F021A/B, F027A/B, F028A/B and F024A/B to initiate suppression pool cooling?

A. Placing 2/3 core height LPCI initiation manual override keylock override switch E11-S18A (B) to MANUAL OVERRIDE position, place the "Think" switch E11-S17A(B) in MANUAL OVERRIDE, and RHR Service Water Booster Pump LOCA Override Switch to MANUAL OVERRIDE

B. Placing 2/3 core height LPCI initiation manual override keylock override switch E11-S18A (B) to MANUAL OVERRIDE position, place the "Think" switch E11-S17A(B) in MANUAL OVERRIDE, and RHR Service Water Booster Pump LOCA Override Switch to NORMAL.

C. Placing 2/3 core height LPCI initiation manual override keylock override switch E11-S18A (B) to Bypass position, place the "Think" switch E11-S17A(B) in MANUAL OVERRIDE, and RHR Service Water Booster Pump LOCA Override Switch to NORMAL.

D. Placing 2/3 core height LPCI initiation manual override keylock override switch E11-S18A (B) to MANUAL OVERRIDE position, place the "Think" switch E11-S17A(B) in Normal, and RHR Service Water Booster Pump LOCA Override Switch to MANUAL OVERRIDE.

Answer: A

29. 23300K607 001

Unit Two is responding to a loss of fuel pool cooling using 0-AOP-38.0, Loss of Fuel Pool Cooling. The operator is cautioned to Closely Monitor Fuel Pool Level during make up to the pool. Which ONE (1) of the following is the reason for this caution?

- A. To prevent the release of Iodine into containment atmosphere.
- B. To prevent water from overflowing into the reactor building ventilation system.
- C. To prevent cavitation of an RHR pump due to loss of NPSH.
- D. To prevent syphon draining of the fuel pool in the even of an RHR pump failure.

Answer: B

30. 239002A108 001

When steam is discharged from the safety relief valves (SRV) to the suppression pool water. Which ONE (1) of the following describes the flow path taken by the SRV discharge and the reason for the path ?

A. The SRV discharges to a tailpipe which terminates in a manifold (T-Quencher) approximately seven feet below normal suppression pool water level. This provides even heat distribution in the suppression pool and reduced dynamic forces on the suppression chamber.

B. The SRV discharges to a tailpipe which terminates in a manifold (T-Quencher) approximately seven feet above the bottom of the suppression pool. This provides even heat distribution in the suppression pool, but does not significantly reduce the dynamic forces.

C. The SRV discharges to a tailpipe which connects to a ring header, the ring header terminates in a manifold (T-Quencher) approximately seven feet below normal suppression pool water level. This provides even heat distribution in the suppression pool, but does not significantly reduce the dynamic forces.

D. The SRV discharges to a tailpipe which connects to a ring header, the ring header terminates in a manifold (T-Quencher) approximately seven feet above the bottom of the suppression pool. This provides even heat distribution in the suppression pool and reduced dynamic forces on the suppression chamber.

Answer: A

31. 239003K105 001

The Main Steam Lines transit within an isolated pipe chase. Which ONE (1) of the following describe the instrumentation in the pipe chase?

A. This pipe chase also has temperature monitoring instrumentation intended to initiate a PCIS Group I Isolation signal on a detected steam leak in the Reactor Building.

B. This pipe chase also has both temperature and pressure monitoring instrumentation intended to initiate a PCIS Group I Isolation signal on a detected steam leak in the Turbine Building.

C. This pipe chase also has temperature monitoring instrumentation intended to initiate a PCIS Group I Isolation signal on a detected steam leak in the Turbine Building.

D. This pipe chase also has both temperature and pressure monitoring instrumentation intended to initiate a PCIS Group I Isolation signal on a detected steam leak in the Reactor Building.

Answer: C

32. 241000K131 001

Unit One (1) is starting up following refueling. Main Turbine roll is in progress with Turbine speed at 1600 RPM.

The Main Turbine will trip if which ONE (1) of the following occurs?

A. EHC System DC power is lost.

B. Bearing #3 vibration rises to 10 mils.

C. Stator water cooling inlet pressure is 10 psig.

D. Main Shaft Oil Pump discharge pressure is 100 psig.

Answer: D

33. 245000K405 001

The following is a list of Main Turbine trip

Exhaust Hood Temperature Trip

Low Stator Coolant Inlet Pressure Trip

High Stator Coolant Outlet Temperature Trip

Low Stator Cooling Water Flow Trip

Which ONE (1) of the following do all of these trips have in common?

A. They all have time delays.

B. They are all 2 out of 2 coincidence.

- C. They are all 2 out of 3 coincidence.
- D. They all have MCR bypass switches.

Answer: A

34. 256000A101 001  
If a FWH drain valve failed in the closed position, which ONE (1) of the following would result?

A. a decreased HD flow, increased Condensate flow, and higher Condensate System pressures.

B. an increased HD flow, decreased Condensate flow, and lower Condensate System pressures.

C. a decreased HD flow, increased Condensate flow, and lower Condensate System pressures.

D. an increased HD flow, decreased Condensate flow, and higher Condensate System pressures.

Answer: C

35. 259001A306 001  
Unit 1 is operating at 100% power. You are monitoring the operation of Condensate and Feedwater System in the Control Room

You note the following parameters:

Condensate Pump discharge pressure 180 psig.  
Condensate Booster Pump suction pressure 165 psig.  
Condensate Booster Pump discharge pressure 366 psig.  
Reactor Feed Pump suction pressure 225 psig.  
Reactor Feed Pump discharge pressure 900 psig.  
North Hotwell A level - 1.5 inches.  
South Hotwell A level + 1.5 inches.  
North Hotwell B level - 1.5 inches.  
South Hotwell B level +1.5 inches.  
Feedwater line to reactor temperatures approximately 400 °F

Which ONE (1) of the following actions should you complete first?

- A. Restore reactor Feed Pump discharge pressure, it is too low for this power level.
- B. Restore Reactor feed Pump suction pressure, it is too low for this power level.
- C. Restore Condensate Booster Pump suction pressure, it is too high for this power level.

D. Restore Condensate Pump suction pressure, it is too high for this power level.

Answer: A

36. 259002A203 001

Unit One is at 100% power with Digital Feedwater Control System in 3 ELEMENT and the Reactor Water Level Select Switch in LEVEL A (N004A).

Which ONE (1) of the following describes how will the Digital Feedwater Control System will respond to level instrument N004A failing low?

A. Remain in 3 ELEMENT and utilize the B level instrument (N004B) for level control.

B. Remain in 3 ELEMENT and utilize the C level instrument (N004C) for level control.

C. Transfer to 1 ELEMENT and utilize the B level instrument (N004B) for level control

D. Transfer to 1 ELEMENT and utilize the C level instrument (N004C) for level control.

Answer: A

37. 259002K101 001

The feedwater master control station (C32-SIC-R600) was set in MASTER AUTO. A full scram signal is received on both A and B channels as indicated by the backup scram valve relay K21A being energized from the RPS logic. Following this scram which ONE (1) of the following describes how the feed water master control station responds?

A. The LVLERR calculation block outputs a level setpoint of 182" and removes the 3 element permissive.

B. The LVLERR calculation block outputs a level setpoint of 182" and retains the 3 element permissive.

C. The LVLERR calculation block outputs a level setpoint of 170" and removes the 3 element permissive.

D. The LVLERR calculation block outputs a level setpoint of 170" and retains the 3 element permissive.

Answer: C

38. 261000K604 001

The Main Stack Radiation Upscale has just come into alarm. Which ONE (1) of the following describes the status of the SGBT system and the basis for this status?

A. Tech Specs and Environmental Qualification concerns for the radiation monitors following a high energy line break (HELB) requires SBGT to automatically initiate on this signal.

B. Tech Specs requires SBGT to initiate on this signal. However, due to the connection between the group 6 isolation logic and the SBGT start circuits, the SBGT System will not initiated automatically.

C. Tech Specs do not require SBGT to initiate on this signal However, due to Environmental Qualification concerns for the radiation monitors following a high energy line break the system must be initiated manually.

