INITIAL SUBMITTAL

BROWNS FERRY EXAM
50-259, 260, 296/2001-301

SEPTEMBER 17-21, 2001

INITIAL SUBMITTAL
RO/SRO WRITTEN EXAMINATION

1. 201001A404 001
Which ONE (1) of the following is the purpose of the CRD Drive Water Pressure Control Bypass Valve?

A. It is used to boost drive water pressure during periods of low drive water flow.

B. It is used to boost drive water flow during periods of low drive water pressure.

C. It is used to provided a mini flow path when the CRD pump suction filter is being replaced.

D. It is used to control CRD drive water when the Drive Water Pressure Control Valve is removed from service for maintenance.

D
Drive Water Pressure Control Valve (2PCV8523) Bypass Operation

2OI85 , CONTROL ROD DRIVE SYSTEM

NOTE:

This section is to be used if Drive Water Pressure Control Valve (2PCV8523) fails or is to be removed from service for maintenance to control CRD drive water pressure.

8.24.1OPEN PCV8523 Bypass Valve, 2BYV0850567. (EL. 565 NE RX bldg.)
8.24.2 CLOSE PCV8523 Inlet SOV, 2SHV0850565. (EL. 565 NE RX bldg.)
8.24.3 CLOSE PCV8523 Outlet SOV, 2SHV0850566. (EL. 565 NE RX bldg.)

Answer: D

2. 201004K603 001
Which ONE (1) of the following occurs during normal rod movement?

A. The drift alarm is bypassed on the driven rod while the automatic sequence timer is cycling to permit the normal sequence without an alarm.

B. The drift alarm is bypassed on the driven rod when emergency in is used to ensure the emergency in selection will alarm.

C. The even-numbered reed switch position is bypassed on the driven rod while the automatic sequence timer is cycling to permit the normal sequence without an alarm.

D. The even-numbered reed switch position is bypassed on the driven rod when emergency in is used, to permit the normal sequence without an alarm.

A
OPL171.029
Revision 9 REACTOR MANUAL CONTROL SYSTEM (RMCS) AND ROD POSITION INFORMATION SYSTEM (RPIS)

During normal rod movement the drift alarm is bypassed on the selected rod while the automatic sequence timer is cycling or when emergency in is used, to permit the normal sequence without an alarm.

Answer: A

3. 202002 GEN 2.4.3 001

Which ONE (1) of the following describe the calibrated jet pumpÆs contribution to post accident flooding level indication?

A. The upper taps on the instrumented jet pumps provide the variable leg signal to the post accident flooding level indication.

B. The upper taps on the instrumented jet pumps provide the reference leg signal to the post accident flooding level indication.

C. The lower taps on the instrumented jet pumps provide the variable leg signal to the post accident flooding level indication.

D. The lower taps on the instrumented jet pumps provide the reference leg signal to the post accident flooding level indication.

C

Jet pumps 1, 6, 11 and 16 are referred to as ôfully instrumentedö or ôcalibratedö jet pumps.

(1) These four jet pumps were calibrated at a test facility and then installed, one per quadrant. The remaining 16 jet pump instruments were calibrated based on the data supplied for these pumps.

(2) These fully instrumented jet pumps have additional pressure taps located on the pump throat and on the pump diffuser. Separate flow indication is provided on Panel 94 for each of these pumps.

(3) The lower taps on the instrumented jet pumps also provide the variable leg signal to the post accident flooding level indication (LI 352 and 362).

Answer: C

4. 295003K101 001

Unit 2 has entered 0-AOI-57-1A, Loss of Offsite Power/ Station Blackout. Power has been lost to the Shutdown Board control power battery chargers (480 V RMOV Boards A and B).

Which ONE (1) of the following is the lenght of time this power can be lost before manual operation of the breakers is required?

A. 30 minutes.

B. 4 hours.

C. 8 hours.

D. 24 hours.

A
0-AOI-57-1A, Loss of Offsite Power/ Station Blackout section 4.2 Note prior to step 4.2.23
Answer: A

5. 203000K302 001
Gross fuel failure is suspected. The crew is in 3-EOI Appendix-18 - Suppression Pool Water Inventory Removal and Makeup and has just closed 3-FCV-74-63. Suppression Pool level is -3.5 inches and steady. Which ONE (1) of the following are the appropriate actions?

A. Open 3-FCV-74-62, RHR MAIN CNDR FLUSH VALVE and direct suppression pool water to the Main Condenser ONLY.

B. Open 3-FCV-74-63, RHR RADWASTE SYS FLUSH VALVE and direct suppression pool water to Radwaste ONLY.

C. Open 3-FCV-74-62, RHR MAIN CNDR FLUSH VALVE and direct suppression pool water to Main Condenser or open 3-FCV-74-63, RHR RADWASTE SYS FLUSH VALVE and direct suppression pool water to Radwaste.

D. Exit the procedure the Suppression Pool level is within acceptable limits.

D

3-EOI Appendix-18 - Suppression Pool Water Inventory Removal and Makeup

e. WHEN Suppression Pool level can be maintained between -1 in. and -5.5 in., THEN EXIT this procedure.

Answer: D

6. 206000A103 001
Following an accident on Unit 2, HPCI and RCIC are in operation. Suppression pool water level is + 5.2" and is slowly increasing at a rate of approximately .2 inches per hour. The CST level is 553'6" above sea level and is dropping at a rate consistent with the draw from both HPCI and RCIC. Which ONE (1) of the following will occur? (Assume no operator actions)

A. The HPCI pump suction valves from the suppression pool (73-26 and 73-27) will open due to high suppression pool level. This will then cause the CST suction valve to close once the suppression pool suction valves get full open.

B. The HPCI pump suction valves from the suppression pool (73-26 and 73-27) will open due low CST level. This will then cause the CST suction valve to close once the suppression pool suction valves get full open.

C. The HPCI pump suction valves from the suppression pool (73-26 and 73-27) will open due to high suppression pool level. This will then cause the CST suction valve to close once the suppression pool discharge valves begin open.