D. Tech Specs do not require SBGT to initiate on this signal. However, due to the connection between the group 6 isolation logic and the SBGT start circuits, the SBGT system will initiate automatically.

Answer: D

39. 262001K501 001

The EDG governor will be in the ISOCHRONOUS mode. The operator parallels the EDG with the BOP bus. The EDG would tried to pick up the entire grid and become instantaneously overloaded. Which ONE (1) of the following would cause this to happen?

A. The EDG governor was in the ISOCHRONOUS mode.

B. The EDG governor was in the DROOP mode.

C. The EDG was synchronized 180 degrees out of phase.

D. The EDG was already connected to an E-bus.

Answer: B

40. 262002K603 001

If the vital UPS unit four position Manual Bypass Switch (S1) is placed in the BYP. TEST position, which ONE (1) of the following describes the status of the static transfer switch?

A. The switch is bypassed with the alternate AC source being routed to the UPS unit output (B1 closed and B2 open). The alternate AC source is removed from the static transfer switch (B3 open). The sync reference is applied to the sync circuit permitting the inverter to come into synchronization with the alternate AC source during UPS unit startup (B4 closed).

B. The switch is bypassed with the alternate AC source being routed to the UPS unit output (B1 open and B2 closed). The alternate AC source is removed from the static transfer switch (B4 open). The sync reference is applied to the sync circuit permitting the inverter to come into synchronization with the alternate AC source during UPS unit startup (B3 closed).

C. The switch is bypassed with the alternate source being routed to the UPS unit output (B1 closed and B2 open). The UPS unit is being maintained in a standby status with its inverter synchronized with the alternate AC source.

D. The switch is bypassed with the alternate source being routed to the UPS unit output (B1 open and B2 closed). The UPS unit is being maintained in a standby status with its inverter synchronized with the alternate AC source.

Answer: C

41. 263000K501 001

The Battery Room Ventilation system is inadvertently secured during an equalizing charge of the A1 Batteries. You are directed to secure the equalizing charging. Which ONE (1) of the follow describes the basis for this action?

- A. To prevent a fire and explosion hazard.
- B. To retain the specific gravity of the batteries.
- C. To ensure the proper alignment of the vortex dampers.
- D. To prevent damage to the pilot cell.

Answer: A

42. 264000K407 001

EDG 3 was stopped using the Emergency Stop pushbutton following a routine run. The DG lockout relay energized and the CA module NOT AVAILABLE light is illuminated at Panel XU2.

If the main generator trips on reverse power, EDG 3 will do which ONE (1) of the following?

- A. start immediately.
- B. not start under any circumstance.
- C. start immediately only after the DG lockout is manually reset.
- D. start 20 seconds after the DG lockout is reset by the auto start logic.

Answer: A

43. 271000A206 001

Unit 2 is in plant startup at 2% rated thermal power.

Mechanical vacuum pumps are used to provide initial evacuation of the main condenser shell. Which ONE (1) of the following describes the non-condensibles flow path?

A. The non-condensibles are evacuated via a 1.8-minute holdup volume, bypassing the AOG System prior to transport to the Main Stack.

B. The non-condensibles are evacuated via a 30-minute holdup volume, bypassing the AOG System prior to transport to the Main Stack.

C. The non-condensibles are evacuated via the AOG Building. They are admitted to a refrigerated cooler condenser where the stream is cooled and dehumidified by passing through coils immersed in a refrigerated glycol bath prior to transport to the Main Stack.

D. The non-condensibles are evacuated via an off-gas recombiner, a condenser to remove moisture, a 30-minute delay pipe prior, then to the AOG System prior to transport to the Main Stack.

Answer: A

44. 272000 GEN 2.3.1 001

Which ONE (1) of the following provides a high radiation trip of the Control Building Ventilation ?

A. 1 mr/hr measured at either air intake duct detector APP-UA-03,6-7.

B. 1 mr/hr measured at air intake duct detector APP-UA-03 only.

C. 1 mr/hr measured at each of the air intake duct detector APP-UA-03,6-7.

D. 1 mr/hr measured by the area radiation monitor in the Control Room.

Answer: D

45. 272000K602 001

A DC power supply failure in the ARM System will cause which ONE (1) of the following?

A. Upscale HI alarm.

B. Upscale HI HI alarm.

C. Downscale alarm.

D. Detector alarms, but the indication fails as is.

Answer: C

46. 286000K202 001

Which ONE (1) of the following is the of the two jockey pumps in the fire suppression system?

A. To supply water to the fire main to prevent the fire pumps from starting during normal conditions.

B. To supply water to the Fire Protection Water Tank from the Brunswick County water supply.

C. To supply water to the Fire Protection Water Tank from the Well Water System wells.

D. To supply water to the main fire header, if the fire pumps cannot maintain system pressure.

Answer:

47. 290001A301 001

Following a LOCA, the four 72" Emergency Butterfly Isolation dampers located in the RB HVAC receive an isolation signal. Which ONE (1) of the following describes how quickly the four 72" Emergency Butterfly Isolation dampers close and how long the dampers must remain closed?

A. 1) They must close within four seconds, 2) They must remain closed until SBGT can maintain a negative pressure of 0.25" H<sub>2</sub>O within the reactor building.

B. 1) They must close within sixty seconds, 2) They must remain closed until SBGT can maintain a negative pressure of 0.25" H<sub>2</sub>O within the reactor building.

C. 1) They must close within four seconds, 2) They must remain closed for the duration of the accident, which is 30 days in the LOCA analysis.

D. 1) They must close within sixty seconds, 2) They must remain closed for the duration of the accident, which is 30 days in the LOCA analysis.

Answer: A

48. 290002K307 001

Which ONE (1) of the following is concerning the head to vessel flange seal single o-ring failure?

A. Failure of the outer o-ring flange seal is detected by the primary containment leak detection system.

B. Failure of the inner o-ring flange seal is detected by the primary containment leak detection system.

C. Failure of the inner o-ring flange seal is detected an annunciator, A-02 5-6 RPV FLANGE SEAL LEAK.

D. Failure of the inner o-ring flange seal is detected by an annunciator, A-02 5-6 RPV FLANGE SEAL LEAK.

Answer: C

49. 290003K401 001

There is a small fire in a the MCR kitchen. The fire is limited to the inside of the microwave, but has produced a great deal of smoke. The SCO anticipates an automatic start signal and places the ∅Aö filtering train control switch to the ON position which initiates a starting sequence for the CREV fan. Approximately 10 minutes after this occurs, a high

radiation level, unrelated to this event generates a CREV initiation signal. Which ONE (1) of the following describes how the CREV will operate upon receipt of an initiation signal?

- A. The washroom fan did not get a trip signal.
- B. The mechanical equipment room fans did not get a trip signal.
- C. The cable spreading room fans did not get a trip signal.
- D. The B CREV fan did not auto start.

Answer: D

50. 295001AK101 001  
The primary natural circulation flow has reduced following an abnormal transient.

Natural circulation can continue provided which ONE (1) of the following occurs?

- A. A closed recirculation loop exists between in the core bypass region and the boiling region within the fuel channel due to the difference in the water's density, as long as water is available in the upper plenum region.
- B. Water above the peripheral fuel bundles of the core is subcooled due to the low decay heat production from these bundles. Natural circulation will occur due to this dense water flowing upward through the peripheral bundles to the core inlet plenum.
- C. A closed recirculation loop exists between in the upper plenum region and the boiling region within the fuel channel due to the difference in the water's density, as long as water is available in the core bypass region.
- D. Water below the peripheral fuel bundles of the core is subcooled due to the low decay heat production from these bundles. Natural circulation will occur due to this dense water flowing upward through the peripheral bundles to the core inlet plenum.

Answer: A

51. 295002K103 001  
Unit 1 is operating at 74 % power.

The inlet to filter/demin is maintained 140 F

The operating circulating water pumps trips.

In accordance with 0AOP-37.0, Low Condenser Vacuum, which ONE (1) of the following are your immediate actions?

- A. MANUALLY SCRAM the reactor and ENTER EOP-01.

B. RESTART a circulating water pump, REDUCE reactor power, as necessary, to maintain condenser vacuum greater than 25" Hg. If a more rapid power reduction is desired, the SCO may direct the use of Select Rod Insert.

C. RESTART a circulating water pump, REDUCE reactor power, as necessary, to maintain condenser vacuum greater than 25" Hg. If a more rapid power reduction is desired, the SCO may not direct the use of Select Rod Insert.

D. RESTART a circulating water pump, REDUCE reactor power, as necessary, to maintain condenser vacuum greater than 25" Hg. Open FW-FV-177 Inlet Isolation Valve, FW-V10 and THROTTLE OPEN Condensate/Feedwater Cleanup Recirculation Valve.

Answer: C

52. 295003 GEN 2.4.16 001

Which ONE (1) of the following identifies the procedures to prepare for severe weather, restore AC power, and safely shutdown?

A. Station Blackout Coping Analysis Report 8S42-P-101.

B. Generic Issues Design Basis Document DBD -111.

C. Regulatory Guide (RG) 1.155, "Station Blackout."

D. NUMARC 87-00.

Answer: A

53. 295003K306 001

The crew has entered 0AOP-36.2, Station Blackout. Containment pressure is 22 psig. There is some indication fuel failure is imminent. One Diesel Generator has been restored and is supplying ALL AC power. The crew is attempting to re-established core cooling, but has not yet been successful.

The crew has reached step 3.2.18 Total Containment Isolation. Which ONE (1) of the following actions are required?

A. Isolate containment.

B. Reduce containment pressure, to less than 15 psig, then isolate containment.

C. Restore core cooling, then isolate containment.

D. Do not isolate containment until, core cooling has been reestablished and containment pressure has been lowered or there is evidence of fuel damage.

Answer: A

54. 295004K203 001

Unit 1 has just received annunciator A03 22 AUTO DEPRESS CONTROL POWER FAILURE. Subsequent investigation reveals no light indication for any ADS/SRV at panel H12P601.

Based on these indications Which ONE (1) of the following is the probable cause and how is ADS/SRV operation affected?

A. Loss of DC power supply from panel 3A only. ADS Logic "B" and ADS/SRV solenoids have normal power from panel 3B. ADS and SRV pressure relief will function.

B. Loss of DC power supply from panel 3B only. ADS Logic "B" and ADS/SRV solenoids have alternate power from panel 3A. ADS and SRV pressure relief will function.

C. Loss of DC power supply from panel 3A and 3B. ADS logics and ADS/SRV solenoids have no power. SRV pressure relief will function.

D. Loss of DC power supply from panel 3A and 3B. ADS logics and ADS/SRV solenoids except SRV "D" have no power. SRV pressure relief will function and SRV "D" is operable from Panel P601.

Answer: C

55. 295005K103 001

Unit 1 is 100 % power (EOC) when the main turbine generator trips due to high vibration. Following the closure of the TSVÆs, which ONE (1) of the following describe the Units respond?

A. With the TSVs shut, reactor pressure rises rapidly, collapsing voids. Negative reactivity is added and reactor power decreases, the control rods can insert additional negative reactivity to shutdown the reactor. BPV open as steam line pressure increases, SRVs open and level decreases.

B. With the TSVs shut, steam line pressure increases, the BPVÆs open, the reactor pressure begins to decrease. Positive reactivity is added as void production increases, reactor power increases before control rods can insert enough negative reactivity to shutdown the reactor. SRVs open and vessel level increases.

C. With the TSVs shut, reactor pressure rises rapidly, collapsing voids. Positive reactivity is added and reactor power increases before control rods can insert enough negative reactivity to shutdown the reactor. BPV open as steam line pressure increases, SRVs open and level increases.

D. With the TSVs shut, reactor pressure rises rapidly, collapsing voids. Positive reactivity is added and reactor power increases before control rods can insert enough negative reactivity to shutdown the reactor. BPV open as steam line pressure increases, SRVs open and level decreases.

Answer: D

56. 295006K103 001

Unit 2 is operating at 25% power with the generator synchronized to the grid. BOP buses 2C and 2D have been transferred to the UAT. Alarm A5 68 TURB CV CLOS/SV/RPT TRIP BYPASS is sealed in.

A main turbine trip occurs resulting in a generator backup lockout and a fast transfer of BOP buses 2C and 2D to the SAT. The reactor does NOT scram and no diesel generators auto start.

The operators should do which ONE (1) of the following:

- A. immediately insert a manual reactor scram.
- B. depress the auto start pushbutton on all four diesel generators.
- C. commence a plant shutdown per GP05.
- D. maintain present power, determine and correct the cause of the turbine trip.

Answer: D

57. 295007A105 001

While Unit 2 is operating at full power, nine (9) SRVs open. Pressure is observed to be 1111 psig at the RTGB. Power remains near 100 percent. Which ONE (1) of the following protective functions have failed to occur as a result of high reactor pressure?

- A. Reactor Protection System scram ONLY.
- B. Reactor Protection System scram AND Alternate Rod Insertion scram ONLY.
- C. Reactor Protection System scram AND Recirculation Pump Trip ONLY.
- D. Reactor Protection System scram, Alternate Rod Insertion scram AND Recirculation Pump Trip.

Answer: A

58. 295007A203 001

Unit 1 Plant conditions:

Reactor shutdown.

Reactor pressure: 1000 psig.

RCIC pump is running, but is only delivering about 200 gpm due to partially closed discharge valve.

No other injection available.

Reactor water level is -35 inches and very slowly decreasing

Primary Containment parameters are normal

Based on the current plant conditions which ONE (1) of the following should the operating crew do?

- A. Enter the Alternate Emergency Depressurization Procedure.

- B. Inhibit ADS.
- C. Enter the Steam Cooling Procedure.
- D. Emergency Depressurize the RPV.

Answer: B

59. 295008 GEN 2.1.32 001

STEP 7 in Level/Power Control states: HAS IT BEEN DETERMINED THAT THE REACTOR WILL REMAIN SHUTDOWN UNDER ALL CONDITIONS WITHOUT BORON. Which ONE (1) of the following is the basis for this step?

- A. that no control rod is withdrawn beyond Position 04 and the reactor will also remain shutdown under all conditions with any control rod full-out and all other control rods full-in.
- B. that no control rod is withdrawn beyond Position 08 and the reactor will also remain shutdown under all conditions with any control rod full-out and all other control rods full-in.
- C. that no control rod is withdrawn beyond Position 04 and the reactor will also remain shutdown under all conditions with any two non-adjacent control rod full-out and all other control rods full-in.
- D. that no control rod is withdrawn beyond Position 08 and the reactor will also remain shutdown under all conditions with any two non-adjacent control rod full-out and all other control rods full-in.

Answer: A

60. 295009K203 001

A plant transient occurred resulting in the loss of normal feedwater. The reactor operator observes the REACTOR WATER LEVEL HIGH/LOW annunciator alarming and the Reactor Water Cleanup System isolation valves have closed on low reactor water level.

Which ONE (1) of the following is the expected status of the Reactor Recirculation Pumps?

- A. Both pumps are operating at Speed Limiter #1.
- B. Both pumps are operating at Speed Limiter #2.
- C. Both pump drive motor breakers are tripped.
- D. Both pumps are operating with the scoop tubes locked.

Answer: C

61. 295010 GEN 2.4.4 001

Unit Two has just experienced a reactor scram due to a small break LOCA inside the primary containment in which six control rods failed to fully insert. Plant conditions are as follows:

Reactor power indication:	IRM's inserted, on range 2 and slowly decreasing
Drywell pressure:	3.1 psig
Reactor pressure:	800 psig
Reactor water level:	+190 inches and steady
Six control rod positions	Between 08 and 32

After entry into EOP01RSP, which ONE (1) of the following are the required operator actions?

- A. Enter EOP01LPC and execute concurrently with EOP02PCCP.
- B. Commence a normal cooldown to the Main Condenser and exit to GP05.
- C. Perform EOP01LEP02, exit EOP01RSP and execute concurrently EOP01LPC, EOP02PCCP, and EOP01RSP.
- D. Enter EOP01RVCP to control reactor pressure and level and execute it concurrently with the reactor scram procedure.

Answer: A

62. 295010AK103 001  
Unit 2 was operating at 100% power.