D. The HPCI pump suction valves from the suppression pool (73-26 and 73-27) will open due low CST level. This will then cause the CST suction valve to close once the suppression pool discharge valves begin open.

B
Automatic swapover to suppression pool on high suppression pool level +7" (U2); +5.2ö(U3) or low CST level Elev < 552'6"

If during HPCI operation, suppression pool water level increases to 7" (5.2ö on Unit 3) above zero or if CST level drops to 552'6" above sea level (7000 gallons), then HPCI pump suction valves from the suppression pool (73-26 and 73-27) open. (This will then cause the CST suction valve to close once the SP suction valves get full open).

Answer: B

7. 209001K203 001
An instrument Tech inadvertently causes an accident signal on Unit 1 which causes the shutdown boards to be powered by the diesel generators. If an accident signal was received on the other 2 units which ONE (1) of the following describes how would this effects the core spray system logic?

A. Unit 2 Non-preferred Core Spray pumps will not receive an auto start signal and if running will trip. The Preferred Core Spray pumps will receive an auto start signal or if running will continue to run provided power is available. All Unit 3 core spray pumps will start.

B. Unit 3 Non-preferred Core Spray pumps will not receive an auto start signal and if running will trip. The Preferred Core Spray pumps will receive an auto start signal or if running will continue to run provided power is available. All Unit 2 core spray pumps will start.

C. The Unit 2 and 3 Non-preferred Core Spray pumps will not receive an auto start signal and if running will trip. The Preferred Core Spray pumps will receive an auto start signal or if running will continue to run provided power is available.

D. All core spray pumps will start on both units.

D
No preferred, Non-preferred on Unit 3.
Note: Current plant configuration prevents Logic from processing a unit 1 accident signal. Unit 1 can be affected by a Unit 2 accident signal.

If the shutdown boards are powered by the diesel generators and an accident signal is present on units 1 and 2 the Non-preferred Core Spray pumps will not receive an auto start signal and if running will trip. The Preferred Core Spray pumps will receive an auto start signal or if running will continue to run provided power is available. This condition is indicated by a amber light on 9-3 located just above Core Spray Sys II on U-1 and Core Spray Sys I on U-2.

Answer: D

8. 211000K603 001

Which ONE (1) of the following describe the power supply and interlocks of the SLC pumps?

A. One pump is powered from 250V DC from 480V Shutdown Boards A and one from 480V Shutdown Board B. The pumps are electrically interlocked so that both pumps run, if available.

B. One pump is powered from 250V DC from 480V Shutdown Boards A and one from 480V Shutdown Board B. The pumps are electrically interlocked so that only one pump will run at a time.

C. One pump is powered from 480V Shutdown Board A and one from 480V Shutdown Board B. The pumps are electrically interlocked so that only one pump will run at a time.

D. One pump is powered from 480V Shutdown Board A and one from 480V Shutdown Board B. The pumps are electrically interlocked so that both pumps run, if available.

C

250 VDC is control power for the valves.

Two 100% capacity, triplex, positive displacement piston pumps powered from 480V Shutdown Bds A and B respectively are installed in parallel. The pumps are electrically interlocked so that only one pump can be run at a time to prevent overpressurization of the system.. This is accomplished by B-finger contacts in the start circuit of the running pump, opening contacts in the start circuit of the idle pump.

Answer: C

9. 263000K601 001

During normal operation, a system's battery charger, supplied by standby AC power, is carrying the load on the system bus. Which ONE (1) of the following describe the automatic actions if standby AC power is lost to this battery charger?

A. The battery charger is immediately supplied by alternate AC power and there is virtaully no change in bus load.

B. The battery immediately backfeeds the bus and picks up the load with virtually no service interruption.

C. The battery immediately backfeeds the inverter which the forward feeds the bus and picks up the load with a short duration interruption.

D. The battery charger immediately backfeeds the bus, however, bus loads must be manually energized.

B BFN reviewer please verify wording in the stem is not confusing

During normal operation, a system's battery charger, supplied by standby AC power, carries the load on the system bus. Upon loss of the charger, the fully-charged battery immediately backfeeds the bus and picks up the load with virtually no service interruption.

DC power is more desirable than AC for relays and solenoids because a DC powered coil exerts a more constant magnetic pull, and because the hysteresis and eddy current losses encountered with AC are eliminated.

Answer: B

10. 215004K602 001

Unit 2 is in RUN, IRMs are on range 6. The shorting links have been removed . Tthe SRM system experiences a loss of unregulated +24 VDC power from the neutron monitoring battery.

Which ONE (1) of the following will occur?

A. Rod block.

B. Does not generate Rod Block, Reactor Trip or Loss of power to inner electrode of the SRM ionization chamber.

C. Loss of power to the inner electrode of the SRM ionization chamber.

D. Reactor Trip.

B BFN reviewer please confirm stem is logical

The SRM power supplies receive unregulated +24 VDC power from the neutron monitoring battery and convert it to regulated voltages of proper magnitude for use by the SRM detectors and logic circuits.

The inner electrode of the ionization chamber is supplied with 350 VDC by a high voltage power supply

TRIP SIGNAL SET POINT ACTION

SRM High

> 6.8 x 104 5 counts per second

Rod block unless IRMs on range 8 (or higher) or if reactor mode switch in RUN

SRM Inop

Module unplugged

Mode switch not in operate

HV power supply low voltage

Loss of + 24VDC Rod block unless IRMs on range 8 (or higher) or if reactor mode switch in RUN

SRM Downscale

< 5 3 counts per second

Rod block unless IRMs on range 3 (or higher) or if reactor mode switch in RUN

SRM Detector

Wrong Position

< 145 102 count per second

Rod block detector full in, IRMs on range 3 (or higher), or if reactor mode switch in RUN

SRM High-High > 2 5 x 105 counts per second Scram if shorting links removed

Answer: B

11. 215005A203 001
Due to an Instrument Tech error the number of LPRMs assigned to an APRM is 13. Which ONE (1) of the following would occur?

A. Averaging Circuit would gerenate a rod block.

B. Count Circuit would generate a rod block.

C. Average circuit would generate a reactor trip.

D. Count Circuit would generate a reactor trip.

D BFN reviewer please add unit conditions to stem
OPL171.022

3. Count Circuit
a. Purpose - To generate a signal which is used to:
(1) Indicate the number of LPRMs assigned to an APRM Channel that are in operate.
(2) Generates an inop trip if the number of LPRMs in operate is too low.
(a) This trip is required to ensure that the APRM gets a representative sampling of flux across core.
(b) At least 14 of the LPRMs assigned to an APRM must be in operate.
Answer: D

12. 217000A304 001
Given the following plant conditions:

An ATWS has occurred
Level is being controlled by the Feedwater system at +20"
HPCI and RCIC have been manually started for pressure control per the EOIs

Which ONE (1) of the following describes the response of the RCIC system if suppression pool water level reaches +7"?

A. RCIC will trip on low suction pressure

B. RCIC will shift suction to the suppression pool

C. RCIC will run at minimum flow

D. RCIC will run at shutoff head

D
217000 BSEP BANK OPL171.040 001

U071NO04 Comment: System Knowledge HPCI auto swaps suction at +7 level in Torus RCIC does not.

Answer: D

13. 217000K502 001

The RCIC turbine speed and flow is being controlled by 2-FIC-71-36A. An operator inadvertently places the power transfer switch (XS-256-1) in the Alternate position. Which ONE (1) of the following describes the effect this will have?

A. This will transfer the flow controller power supplies from the Div I ECCS Inverter to the Unit Preferred 120VAC Power Supply.

B. This will transfer the flow controller power supplies from the Unit Preferred 120VAC Power Supply to the Div I ECCS Inverter.

C. The RCIC turbine will trip on mechanical overspeed and trip throttle valve will unlatch.

D. The RCIC turbine will trip on mechanical overspeed and trip throttle valve will not unlatch.

A
171040r17

AT Pnl 25-32, there is a power transfer switch (XS-256-1) which, if placed in the Alternate position, will transfer both (36A & B) Flow Controller power supplies from the Div I ECCS Inverter to the Unit Preferred 120VAC Power Supply.

Answer: A

14. 218000K501 001

Which ONE (1) of the following describes the effect the loss of 2B 250 Volt RMOV Board will have on the Unit 2 ADS valves and ADS logic?

A. Both Div I & II ADS logic inoperable, No ADS valves will operate automatically, 4 ADS valves can be operated manually.

B. Div I ADS logic inoperable, Div II ADS logic operable, ADS logic is capable of opening 6 ADS valves automatically. All ADS valves can be operated manually.

C. Div I ADS logic operable, Div II ADS logic inoperable, ADS logic is capable of opening 3 ADS valves automatically. 3 ADS valves can be operated manually.

D. Both Div I & II ADS logic is operable, all ADS valves will operate automatically and manually.

A
OBJ;V.B.5,V.C.5 - OPL171.043
Loss of 2B 250 volt RMOV Board will prevent automatic operation of the ADS system, 2 of the 6 ADS solenoid power supplies originate from this board and no backup power is provided. The

4 remaining SRVs can also be controlled from the backup control thus allowing a single failure and sufficient srvs to depressurize the reactor.

Answer: A

15. 223001K303 001

An event has occurred on Unit 2 resulting in raised containment temperatures and pressures.
Containment spray initiation is directed by the EOIs.
Valve failures have occurred, allowing spray of the drywell only.

Which ONE (1) of the following describe how the torus-to-drywell vacuum breakers will respond to this condition? The vacuum breakers will open when . . .

A. drywell pressure exceeds PSC pressure by > 0.5 psid to relieve pressure from the PSC to the drywell.

B. drywell pressure exceeds PSC pressure by > 0.5 psid to relieve pressure from the drywell to the PSC.

C. PSC pressure exceeds drywell pressure by > 0.5 psid to relieve pressure from the PSC to the drywell.

D. PSC pressure exceeds drywell pressure by > 0.5 psid to relieve pressure from the drywell to the PSC.

C

OPL171.016-26

Answer: C

16. 223002K107 001

Which ONE (1) of the following does not result in a Group 5 signal?

A. RCIC High Pressure Between Rupture Discs (10 psig)

B. RCIC Steam Line High Flow (150% after 3 sec)

C. RCIC Area High Temperature (160 Pump room/147 torus)

D. RCIC pump suction pressure low (10" Hg vacuum)

D
Group 5 isolation signals:
RCIC High Pressure Between Rupture Discs (10 psig)
RCIC Steam Line Low Pressure (60 psig)
RCIC Steam Line High Flow (150% after 3 sec)
RCIC Area High Temperature (160 Pump room/147 torus)

Turbine Trips
Mechanical overspeed (122%)

High turbine exhaust pressure (50 psig)
Vessel high level (+51 inches) (Closes FCV 71-8)
RCIC pump suction pressure low (10" Hg vacuum)
Answer: D

17. 239002A308 001
A small line break in the drywell concurrent with a MSIV closure has resulted in the following plant conditions:

RPV pressure	1000 psig
Drywell pressure	15 psig
Torus pressure	14 psig
Drywell temp (ave)	235 F

An SRV is opened to control RPV pressure. The SRV's tailpipe temperature should read approximately which ONE (1) of the following?

A. 235 F.

B. 250 F.

C. 300 F.

D. 545 F.

C
Constant enthalpy process, throttling saturated steam at 1000# to slightly above atmospheric pressure would result in 300 degrees.
A based on current drywell temp,
B based on saturation temp for torus pressure,
D based on saturation temp for RPV pressure.
Answer: C

18. 290001A301 001
The Main Steam Vault is provided with blowout panels that provide which ONE (1) of the following?