A large break LOCA has occurred in containment.

Which ONE (1) of the following describes what will happen with the vessel level instrument legs?

- A. The compensated level instrument legs are at a higher temperature than the uncompensated legs, the compensated level instrument legs will boil first.
- B. The uncompensated level instrument legs are at a higher temperature than the compensated legs, the uncompensated level instrument legs will boil first.
- C. Both instrument legs are at the same temperature. There is a thermal time constant of approximately 4 to 6 minutes for the uncompensated legs, the compensated level instrument legs will boil first.
- D. Both instrument legs are at the same temperature. There is a thermal time constant of approximately 4 to 6 minutes for the compensated legs, the uncompensated level instrument legs will boil first.

Answer: A

63. 295012 GEN 2.4.48 001

While executing AOP-14.0, Abnormal Primary Containment Conditions due to drywell high temperature conditions, average drywell temperature reaches 1535F.

Which ONE (1) of the following is the required actions?

- A. Continue in AOP-14.0.
- B. Enter EOP-02-PCCP and exit AOP-14.0.
- C. Exit AOP-14.0, entry conditions NO longer exist.
- D. Enter EOP-02-PCCP and perform concurrently with AOP-14.0.

Answer: B

64. 295012K301 001  
Unit 1 is at 100 % power

Drywell average air temperature is 148 and increasing as read on CAC-TR-4426-1 and CAC-TR-4426-2A, Channel 2, located on Panel XU-3.

Drywell average air temperature 147 and increasing as read on CAC-TY-4426-1 and CAC-TY-4426-2 located in the back panels.

Which ONE (1) of the following procedures should the operating crew perform?

- A. Enter 1-OP-37.1 Reactor Building Heating and Ventilation System Operating Procedure and ensure that all available Drywell Coolers are operating.
- B. Enter 1-OP-44 Turbine Building Close Cooling Water System Operating Procedure and ensure that TBCCW is correctly aligned to the drywell cooling units.
- C. Enter 0EOP-02-PCCP and ensure that drywell air temperature is reduced.
- D. Enter 1-OP-24 Containment Atmosphere Control System and ensure all purge exhaust fans are operating.

Answer: A

65. 295013K301 001  
When directed from EOP01, HPCI suction transfer logic is defeated per EOP-01-SEP-10 in order to do which ONE (1) of the following:

- A. ensure that HPCI cooling is maintained.
- B. maintain HPCI suction aligned to the CST under all conditions.
- C. allow HPCI operation in pressure control with an initiation signal present.

D. ensure that HPCI can be aligned for Alternate Boron Injection per EOP-01-LEP-03.

Answer: A

66. 295014A203 001

Unit Two (2) has experienced a loss of Stator Water Cooling, stator amperage is 17423 amps. Emergency repairs to the temperature control valve (TCV) are in progress. The RO has taken action to reduce power. After 3.5 minutes stator amperage is now 5592 amps. Which ONE (1) of the following should the RO be directed to accomplish next?

- A. ensure that the main turbine has tripped.
- B. continue to lower power to reduce stator amperage.
- C. enter AOP 3.0, Positive Reactivity Addition.
- D. stabilize reactor power until repairs of the TCV are complete.

Answer: A

67. 295015A103 001

A Condensate header rupture in the Cable Spread area has resulted in a loss of both RPS distribution panels and a Reactor scram. Plant conditions:

23 control rods have failed to fully insert  
137 blue scram lights lit on the full core display

Which ONE (1) of the following methods of Alternate Control Rod Insertion per LEP-02 is available?

- A. Vent the scram air header.
- B. Insert control rods using RMCS.
- C. Utilize repeated manual scrams.
- D. Scram control rods using single rod scram.

Answer: B

68. 295016 GEN 2.1.2 001

Following an accident involving the release of high concentrations of chlorine Unit 1 is directed to shutdown. Which ONE (1) of the following procedure should be used to shutdown?

- A. 0AOP-32.0 Plant Shutdown from Outside the Control Room.
- B. Alternative Safe Shutdown Procedure, 0ASSD-02, Control Building.
- C. 0GOP-05, Unit Shutdown.

D. 1-EOP-01-RSP, Reactor Scram Procedure, then transition to 0GOP-05, Unit Shutdown.

Answer: A

69. 295016A206 001

Following an accident involving the release of high concentrations of chlorine Unit 1 is in 0AOP-32.0 Plant Shutdown from Outside the Control Room. The operating crew has just establish a cooldown using RHR. The operating crew has been directed to take the unit to cold shutdown and wait for the clean up to be completed and the chlorine levels to drop. The unit will be restarted when the emergency is over. Which ONE (1) of the following describe the 0AOP-32.0 cooldown limits that are applicable during this cooldown process.

A. The maximum cooldown rate of 50 °F in any one-hour period. The cooldown must stop at 100 °F.

B. The maximum cooldown rate of 50 °F in any one-hour period. The cooldown must stop at 70 °F.

C. The maximum cooldown rate of 100 °F in any one-hour period, until a recirculation loop temperature is less than 300 °F then the cooldown rate should be decreased to less than 50 °F/hr. The cooldown must stop at 70 °F.

D. The maximum cooldown rate of 75 °F in any one-hour period, until a recirculation loop temperature is less than 300 °F then the cooldown rate should be decreased to less than 50 °F/hr. The cooldown must stop at 100 °F.

Answer: C

70. 295017 GEN 2.3.3 001

Following a high offsite release, the site has implemented 0PEP-03.7.6 Emergency Exposure Control. Under these conditions, which ONE (1) of the following guidelines do not apply for plume exposures for environmental monitoring teams?

A. Radiation exposures shall be maintained within the BNP administrative exposure guides and/or less than the radiation exposure limits in 10CFR20.

B. The risk of not performing the task shall be evaluated against the anticipated or allowable exposure.

C. Personnel should not enter any area where dose rates are unmonitored or immeasurable without Radiological Controls coverage.

D. Dosimetry equipment capable of measuring the anticipated maximum exposure and type of radiation shall be worn by personnel receiving emergency exposures.

Answer: A

71. 295018K301 001

Unit One is operating at 65% power. The following alarms annunciate within approximately 5 minutes.

- RBCCW A PUMP DISCH HEADER PRESS LOW annunciates (UA-03, 2-5).
- RBCCW HEAD TANK LEVEL HI/LO annunciates (UA-03, 1-5).
- PUMP A SEAL CLOSED CLG WTR FLOW LOW annunciates (A-06, 1-4)
- Various high temperature alarms on equipment supplied by RBCCW.
- RBCCW HX OUTLET HDR TEMP HI annunciates (UA-03, 1-3)
- High Drywell Pressure and Temperature Alarms annunciate.
- RWCU isolates.

RBCCW discharge header pressure is stable at 65 psig.

Which ONE (1) of the following describes the appropriate actions for this condition?

- A. ENSURE that RBCCW discharge header pressure remains greater than 60 psig by starting available RBCCW pumps as needed AND isolate any identified leaks due to pipe rupture.
- B. TRIP all RBCCW Pumps, CLOSE RBCCW Containment Isolation Valves, RCC-V28 and RCC-V52, TRIP RWCU Pump(s), do not reduce the speed of both Reactor Recirculation Pumps to minimum, AND isolate any identified leaks due to pipe rupture.
- C. TRIP all RBCCW Pumps, CLOSE RBCCW Containment Isolation Valves, RCC-V28 and RCC-V52, and REDUCE the speed of both Reactor Recirculation Pumps to minimum.
- D. TRIP all RBCCW Pumps, CLOSE RBCCW Containment Isolation Valves, RCC-V28 and RCC-V52, and REDUCE the speed of both Reactor Recirculation Pumps to minimum, Manually SCRAM the reactor, ENTER Reactor Scram Procedure, EOP-01-RSP, TRIP both Reactor Recirculation Pumps AND isolate any identified leaks due to pipe rupture.

Answer:

72. 295019A101 001

If the noninterruptable instrument air system lowers to 95 psig which ONE (1) of the following occur?

- A. Stand by Reactor Building air compressor starts.
- B. Backup Nitrogen Rack Isolation Valves open to align the nitrogen bank.
- C. Air Compressors A, B, and C start and then load.
- D. PV-706-1 and PV-706-2 close to isolate the service air header.