A. secondary containment overpressure protection by relieving to the turbine building.

B. secondary containment overpressure protection by relieving to the torus room.

C. tornado protection by relieving to the refuel floor.

D. tornado protection by relieving to the turbine building.

A
KA 290001A301 BANK OPL171.017 041
Answer: A

19. 256000K201 002

According to 2-OI-2, which ONE (1) one of the following conditions are the normal Condensate Pump Motors amps allowed to be above the steadystate operations based? This limit may be exceeded during certain known plant conditions such as operation.....

A. with one Condensate Pumps at high power. Pump motor current should not exceed 125 amps and winding temperature should not exceed ICS yellow setpoint.

B. with two Condensate Pumps at high power. Pump motor current should not exceed 225 amps and winding temperature should not exceed ICS yellow setpoint.

C. with one Condensate Pumps at high power. Pump motor current should not exceed 225 amps and winding temperature may exceed the ICS yellow set point but should not exceed ICS red setpoint.

D. with two Condensate Pumps at high power. Pump motor current should not exceed 125 amps and winding temperature may exceed the ICS yellow set point but should not exceed ICS red setpoint.

D.
A. two pump operation, should not exceed the red ICS setpoint.
B. 225 amps is the limit for the booster pump, should not exceed the red ICS setpoint.
C. 225 amps is the limit for the booster pump, two pump operation
D. Correct answer
2-OI-2 CONDENSATE SYSTEM UNIT 2

Recent change in operations - Normal maximum line current to Condensate Pump Motors is 118 amps steadystate operations based on a corresponding winding temperature of 248 F (ICS yellow setpoint). This limit may be exceeded during certain known plant conditions such as operation with two Condensate Pumps at high power or during periods of high river temperature. During this time operators should request assistance from Site Engineering and monitor pump motor parameters more frequently. Pump motor current should not exceed 125 amps and winding temperature should not exceed 293 F (ICS red setpoint).

Answer: D

20. 271000K506 001

Which ONE (1) of the following is the reason that Oxygen is added to the offgas system when Hydrogen water chemistry is in service?

A. To inhibit stress corrosion cracking.

B. To improve the recombiner performance.

C. To remove excess freons, oil, and halogens.

D. To enhance Iodine removal.

A
OLP171.030

Catalyst causes mixture to burn slowly rather than explode. Since H2 and O2 production is flux dependent, the amount of heat produced by the recombiner will change with power. The relationship of recombiner DT to power is used to monitor recombiner performance.

Freons, oil, halogens, and water act as poisons to the catalyst

Oxygen is added to the Off-Gas system prior to the recombiner when Hydrogen Water Chemistry (HWC) is in service. (HWC) lowers the rate of decomposition of water and results in higher ratio of H2 to O2.

Answer: A

21. 295008K202 001

Unit 2 is operating at 76 percent power when an MSIV partially closes.

The DRYWELL CONTROL AIR PRESS LOW (2XA553E, Window 35) annunciator is not in alarm.

The Drywell control air compressor suction valves, 2FCV3262A and 2FCV3263A indicate open on Panel 93.

RFW Control System is in THREE ELEMENT control

In response to this event the crew bypasses the steam flow signal for the partially closed MSIV. REDUCES reactor power to 70 percent AND then PLACES the associated MSIV control switch to CLOSE. Assume no additional operator actions. Which ONE (1) of the following will most likely occur.

A. The DRYWELL CONTROL AIR PRESS LOW annunciator will alarm, followed by a Group ____ isolation ONLY.

B. The DRYWELL CONTROL AIR PRESS LOW annunciator will not alarm; however, there will be a Group ___isolation ONLY.

C. The DRYWELL CONTROL AIR PRESS LOW annunciator will alarm, followed by BOTH a Group ____ and a Group ____Isolation.

D. The DRYWELL CONTROL AIR PRESS LOW annunciator will not alarm; however, the reactor will Scram.

D BFN REVIEWER - PLEASE VALIDATE THIS QUESTION ON SIMULATOR and add Group No.

If the Drywell control air low pressure annunciator is not in alarm and the Drywell control air compressor suction valves, 2FCV3262A and 2FCV3263A indicate open on Panel 93, control air pressure is normal.

1 Required action if an MSIV is partially closed, is to REDUCE reactor power to at least 70 percent AND then PLACE the associated MSIV control switch to CLOSE.

2 IF the DRYWELL CONTROL AIR PRESS LOW annunciator is in alarm, THEN REFER TO 2AOI32A1, Loss of Drywell Control Air.

3 EVALUATE Technical Specification 3.6.1.3, Primary Containment Isolation Valves

Bypassing the steam flow signal for a partially or completely isolated steam line could result in the RFW Control System raising Reactor Water Level to the Main Turbine/RFPT high water level trip setpoint when in THREE ELEMENT control. Even though the isolated steam line will produce a steam flow signal of low value, the signal is still valid and is used by the RFW Control System, when in THREE ELEMENT control, for calculating average steam line flow.

Answer: D

22. GEN 2.4.12 001

RC/Q directs the operator to inhibit the ADS auto blowdown function when Standby Liquid Control injection is begun.

The ADS is inhibited under these conditions because of which ONE (1) of the following?

A. ADS actuation would impose a severe pressure and temperature transient on the reactor vessel.

B. The operator can control pressure better than an automatic system like ADS.

C. Severe core damage from a large power excursion could result, if low pressure systems automatically injected on depressurization.

D. If only high pressure injection systems are available an ADS actuation could lead to a loss of adequate core cooling.

C
Old TEGRS Number (Deleted Bank) 10256 Taskno: S-000-EM-02 Skills 2.4.18 Knowledge RO2.7 SRO3.6 Comment: EOI Program manual section 0.V.C (Step RC/Q-15)

Answer: C

23. GEN 2.1.28 001

According to SPP-7.2, Outage Management, which ONE of the follow defines a FUNCTIONAL system?

A. A system, structure or component that is in service or can be placed in service in an OPERABLE state by immediate manual or automatic actuation.

B. A system that has the ability to perform its intended function with considerations that applicable technical specification or licensing/ design basis assumptions may not be maintained.