Answer: A

73. 295021 GEN 2.4.22 001

During Alternate Shutdown Cooling using SRVs, a note in the procedure identifies RHR as the preferred pump for injection into the reactor vessel. Which ONE (1) is the basis for this note?

- A. To reduce stress induced in the RPV vessel and piping when injecting cold water.
- B. To prevent false RPV low level signal when condensing pot reference leg is uncovered.
- C. Because the flow path is up through the core, therefore providing better decay heat removal.
- D. Because the RHR system has a lower shutoff head, requires a lower NPSH and has a higher capacity.

Answer: C

74. 295021A104 001

Unit 2 is shut down, with Shutdown Cooling in service on the "B" loop of RHR. Core Spray loop "A" is considered the primary source of RPV makeup. CS "A" is in a normal standby lineup except that BOTH the Inboard Injection valve, E21F005A, and the Outboard Injection Valve, E21F004A, are CLOSED.

A small break LOCA causes the isolation of Shutdown Cooling, requiring Core Spray injection to maintain RPV level. RPV level is currently 80 inches lowering, and drywell pressure 1.5 psig rising. The "2A" CS pump is started and the E21F005A valve is OPENED. When the control switch for the E21F004A is taken to open, the valve remains closed.

Which ONE (1) of the following action(s) should be taken to establish an injection flowpath?

- A. The F004A valve must be opened locally.
- B. The F004A valve can only be open when the LL3 signal is received.
- C. An initiation signal must be received before the F004A and F005A can be opened simultaneously.
- D. The F005A valve should be shut. The F004A valve can then be opened; and the F005A valve reopened.

Answer: D

75. 295022A201 001

Unit 1 is operating at 100 % power with one control rod scram accumulator inoperable. The associated control scram time was within the limits of Table 3.1.4-1 during the last scram time test. Which ONE (1) of the following describe the status of the CRD system?

- A. The control rod may be declared "slow," but may not satisfy the required scram times in Table 3.1.4-1.

- B. The associated control rod is declared inoperable and LCO 3.1.3 is entered.
- C. The affected control rod must be fully inserted and disarmed.
- D. CDR system must be declared inoperable, immediately insert a manual reactor scram.

Answer: A

76. 295022K101 001

Unit 1 is in startup with a reactor pressure of 925 psig. The operating CRD pump has failed. Initial attempts to restart the CRD pump has failed. The crew enters 0AOP-02.0 and takes appropriate actions.

Step 3.2.4 states:

IF unable to move control rods, THEN PERFORM the following:

1. IF the operating CRD Pump has failed, THEN RESTART the CRD Hydraulic System following loss of a CRD Pump in accordance with 1(2)OP-08.

a. IF reactor pressure is below 800 psig (e.g., during startup or shutdown evolutions), AND CRD pressure CANNOT be restored with either CRD Pump, THEN INSERT a manual reactor SCRAM.

Which ONE (1) of the following actions do you take?

- A. INSERT a manual reactor SCRAM.
- B. Lower reactor pressure to below 800 psig, then INSERT a manual reactor SCRAM.
- C. Do NOT INSERT a manual reactor SCRAM, continue on with the procedure.
- D. Do NOT INSERT a manual reactor SCRAM, wait for TSC guidance.

Answer: C

77. 295023 GEN 2.1.1 001

A core reload sequence is in progress in accordance with the OFH-11, Refueling when the neutronic bridge fails. Which ONE (1) of the following describe the appropriate actions?

- A. Fuel movement is not allowed until the bridge is reestablished.
- B. The affected fuel cell must be unloaded until the bridge is reestablished.
- C. Control rod withdrawal is not allowed until the bridge is reestablished.
- D. The refueling floor must be evacuated of all non-essential personnel until the bridge is reestablished.

Answer: C

78. 295023A205 001  
Plant conditions are as follows:

Unit 1 at 75% power, Unit 2 refueling  
Unit 1 experiences a trip of both feedwater pumps resulting in a reactor scram and lowering reactor water level.

Following the scram, offsite power is lost to both units. All 4 diesel generators start and synchronize to their respective buses.

Both loops of Unit 1 RHR are unavailable.

Which ONE (1) of the following is the correct event classification?

- A. Unusual event.
- B. Alert.
- C. Site Area Emergency.
- D. General Emergency.

Answer: B

79. 295024A104 001

Unit 2 was recovering from a high drywell pressure scram. The RCIC failed to start. There is a complete loss of power from Division I, DC switchboard 2A. Which ONE (1) of the following will occur?

- A. HPCI will not maintain level, ADS/LPCI will be required.
- B. Half Reactor Scram Signal.
- C. Group 1 Isolation with Outboard MSIV's only.
- D. Group 1 Isolation with both Inboard and Outboard MSIV's.

Answer: A

80. 295025K105 001

While operating at 100% power the following occur automatically:

K5A is deenergized

K5C is energized

K14A and E are deenergized

K14C and G are energized

The SV-117 Scram Pilot Solenoid Valves (Group I, II, III, and IV) are deenergize.

The SV-118 Scram Pilot Solenoid Valves (Group I, II, III, and IV) are energize.

Which ONE (1) of the following describes what has caused this to occur?

- A. N023A has sensed a High Reactor Pressure.

- B. N023B has sensed a High Reactor pressure.
- C. N023C has sensed a High Reactor Pressure.
- D. N023D has sensed a High Reactor Pressure.

Answer: A

81. 295026A201 001  
Unit 1 is at 100 % power.

HPCI pump flow testing is in progress.

SPTMS DIV. I BULK WTR TEMP SETPOINT TS1(UA-12 5-4) annunciator is in alarm.  
SPTMS DIV. II BULK WTR TEMP SETPOINT TS1(UA-12 5-5) annunciator is in alarm.  
Suppression Pool temperature is 96 and increasing as read on CAC-TR-4426-1A and CAC-TR-4426-2A, Channel 1, located on Panel XU-3.  
Suppression Pool temperature is 95 and increasing as read on CAC-TY-4426-1 and CAC-TY-4426-2, located in the back panels.

Which ONE (1) of the following are the next required actions?

- A. Ensure all available RHR Loops are correctly aligned in the Suppression Pool Cooling mode in accordance with 1-OP-17.
- B. Perform the Required Actions in accordance with Technical Specification 3.6.2.1.
- C. Enter 0EOP-02-PCCP.
- D. Ensure Unit 1 Service Water Discharge Outlet Valve, 1-SW-V442, is open.

Answer: B

82. 295026K201 001  
Following a LOCA, the reactor will not remain shutdown under all conditions without boron. The crew enters Level/Power Control procedure. Suppression Pool is 145 F temperature continues to rise. The systems used for control of reactor water level must be operated to adequately cool the core and do which ONE (1) of the following?

- A. to maximize available Suppression Pool water volume to ensure a water source for ECCS systems.
- B. to minimize boron dilution, ensure cold water injection and continue HPCI flow to promote boron mixing.
- C. to minimize core inlet subcooling, thereby preventing or mitigating the consequences of any large irregular neutron flux oscillations induced by neutronic/thermal-hydraulic instabilities.

D. to minimize boron dilution, and maximize Suppression Pool level to ensure ECCS systems have adequate NPSH.

Answer: C

83. 295027 GEN 2.4.11 002

Which ONE (1) of the following conditions may be mitigated by entry into AOP-14.0 WITHOUT requiring entry into EOP-02-PCCP?

- A. Drywell pressure rises to 1.8 psig.
- B. Suppression Pool level rises to 26.5".
- C. Suppression Pool temperature rises to 106 °F
- D. Drywell average air temperature rises to 145 °F.

Answer: D

84. 295028A203 001

Following a line break in the Unit One (1) drywell, plant conditions are:

RPV water level	180" steady on N026A/B
RPV water level	155" steady on N004A/B/C
RPV water level	190" steady on N027A/B
RPV pressure	50 psig
Drywell ref leg temp	340 °F
Drywell average temp	255 °F

RPV water level may be determined using by which ONE (1) of the following?

- A. N026A/B only.
- B. N026A/B and N027A/B only.
- C. N026A/B and N004A/B/C only.
- D. N026A/B and N027A/B and N004A/B/C.

Answer: C

85. 295029K101 001

In EOP-01-SEP-02 the initiation of drywell sprays requires that the suppression pool water level to be below +21 inches.

Which ONE (1) of the following is the basis of this restriction?

- A. Provides protection for the operation of the suppression chamber-to-drywell vacuum breakers.
- B. Ensures adequate NPSH for RCIC.
- C. Ensures adequate NPSH for HPCI.

D. Ensures adequate NPSH for Core Spray Pumps.

Answer: A

86. 295030K301 001

During a Unit Two (2) accident fuel failure exists. Emergency Depressurization is required. Plant conditions are:

RPV water level	<TAF
MSIVs	Closed by direction of RRCP
RPV pressure	1100 psig
RCIC	Injecting to the RPV
HPCI	Injection valve will not open
SRVs	Cannot be opened, cycling on lift setpoint

The operating crew should enter EOP-01-AEDP and do which ONE (1) of the following?

- A. operate HPCI in pressure control.
- B. operate HPCI and RCIC in pressure control.
- C. determine the reactor cannot be depressurized and enter SAMG01.
- D. bypass all Group 1 isolations, then rapidly depressurize to the Main Condenser.

Answer: D

87. 295031A204 001

Which ONE (1) of the following Emergency Operating Procedure limits allows peak fuel clad temperature to exceed 1500 °F?

- A. Maximum Core Uncovery Time Limit.
- B. Minimum Alternate Flooding Pressure.
- C. Minimum Zero-Injection Reactor Water Level.
- D. Minimum Steam Cooling Reactor Water Level.

Answer: C

88. 295031K302 001

Unit 1 has experienced an accident that resulted in a loss of all Reactor Water Level Instrumentation. The reactor has been shutdown for fifteen (15) hours.

Conditions of Reactor Flooding Procedure (EOP-01-RX-FP) have been established that allow terminating all injection to the reactor vessel.

The Maximum time injection may be terminated without being able to determine Reactor Water Level is approximately which ONE (1) of the following?

- A. 4.0 minutes.
- B. 6.0 minutes.
- C. 8.0 minutes.
- D. 14.0 minutes.

Answer: C

89. 295032K303 001

The Main Steam Line Tunnel is monitored for high temperature conditions and will automatically isolate the Main Steam Isolation Valves when the steam tunnel temperature reaches 190 °F in order to do which ONE (1) of the following?

- A. protect the integrity of the secondary containment and ensure the continued operability of safe shutdown equipment.
- B. minimize radioactive releases to the environment and limit the inventory loss from the reactor under all accident conditions.
- C. prevent exceeding the Environmental Qualification temperature limits on the MSIV control air solenoids.
- D. limit the escape of radioactivity from the MSL Tunnel to the Reactor Building HVAC system.

Answer: B

90. 295033K204 001

The Drywell Purge Exhaust Fans will trip and isolation valves will close on which ONE (1) of the following?

- A. Reactor Building Roof Vent Radiation Hi Hi (CACAQH1264).
- B. Any SBGT Auto Initiation signal.
- C. Reactor Building isolation damper closure.
- D. Any PCIS Group 6 isolation signal.

Answer: B

91. 295034A102 001

Refueling is in progress on unit 1. The PROCESS RX BLDG. VENT RAD HI-HI (UA-03 3-5) has just alarmed.

THEN the following actions occur:

Reactor Building ventilation isolates  
SBGTS auto starts

Group 6 valves auto isolate

Which ONE (1) of the following has occurred?

- A. HELB is present in the Reactor Building.
- B. HELB is present in containment.
- C. Reactor Building sprinkler system has malfunctioned.
- D. New or Spent fuel has been damaged.

Answer: C

92. 295035K101 001

Reactor building pressure is an entry condition into the Secondary Containment Control Procedure (SCCP); however, it is not a parameter which has any directly associated operator actions. Which ONE (1) of the following is the basis for this?

- A. Only a small operating margin exists between its normal operating value and the pressure at which the secondary containment blowout panels release.
- B. Only a small operating margin exists between its normal operating value and the automatic initiation of Reactor Building HVAC.
- C. This procedure is only entered after the secondary containment blowout panels release.
- D. This procedure is only entered after the automatic or manual initiation of Reactor Building HVAC.

Answer: A

93. 295037A202 001

During an ATWS on Unit Two (2), plant conditions are:

RPV water level	60" (N036/N037)
APRMs	Downscale
RPV pressure	750 psig, lowering
SRVs	One valve failed open
Drywell ref leg temp	205 °F
SLC	Injecting boron (two pumps)
CRD	Two pumps running
HPCI	Injecting @ 1000 gpm

Assuming that RPV water level remains constant as RPV pressure continues to lower, emergency depressurization must be performed when RPV pressure drops below which ONE (1) of the following?

- A. 275 psig, HPCI may not inject during depressurization.

- B. 600 psig, HPCI may not inject during depressurization.
- C. 275 psig, HPCI may continue to inject during depressurization.
- D. 600 psig, HPCI may continue to inject during depressurization.

Answer: B

94. 295037K213 001

Following a seismic event in which Unit Two (2) has lost offsite power, plant conditions are as follows:

APRM downscales	illuminated
Control Rods	64 not full in
SLC Squib valves	failed to fire
CST level	2' ; the CST is ruptured
RPV Level	50" ; RCIC running on torus suction

Which ONE (1) of the following methods of EOP01LEP03, Alternate Boron Injection, must the operator use to inject boron?

- A. CRD System
- B. HPCI and/or RCIC
- C. RWCU with borax
- D. Condensate System

Answer: C

95. 295038 GEN 2.4.7 001

During execution of the Radioactivity Release Control Procedure, a manual scram is first required to be inserted if a primary system leak outside the Reactor Building is the source of the radioactivity release, and the release rate:

- A. exceeds Technical Specification limits.
- B. exceeds 10 times Technical Specification Limits.
- C. exceeds the Emergency Action Level (EAL) for a Site Area Emergency.
- D. approaches or exceeds the Emergency Action Level (EAL) for a General Emergency.

Answer: C

96. 295038K103 001

When calculating off-site dose release rates in accordance with OPEP-03.6.1, Release Rate Based Upon Stack/Vent Readings, Source terms for the stack and the source terms for

alarming vent monitors are calculated and applied separately to dose calculations. Which ONE (1) of the following is the reason for this?

- A. The stack monitor measures gross activity, while the alarming vents measure specific isotopic mixtures.
- B. If one vent is alarming or reading abnormally high it will too adversely effect the source term.
- C. stack source terms represent elevated and the vents are ground level releases.
- D. The stack monitor measures Gamma release, the vents measure beta, gamma and particulate release.

Answer: C

97. 300000K613 001

During a review of material in the warehouse, a full set of Reactor Instrument Air Non-Interruptible(RNA) in-line filters were discovered. A further review of maintenance records indicates that the system was reassembled without the filters. The Instrument Air Non-Interruptible (IAN) has run for the entire cycle without an interruption.

Which ONE (1) of the following describe the impact of running the RNA without the in-line filters?

- A. No impact, the RNA in-line filters are only used during outage to filter the breathing air supply in Primary Containment.
- B. No impact the IAN which feeds the RNA has a redundant set of filters.
- C. Poorer reliability of some pneumatic loads inside the Primary Containment.
- D. Poorer reliability of some divisional check valves.

Answer: D

98. 400000K102 001

Which One (1) of the following listed loads, is the largest load on the RBCCW system during normal operations?

- A. Reactor Recirculation System Pump Coolers and Motor Coolers.
- B. Fuel Pool Heat Exchanger A.
- C. Penetration Cooling System.
- D. Drywell Cooling Unit A.

Answer: B

99. 500000K306 001

During accident conditions, Primary Containment is being vented per SEP-01 due to hydrogen concentrations in the drywell above minimum detectable.

Which ONE (1) of the following describes why is it preferred to vent from the suppression chamber if the hydrogen is in the drywell?