C. A System that is capable of performing its specified safety function(s). Implicit in this definition shall be the assumption that all necessary attendant instrumentation, controls, normal or emergency electrical power sources, cooling or seal water, lubrication or other auxiliary equipment that are required for the system, subsystem, train, component, or device to perform its specified safety function(s) are also capable of performing their related support function(s).

D. A system that had PERs generated during the previous operating cycle that have been evaluated as operable but degraded / non-conforming conditions, have not been

justified for resolution in the future and have a specified required completion date that is the current outage which has been agreed to by outage management.

B

A. AVAILABLE (Availability)- The status of a system, structure or component that is in service or can be placed in service in a FUNCTIONAL or OPERABLE state by immediate manual or automatic actuation

B. FUNCTIONAL - The ability of a system or component to perform its intended function with considerations that applicable technical specification or licensing/ design basis assumptions may not be maintained.

C. (SPP 3.1) Operable - Operability - A system, subsystem, train, component, or device shall be operable or have operability when it is capable of performing its specified safety function(s). Implicit in this definition shall be the assumption that all necessary attendant instrumentation, controls, normal or emergency electrical power sources, cooling or seal water, lubrication or other auxiliary equipment that are required for the system, subsystem, train, component, or device to perform its specified safety function(s) are also capable of performing their related support function(s).

D. OPERABLE BUT DEGRADED - PERs generated during the previous operating cycle that have been evaluated as operable but degraded / non-conforming conditions, have not been justified for resolution in the future, (i.e., more than one refueling cycle) in accordance with SPP-3.1, ôCorrective Action Programö, and have a specified required completion date that is the current outage which has been agreed to by outage management

Answer: B

24. GEN 2.3.1 001

You are called at home and directed to go to the Hatch Facility to assist in the recovery efforts following a refueling accident. You are informed that you will required a TLD during the assist visit. Which ONE (1) of the following describe the SPP-5.1 - RADIOLOGICAL CONTROLS, requirement for this emergency visit?

A. You must turn in your dosimetry and check out prior to leaving BFN, unless exempted by RADCON.

B. You must turn in your dosimetry and check out prior to leaving BFN, unless exempted by SS or Operations Manager.

C. You must obtain your BFN dosimetry and wear it along with the dosimetry provided by Hatch. Following your return you must report to RADCON to obtain any required bioassay and update their exposure records.

D. You must inform RADCON. You must obtain your BFN dosimetry and wear it along with the dosimetry provided by Hatch. Upon your return, you must present copies of your dose records from Hatch.

A

All individuals who are expected to work in a RCA shall process through RADCON (or RSO for non-nuclear facilities)when arriving, transferring, or terminating at TVAN. In addition, monitored and TVAN staff individuals who will visit another licensee or TVA plant, and require a TLD on that visit, must check out prior to leaving their respective sites unless exempted by RADCON (or RSO). If an employee is assigned to work at a non-TVA installation where an exposure to radiation is incurred, the employee shall inform RADCON (or RSO) of this assignment. The employee shall turn in their dosimetry, obtain any required bioassays, and complete any requested documentation. When the employee returns, they must report to RADCON (or RSO) to obtain any required bioassay and update their exposure records

Answer: A

25. 295025 GEN 2.1.28 001

A failure of the EHC pressure controller causes reactor pressure to reach 1080 psig. The reactor automatically scrams on high pressure.
Reactor water level to drops to -40 inches.
Several minutes after the scram, level is normal and reactor pressure is being maintained by the turbine bypass valves.
Two control rods are at position 04.

Which ONE (1) of the following should the crew be executing to stablize RPV water level, RPV pressure, and Reactor power?

A. C5, RC/P, RC/Q

B. C4, RC/P, PC/P

C. C5, C2, GOI-100-1

D. C5, RC/P, AOI-100-1

B BFN reviewer verify this is correct answer
OPL171.202 022
Old TEGRS Number (Deleted Bank) 12126

Answer: B

26. GEN 2.4.17 001

Maximum Safe Operating Radiation Level in Secondary Containment is defined as the radiation level above which ONE (1) of the following?

A. All EQ requirements of ECCS systems are exceeded.

B. Personnel access to equipment important to safety will be precluded.

C. Installed monitoring equipment pegs high and actual radiation levels are unknown.

D. Releases from the reactor building will be in excess of Alert Classification limits.

B

Answer: B

27. GEN 2.4.3 001

Per Regulatory Guide 1.97 post accident instrumentation must be appropriately identified in control rooms for ease of Operator Identification. This is accomplished for RPV level instruments by which ONE (1) of the following?

A. Placing black labels on the Emergency Systems Range instruments only.

B. Placing black labels on the Post accident Flood Range instruments only.

C. Placing black labels on both the Emergency Systems Range and Postaccident Flood range instruments.

D. Placing black labels on both the Postaccident Flood range instruments and Shutdown Vessel Flood Range.

C
GEN 2.4.3 Common BANK OPL171.003 055

Answer: C

28. 241000K127 001

Unit 2 is in startup.
Turbine turning gear and the Turbine Lube Oil system not in service.
The bearing metal temperatures have not exceeded 300 F
While attempting to establish steam seals, there is a malfunction in the mechanical vacuum pumps.

steam seal pressure rises above 10 psig.

Which ONE (1) of the following will occur?

A. The header relief valves will lift.

B. Low Condenser Vacuum trip

C. Cold air will be drawn across the steam seals.

D. Auxiliary steam will realign to supply the steam seals

A BFN reviewer verify relief valve setpoint is valid (range ?)
171015R5

Low Condenser Vacuum 21.8" Hg Indicates a loss of heat sink. 2/6 logic

2-OI-47c

3.5Operation with condenser vacuum and no steam seals will draw cold air across the seals.

3.6Condenser vacuum should be established as soon as possible after steam

seals are placed in service.

3.7Steam seal pressure below 1 psig may cause loss of vacuum or a rise in air leakage. Steam seal pressure above 8 psig may cause the header relief valves to lift.

Answer: A

29. 295010K201 001

Drywell Sprays are in service and Suppression Pool level has reached 18 feet. Which ONE (1) of the following actions should be taken?

A. Secure the drywell sprays, because the vacuum breakers from torus to drywell could be covered by water which would restrict or prevent flow from torus to drywell.

B. Secure the drywell sprays, because the weight of water in the suppression chamber will exceed the design weight load.

C. Continue drywell sprays, and lower the suppression pool level because the weight of water in the suppression chamber will exceed the design weight load.

D. Continue drywell sprays, and lower the suppression pool level because the vacuum breakers from torus to drywell could be covered by water which would restrict or prevent flow from torus to drywell.

A

Vacuum breakers from torus to drywell could be covered by water which would restrict or prevent flow from torus to drywell.

Answer: A

30. 259002K104 001

For a full turbine trip to occur, which ONE (1) of the following must occur?

A. both 2-LS-3-208A or 2-LS-3-208C and 2-LS-3-208B or 2-LS-3-208D must be picked up.

B. both 2-LS-3-208A or 2-LS-3-208B and 2-LS-3-208C or 2-LS-3-208D must be picked up.

C. either 2-LS-3-208A and 2-LS-3-208C or 2-LS-3-208B and 2-LS-3-208D must be picked up.

D. either 2-LS-3-208A and 2-LS-3-208B or 2-LS-3-208C and 2-LS-3-208D must be picked up.

C

A" and "C" OR "B" and "D" 208 level signals >+55" will cause a trip.

OPL171.026

Answer: C

31. 261000K609 001

The Unit 2 Reactor Zone and Refueling Zone ventilation have just isolated. The Standby Gas Treatment System has automatically initiated. Which ONE (1) of the following could have caused this condition?

A. High drywell pressure (+ 3. psi).

B. Refueling Zone Rad monitor (RE -140: both detectors) failed downscale.

C. High reactor water level (+60 inches).

D. Blower HS (18A, 40A, 69A) in PULL-TO-LOCK with no Group 6 isolation present.

A BFN reviewer please add noun names to Item D if needed
OPL171.018

HIGH DRYWELL PRESSURE (PIS-64-56 A-D) - 2.45 psi Isolates associated unit's Reactor Zone and Refueling Zone ventilation, automatically initiates the Standby Gas Treatment System.

Answer: A

32. 259002A101 001

The four narrow range level instruments read as follows

LT-3-53 + 70 inches.
LT-3-60 - 10 inches.
LT-3-206 + 34 inches.
LT-3-253 + 38 inches.

Based on the above information you have determined that only two LT have valid signals. Which ONE (1) of the following describes the response of the three element level control system?

A. Will control on the average of the remaining level signals. A process alarm will be generated.

B. Will control on the highest of the remaining level signals. A process alarm will be generated.

C. Will control on the average of the remaining level signals. A process alarm will not be generated.

D. Will control on the highest of the remaining level signals. A process alarm will not be generated.

A

If one level signal is BAD or invalid, the algorithm will calculate the average of the three remaining level signals and will control on that value.

If two level signals are BAD or invalid, the algorithm will average the remaining two levels and will control on that value. In this instance the two remaining signals are compared to each other. If they deviate by more than 8 inches, a process alarm will be generated, but neither will be declared invalid.

The algorithm validates each level signal by comparing them to the average. Level signals that deviate from the average by more than 8 inches are declared invalid, and are discarded from the average.

Answer: A

33. 272000 GEN 2.3.1 001

The Unit 2 reactor is operating at 90 % power, when the following annunciators alarm:

OG Post Trtmt Radiation High (94C; 33)
OG Post Trtmt Rad Monitor HiHiHi/INOP (94C; 35)
Stack Gas Radiation HighHigh (93A; 6)
OG Avg Annual Release Limit Exceeded (94C; 27)

All Alarms are valid. Which ONE (1) of the following actions should the operator take?

A. Immediately Scram the reactor.

B. Reduce core flow to between 50 - 60 %, then Scram the reactor.

C. Immediately Scram the reactor and immediately close the MSIV's.

D. Reduce reactor power to between 50 - 60 % with control rods, then Scram the reactor.

B
KA 272000 GEN 2.3.1

BANK - OPL171.033 012

2AOI662 page 2 IMMEDIATE ACTIONS

Answer: B

34. 201003K102 001

Following a reactor scram which ONE (1) of the following describes the condition of the Scram Discharge Volume?

A. Pressurize to reactor pressure via the scram valves.

B. Depressurized to approximately 65 psig due to leakage past the CRD seals and via the scram valves.

C. Pressurize to the drive water pressure of between 1475-1500 psig.

D. Depressurized to the exhaust water header and cooling water header pressure.

A
OPL171.005 .047
Answer: A

35. 295007A105 001
Unit 3 is operating at 100% with the "A" Reactor Pressure Control Unit in control. Which ONE (1) one of the following would be the result if the "A" Reactor Pressure Control Unit fails upscale?

A. The reactor Scrams on high power.

B. The reactor Scrams on high pressure.

C. The reactor Scrams on low steam line pressure.

D. The "B" Reactor Pressure Control Unit maintains reactor pressure.

C
Answer: C

36. 215001A103 001
While performing TIP Traces on Unit 3 a low water level Scram occurres.

Which ONE (1) of the following correctly completes the statement below concerning the response of the TIP system?

The blue lighted reset PB on PNL 9-13...

A. extinguishes, indicating Squib valve firing permissive received on the valve control unit.

B. extinguishes, the TIP halts travel; the ball valve goes closed after the automatic return of the TIP to the in shield position.

C. illuminates indicating that the ball valve has closed for that TIP channel.

D. illuminates, the TIP continues to traverse in auto mode to its in core limit, then halts travel. The ball valve closes after the automatic return of the TIP to the in shield position.

B BFNP REVIEWER _ PLEASE VERIFY THIS IS STILL CORRECT

OPL171.023 009
Answer: B

37. 233000K301 002
Unit 2 is in a January refueling outage, the RBCCW System has reached 60 degrees. The valves on the SFSP have slowly failed open allowing the spent fuel pool (SFP) temperature to drop to 68 F.