- A. Faster dilution of the hydrogen gas.
- B. Minimizes offsite radioactive release rates.
- C. Condenses any steam from the drywell atmosphere.
- D. Prevents operation of the torus to drywell vacuum breakers.

Answer: B

100. 600000K101 001

You are a member of the fire brigade. You are informed that you are responding to a Class D fire. Which ONE (1) of the following describe the fire that you will likely encounter?

- A. wood, paper and cloth.
- B. combustible metals.
- C. flammable liquids, greases, and gases.
- D. energized electrical equipment.

Answer: B

101. GEN 2.1.10 001

Unit 2 is operating single loop at 25% power 958 psig. Which ONE (1) of the following is the fuel cladding integrity Safety Limit that applies?

- A. FRACTION OF CORE BOILING BOUNDARY (FCBB) shall not be greater than 1.0.
- B. MINIMUM CRITICAL POWER RATIO (MCPR) shall not be less than 1.10.
- C. AVERAGE PLANAR LINEAR HEAT GENERATION RATE (APLHGR) shall not exceed limits approved for the specific fuel type.
- D. REACTOR VESSEL WATER LEVEL shall be above the top of the active irradiated fuel.

Answer: B

102. GEN 2.1.14 001

You are the Shift Supervisor. A tornado which has been observed and confirmed on site. You determine that conditions warrant the declaration of an Alert or higher classification while a tornado is in still on site. The Emergency Response Facilities are not already staffed or activated,

In accordance with OPEP-02.6, Severe Weather which ONE (1) of the following should you do?

Instruct all personnel to seek shelter immediately and:

A. consider delaying ERO mobilization until conditions allow safe movement out of doors. However, notification of off-site authorities is not required.

B. man the ERO with any trained personnel that are available. However, notification of off-site authorities is not required.

C. consider delaying ERO mobilization until conditions allow safe movement out of doors. However, notification of off-site authorities is still required.

D. man the ERO with any trained personnel that are available. However, notification of off-site authorities is still required.

Answer: C

103. GEN 2.1.16 001

Which ONE (1) of the following is the purpose of the 230 KV Power Line Carrier Phone Subsystem located in the Control Room on RTGB Panel XU-5?

A. provides an additional backup to the Selective Signaling System. The system is used to contact the State and County Warning Points.

B. provides communications between the Technical Support Center, the Main Control Room and the remote shutdown panel.

C. provides communications between the Brunswick Control Room and the substations located on the 230 KV transmission lines leaving BNP.

D. provides communications between the Technical Support Center, the Main Control Room and the remote shutdown panel.

Answer: C

104. GEN 2.1.26 001

The Hydrogen Water Chemistry is in service when the Hydrogen Controller fails high. Which ONE (1) of the following should occur?

A. The Oxygen Controller will attempt to follow the output signal to keep the system at the desired ratio. When the Oxygen concentration reaches ~35%, the Hydrogen Water Chemistry System will trip.

B. The Oxygen Controller will attempt to follow the output signal to keep the system at the desired ratio. When the Oxygen concentration reaches ~35%, manual operator action will be required to trip the Hydrogen Water Chemistry System.

C. The Hydrogen Water Chemistry System will immediately trip isolating both Oxygen and Hydrogen addition.

D. The Hydrogen injection will reach the design maximum injection rate. The Oxygen Controller will adjust the oxygen level to keep the system at the desired ratio. A new steady state value will be reached and the Hydrogen Water Chemistry System will remain in service.

Answer: A

105. GEN 2.1.28 001

Unit One (1) startup is in progress in accordance with GP03. Verification of Reactor power using alternate indications was performed with the following conditions:

APRMs	13% Power
Bypass Valve	17% Equivalent Power
Steam Flow	18% Equivalent Power
LPRM	19% Power
Heat Balance	11% Power

Which ONE (1) of the following describes the effects on Power ascension? Power ascension may:

- A. continue without APRM GAF adjustment.
- B. continue only if APRM GAFs are adjusted to at least 17% power.
- C. continue only if APRM GAFs are adjusted to at least 19% power.
- D. not continue, contact Reactor Engineering to account for differences.

Answer: B

106. GEN 2.1.29 001

When performing O-AI-58.2, Equipment Control (EC) Tagging, which ONE of the following describes the minimum qualification of the persons who can approve and who manipulate equipment to the restored position.?

A. With Unit Supervisor permission, qualified operators shall manipulate the equipment to the restored position and EC tags.

B. With Unit Supervisor permission, qualified Maintenance Personnel shall manipulate the equipment to the restored position and EC tags.

C. With SRO permission, qualified Maintenance Personnel shall manipulate the equipment to the restored position and EC tags.

D. With SRO permission, qualified operators shall manipulate the equipment to the restored position and EC tags.

Answer: D

107. GEN 2.1.3 001  
OOI-01.02, Shift Routines and Operating Practices requires Which ONE (1) of the following?

A. Either the Unit SCO or the Shift Superintendent shall conduct a walkdown of the RTGB with one or both of the Control Operators and also conduct a walkdown of the backpanel area at least twice per shift.

B. Either the Unit SCO or the Shift Superintendent shall conduct a walkdown of the RTGB with one or both of the Control Operators and also conduct a walkdown of the backpanel area at least once per shift.

C. Both the Unit SCO or the Shift Superintendent shall conduct a walkdown of the RTGB with one or both of the Control Operators and also conduct a walkdown of the backpanel area at least once per 12 hours.

D. Both the Unit SCO or the Shift Superintendent shall conduct a walkdown of the RTGB with both of the Control Operators and also conduct a walkdown of the backpanel area at least once per day.

Answer: A

108. GEN 2.1.6 001  
Following an inadvertant HPCI initiation, the operating crew enters AOP-03.0, Positive Reactivity Addition.

The operator performs immediate actions from memory, then opens the procedure for guidance on supplementary actions.

Which ONE (1) of the following describes the level of use of this procedure?

A. Multiple Use.

B. Reference Use.

C. Information Use.

D. Exempt from level of use.

Answer: D

109. GEN 2.1.7 001  
Unit 1 is in refueling and Unit 2 is 100 % power. There is a seismic even. A review of the Seismic Monitoring System indicates that a Design Basis Earthquake has occurred. Which

ONE (1) of the following describes what has happened to structures, systems and components?

A. The primary steady-state stresses, including those originating from deadweight loads, operating loads, and operating temperatures when combined with seismic loads, were within the allowable working stress limits as set forth in the appropriate design Code or Standard. Local, self-limiting secondary stresses may have exceed allowable values to the extent permitted by the appropriate Code and standard.

B. The primary steady-state stresses, including those originating from deadweight loads, operating loads, and operating temperatures when combined with seismic loads, were within the allowable working stress limits as set forth in the appropriate design Code or Standard. Local, self-limiting secondary stresses will not have exceed allowable values to the extent permitted by the appropriate Code and standard.

C. The primary steady-state stresses, including those originating from deadweight loads, operating loads, and operating temperatures when combined with seismic stresses resulting from the amplified response at the appropriate level of the building to the were within 90 percent of the minimum guaranteed yield strength of the material. Local, self-limiting stresses may exceed yield strength to the extent permitted by the appropriate Code or Standard.

D. The primary steady-state stresses, including those originating from deadweight loads, operating loads, and operating temperatures when combined with seismic stresses resulting from the amplified response at the appropriate level of the building to the were within 90 percent of the minimum guaranteed yield strength of the material. Local, self-limiting stresses will not have exceed yield strength to the extent permitted by the appropriate Code or Standard.

Answer: C

110. GEN 2.2.11 001

A Temporary Procedure Change is processed per AP-004. This Temporary Change receives interim approval on 10/24/01.

Which ONE (1) of the following is the last date the Temporary Procedure Change may be used without receiving final approval?

- A. 11/01/01
- B. 11/08/01
- C. 11/24/01
- D. 10/24/02

Answer: B

111. GEN 2.2.13 001

The maintenance crew is about to install test equipment to inspect the welded joints on the Main Steam line piping downstream of the MSIVs.

The unit is in an outage.

Primary temperature is 135 °F.

Which ONE (1) of the following describe the type clearance that is required for this work?

- A. A clearance is not required.
- B. An Operations Clearance only.
- C. A Personal Clearance only.
- D. Both an Operations and a Personal Clearance.