Which ONE (1) of the following actions should be taken?

A. Isolate the demineralizer to prevent the release of particulates trapped by the resin.

B. Isolate the demineralizer to prevent the intrusion of resin fines.

C. Ensure the SFP temperature does not drop below 68 F to minimizes the release of soluble activity.

D. Ensure the SFP temperature is greater than 68 F to remain within the criticality analysis.

D

Maximum normal heat load is the decay heat of the full core unload of fuel at the end of the fuel cycle plus the remaining decay heat of the spent fuel discharged at the previous refuelings.
Min. SFSP Temperature 68 F for criticality evaluations.
OPL171.052
Revision 6
The fuel pool cooling system is only required to be in service to maintain fuel pool water within specifications listed in SPP5.3 and water temperature less than 125 F but greater than 72 F.

3.1.1 [NER/C] Temperatures in the SFSP below 68 F exceed the temperature reactivity assumed in the criticality analysis. [INPO SER 90017]

3.1.2 [NER/C] Maintaining water temperature below 100 F minimizes the release of soluble activity. [GE SIL 541]

Answer: D

38. 245000K304 001
Unit 2 has experienced a loss of I&C BUS A. Which ONE (1) of the following describes the expected position of the Short Cycle valves? Assume no operator actions.

A. A. FCV-229A and FCV-229B fail AS IS.

B. B. FCV-229A and FCV-229B fail OPEN.

C. C. FCV-229A and FCV-229B fail CLOSED.

D. D. FCV-229A and FCV-229B are not affected by the failure of I&C BUS A.

C
ABNORMAL OPERATING INSTRUCTION, 2-AOI-57-5A, LOSS OF I&C BUS A, REVISION 35, Page 3, Changed note 1 to reflect 29A and 29B valves fail closed on loss of I&C BUS A. This is the result of design Change Notice - IC-37 DCN T41152A STAGES 1&2
Answer: C

39. 226001K302 001
The following Unit 2 conditions exist:

A LOCA occurred
Reactor water level is at TAF
Suppression pool cooling is in service
Suppression pool temperature is 89 F

LPCI initiation has just occurred

Which ONE (1) of the following describe the actions that must be taken to regain or maintain control of suppression pool cooling?

A. Nothing, Suppression pool cooling is not affected by LPCI initiation.

B. Place selector switch in SELECT ONLY.

C. Place keylock bypass switch in OVERRIDE position ONLY.

D. Place both the selector switch in SELECT and place keylock bypass switch in OVERRIDE position.

B BFN reviewer please add noun names to switches if needed
LIS-3-52 & 3-62A

E. Modes of Operation

3. Suppression Pool Cooling (continued)
g. Designed to maintain suppression pool temperature below 90íF. This ensures the suppression pool will be able to receive the energy of a LOCA.

h. Suppression pool cooling valves will isolate in the event of a LPCI initiation.

i. To regain control of suppression pool cooling valves after a LOCA, place selector switch in SELECT. Valves can then be opened if level in shroud is above 2/3 core height or if keylock bypass switch is placed in OVERRIDE position.

LIS used to provide a level permissive signal to Cntmt Cooling/spray valves based on level inside the shroud. Permits containment spray only if level is > 2/3 core height with LOCA signal present. A keylock bypass switch can bypass the 2/3 core height interlock.
Answer: B

40. 286000K402 001
The electrical driven fire pumps are running due to actuation of heat detectors in the turbine building. A subsequent loss of 161KV and 500KV offsite power occurrs.

Which ONE (1) of the following action(s) (if any) must be taken in order to reenergize the fire pumps following DG tie on to the shutdown boards?

A. No actions required; pumps will automatically start when a bus voltage between 4150 and 4170 is sensed.

B. Place the NORMAL/EMERGENCY switch for the associated fire pumps to EMERGENCY and back to NORMAL; pumps will automatically start.

C. Place the NORMAL/EMERGENCY switch for the associated fire pumps to EMERGENCY and back to NORMAL; pumps must then be restarted manually at the associated pump breaker.

D. No actions required; pumps will automatically start and sequence on after the load shed relay is eneergized.

B
BANK - KA 286000K402 OPL171.074 046 -
Old TEGRS Number (DeletedBank) 11026 Taskno: U57AAB01 Skills 295003AK4.02
Comment:Ref: 0AOI571A Rev. 0005; 0AOI571A page 8; step 4.2.17

Answer: B

41. 290003K401 001
The following conditions exist:

Refuel Zone Rad Monitor read 12 mr/hr
Reactor Zone Rad Monitor read 4 mr/hr
Control Bay Ventilation Rad Monitor reads 300 cpm above background

Which ONE (1) of the following responses is correct?

A. CREVS starts and normal control room ventilation isolates.

B. CREVS starts and a PCIS Group 6 isolation

C. CREVS starts and a Reactor zone isolation

D. No automatic actions occur

A
KA 290003K401 OPL171.067 014
Answer: A

42. 215003K301 001
A reactor shutdown is in progress.
Power has been lowered to an average level of "50" on range 4 of the IRMs.
An improper valve manipulation results in premature initiation of shutdown cooling (SDC), causing moderator temperature to lower.
Reactor power begins to rise.

Which ONE (1) of the following will prevent fuel thermal limits from being exceeded? (Assume no operator action)

A. Reactor Scram due to low RPV level

B. Reactor Scram due to high RPV pressure

C. Reactor Scram due to IRM high high

D. Reactor Scram due to APRM power-to-flow

C
KA 215003K301 EGT110.033 003
Old TEGRS Number (Deleted Bank)12165
Answer: C

43. 216000A401 001
Which ONE (1) of the following describes the effect of an increase of ambient temperature in the area of the reactor water level instrumentation reference leg run ?

A. Indicated level rises due to reference leg water density lowering.

B. Indicated level rises due to reference leg water density rising.

C. Indicated level lowers due to reference leg water density rising.

D. Indicated level lowers due to reference leg water density lowering.

A
Understanding of reference leg function
Answer: A

44. 264000K401 001
CASx will remove ALL EDG protective trips into the 86G lockout relay except which ONE (1) of the following?