Answer: A

112. GEN 2.2.15 001

In preparation for plant startup, the operator lining up the Nuclear Service Water System informs the Unit SCO that a valve is in the correct position but is listed incorrectly on the valve lineup sheet.

A temporary procedure change processed per OAP-04, Temporary Procedure Changes, requires which ONE (1) of the following?

- A. review by the PNSC and approval by the Manager Operations prior to use.
- B. interim approval by the Shift Superintendent holding a Senior Reactor Operator License on the effected unit and one other member of plant management prior to use.
- C. interim approval by the Unit SCO and one other member of management prior to use.
- D. only the Shift Superintendent approval since this does not change the intent of the procedure.

Answer: B

113. GEN 2.2.17 001

In accordance with 0-OI-01.08, Control of Equipment and System Status, under specified conditions of inoperability, a Log Entry LCO may not be utilized in lieu of entry into the LCOS Computer System/completion of the Backup Event Evaluation Check Sheet. For which ONE (1) of the following conditions?

The condition does not place the plant into Technical Specification 3.0.3 and:

- A. The LCO is not a result of a Work Order (W/O) for corrective maintenance, and the LCO exists for a short period of time, but does not extend through shift turnover.
- B. The Equipment is removed from service for testing required by Technical Specifications except when any the equipment is to be out of service for a period less than the time allowed by Technical Specifications.

- C. The LCO condition existed, but no longer exists.
- D. The LCO is for Pre-planned corrective maintenance.

Answer: D

114. GEN 2.2.29 001

During refueling which ONE (1) of the following must maintain a copy of the approved Core Component Sequence Sheet (Form 0ENP-24.12-3) and initial/date after each fuel movement.

- A. The Refueling Floor SRO and Spotter.
- B. The Refueling Floor SRO and the Crane/Platform Operator.
- C. The Refueling Floor SRO and the on-shift Reactor Engineer.
- D. The Crane/Platform Operator and the on-shift Reactor Engineer.

Answer: A

115. GEN 2.3.1 001

An Auxiliary Operator has received 1.75 Rem TEDE for the current year. The AO is needed to perform work in a 20 mrem/hr field. The work is expected to last 1.5 hours.

In accordance with NGG-MPM-0002, Radiation Control and Protection Manual, the worker requires which ONE (1) of the following?

- A. no special authorization since the annual administrative limit should not be exceeded.
- B. authorization from the Manager E&RC since the annual administrative dose limit will be exceeded.
- C. authorization from the Plant General Manager since the annual administrative dose limit will be exceeded.
- D. authorization from the Site Vice President since the annual administrative dose limit will be exceeded.

Answer: A

116. GEN 2.3.2 001

Which ONE (1) of the following is the Design Basis Accident (DBA) that results in the highest Exclusion Area Thyroid Dose?

- A. Refueling Accident.
- B. Control Rod Drop Accident.

- C. Main Steam Line Break Accident.
- D. Loss of Coolant Accident.

Answer: C

117. GEN 2.3.3 001

You are the shift supervisor there has been an inadvertent activation of the off-site Alert and Notification (Siren) System. The 30 sirens in Brunswick County are not in alarm, the five sirens within New Hanover County are alarming.

In accordant with 0-AI-113, which ONE (1) of the following describe the control rooms responsibilities?

- A. Coordinate response to inadvertent siren activation. Ensure all appropriate notifications to county, state, and federal agencies are made.
- B. Dispatch operations personnel to continuously sounding sirens and disable the sirens. Ensure all appropriate notifications to county, state, and federal agencies are made.
- C. Notify New Hanover County Emergency Operation Center. Instruct them to dispatch personnel to continuously sounding sirens and disable the sirens.
- D. Notify New Hanover County Emergency Operation Center. Instruct them to dispatch personnel to continuously sounding sirens and disable the sirens. Ensure all appropriate notifications to county, state, and federal agencies are made.

Answer: A

118. GEN 2.4.12 001

Following a Recirculation Pump trip, entry into AOP-04.0 is required. The Reactor Operator is directed to insert control rods per ENP24 to exit the Restricted Region of the power/flow map.

ENP24 directs inserting a group of rods from position 40 to 12.

Per the Reactivity Management Guidelines of OI-01.02, these rods should be inserted using continuous insert to which ONE (1) of the following positions?

- A. 12, monitoring of rod selection and movement by a second Licensed operator or qualified individual is required.
- B. 12, monitoring of rod selection and movement by a second Licensed operator or qualified individual may be waived.
- C. 14, then notched to 12, monitoring of rod selection and movement by a second Licensed Operator or qualified individual is required.
- D. 14, then notched to 12, monitoring of rod selection and movement by a second Licensed Operator or qualified individual may be waived.

Answer: C

119. GEN 2.4.15 001

The Shift Superintendent has announced an "In the Control Room Shift Brief." Following the announcement of a fire in RHR corner room. Which ONE (1) of the following should not be communicated during the brief?

- A. EAL classifications.
- B. status of evacuations.
- C. status of fire
- D. orders for the fire brigade

Answer: D

120. GEN 2.4.17 001

Which ONE (1) of the following is correct with regards EOP flow chart usage?

- A. If decision step status changes after being assessed, you are required to return to that step and perform new action.
- B. If critical step status changes after assessed, a return to that step is permitted, but not required until the flow path is complete.
- C. If any step cannot be executed, it should be circled and returned to later when it can be executed.
- D. If critical step status or decision step status changes after assessed, you are required to complete the flow path and then return to that step and perform new action.

Answer: C

121. GEN 2.4.18 001

EPG Contingency # 3 - Steam Cooling is employed to provide the time that adequate core cooling is assured when no RPV injection source is available and water level cannot be maintained above the top of the active fuel. In these conditions which ONE (1) of the following is the EOP basis for defining adequate core cooling?

- A. Peak clad temperature below 1800 °F
- B. Fuel center line temperature below 1800 °F
- C. Peak clad temperature below 2200 °F
- D. Fuel center line temperature below 2200 °F

Answer: A

122. GEN 2.4.21 001

On the SPDS, cyan (blue-green) pattern behind a given displayed value indicates which ONE (1) of the following?

- A. That the value is not validated.
- B. A limit that is near to an alarm condition.
- C. Data received from point(s) is being sampled or is invalid.
- D. Several points that monitor a single plant condition are not in agreement.

Answer: A

123. GEN 2.4.3 001

According to TS 3.3.3.1, which ONE (1) of the following is the primary purpose of the Post Accident Monitoring (PAM) Instrumentation

- A. provides the necessary support for operators to take the manual actions for which no automatic control is provided and that are required for safety systems to accomplish their safety functions for Design Basis Events.
- B. provides the necessary support for operators to take the manual actions for which no automatic control is provided and that are required for safety systems to accomplish their safety functions for Emergency Operating Procedure Events.
- C. provides the necessary support for operators to take all actions that are required for safety systems to accomplish their safety functions for Design Basis Events.
- D. provides the necessary support for operators to take all actions that are required for safety systems to accomplish their safety functions for Emergency Operating Procedure Events.

Answer: A

124. GEN 2.4.38 001

In accordance with OPEP-03.9.6, Search and Rescue Operations, prior to activation of the Emergency Response Facilities, which ONE (1) of the following is responsible for initiation of search and rescue operations.

- A. Shift Superintendent
- B. Fire Brigade leader.
- C. E&RC manager.
- D. Senior Security Officer on site.

Answer: A

125. GEN 2.4.48 001

In accordance with OAP-038, Reactivity Management Program Manual during manipulation of control rods when fuel is in the reactor core, which ONE (1) of the following describes who must be present to monitor control rod selection and movement and when this requirement is waived?

A. an SCO must be present, no other members of the technical staff may fill this position and the requirement is waived during emergency ATWS conditions.

B. an SCO must be present, no other members of the technical staff may fill this position and the requirement is waived with permission of the shift supervisor.

C. any other Licensed Operator or other qualified member of the technical staff and the requirement is waived with permission of the shift supervisor.

D. any other Licensed Operator or other qualified member of the technical staff and the requirement is waived during emergency ATWS conditions.

Answer: D