A. Timed overcurrent.

B. Reverse power.

C. Loss of field.

D. Differential overcurrent.

D
CASx will remove ALL generator protective trips into the 86G lockout relay except differential overcurrent (87). (overspeed will also trip DG bkr with CASx present)

1. Diff. Overcurrent
2. Timed overcurrent
3. Reverse power.
4. Loss of field.
5. Overspeed
6. CASx

Answer: D

45. 23000A205 001
The 4kv shutdown boards are being supplied form their normal source.

Which ONE (1) of the following statements describes the loading sequence if an accident signal is received on Unit 2?

A. 2B RHR and 2B Core Spray pumps start 7 seconds after the accident signal is received.

B. RHRSW pumps lined up for EECW start 14 seconds after the accident signal is received.

C. Core Spray pumps (2A, 2B, 2C, 2D) start immediately when voltage is available on their respective shutdown board.

D. RHR pumps (2A, 2B, 2C, 2D) start 7 seconds after the accident signal is received.

A
KA 23000A205 971. OPL171.038 014
Old TEGRS Number (DeletedBank) 10775

Answer: A

46. 239003K603 001
Given the following conditions:

Reactor power 10%
MSIV LINE C INBOARD FCV-137 is stuck at 25% open.

Which ONE (1) of the following MSIVs, if closed, will cause a Half Scram signal?

A. FCV-138 MSIV LINE C OUTBOARD.

B. FCV-151 MSIV LINE D INBOARD.

C. FCV-126 MSIV LINE B INBOARD.

D. FCV-127 MSIV LINE B OUTBOARD.

B
KA 239003K603 OPL171.128 001

Answer: B

47. 295037A201 001
Unit 2 has experienced an ATWS and you have been directed to initiate SLC injection. The following conditions exist for SLC Pump A:

* Red Light On

* Squib Continuity Lights Off
* Flow Light On
* Alarm "SLC Injection Flow to Reactor"
* Alarm "SLC Squib Valve Continuity Lost"
* SLC Pressure 1200 psig
* Reactor Pressure 1000 psig
* Tank Level 50%, lowering

Which ONE (1) of the following is the appropriate action?

A. Initiate Alternate SLC Injection.

B. Continue running SLC Pump A.

C. Stop SLC Pump A and start SLC Pump B.

D. Start SLC Pump B and continue running SLC Pump A.

B

Old TEGRS Number (DeletedBank) 13614 - OPL171.201 002
Answer: B

48. 295005K101 001
RC/Q directs the operators to reduce Recirc. Pump speeds to minimum if the Main Turbo/Gen is synchronized prior to tripping.

Which ONE (1) of the following is the bases for this action?

A. To minimize power oscillations that may result from tripping Recirc Pumps at higher speeds.

B. To prevent RPV level from reaching + 54" as a result of tripping the Recirc pumps.

C. To ensure that Reactor Power is still above 5 % with the Recirc. Pumps at minimum speed, prior to tripping.

D. To prevent RPV level from reaching +11.2" as a result of tripping Recirc. Pumps at higher speeds and initiating PCIS.

B
OPL171.201Old TEGRS Number (Deleted Bank)14285
Answer: B

49. 295028K102 001
Tthe following conditions exist :

RPV Pressure 30 psig
DRYWELL temperature 279 F

Which ONE (1) of the following describes why LI-3-55 (Shutdown Floodup Range) may not be reliable for level indication?

A. The differential pressure transmitter is not environmentally qualified to operate at saturated temperature conditions.

B. Drywell pressure is the same as reactor pressure, providing a zero differential pressure (upscale level indication).

C. The reference leg may actually be boiling, causing indicated water level to be higher than actual level.

D. The density of the water in the variable leg is too low to provide a differential pressure after level lowers below seperator skirt.

C
Old TEGRS Number (DeletedBank) 11069
Answer: C

50. 295016A102 001
While operating in 2AOI1002, Control Room Abandonment, which ONE (1) of the following is the reason that Reactor Feedwater Pump outlet valves and the Startup Level Control Valve are closed prior to depressurizing below 500 psig?

A. Prevents reactor vessel flooding from the condensate system.

B. Prevents feedwater pump runout.

C. Prevents draining the condensate into the hotwell.

D. Prevents uncontrolled reactor depressurization due to cold water injection.

A
2AOI1002, Control Room Abandonment
Verifying Reactor Feedwater Pump outlet valves and Startup Level Control Valve closed prior to depressurizing below 500 psig prevents Reactor Vessel flooding from the Condensate System.

Answer: A

51. GEN 2.3.2 001
According to the Nuclear Power and Safety Health Manual, under which ONE (1) of the following conditions may an employee be exempted from the use of Personnel Protective Equipment (PPE) for a short duration.

A. If a Supervisor directs the Non-use of PPE.

B. If an Employee concurs with the non use of PPE.

C. To complete actions in EOPs.

D. To save an individual from immediate peril.

B
Nuclear Power and Safety Health Manual, Section VII, 5.7 item 3

This is required to be implemented by operations level managers in TVAN Safety and health manual, Section II, 3.0, Responsibilities, Operations Level Managers.

Answer: B

52. 295031K305 001

A change in which ONE (1) of the following parameters does not effect the Emergency Systems Range Level instruments providing the -122" ADS initiation setpoint?

A. Jet pump flow.

B. Reactor Building temperature.

C. Drywell temperature.

D. Reactor pressure.

A

OPL171.201 Revision 5 Appendix 2

2. EMERGENCY SYSTEMS RANGE LEVEL INSTRUMENTS (2-LI-3-58A and 2-LI-3-58B)

The Emergency Systems Range Level instruments, although not affected by changes in jet pump flow, are affected by changes in Rx. Bldg. temperature, Drywell temperature, and Rx. pressure. Worse case conditions for each of these parameters could cause the indicated RPV water level to be as much as 80 inches different from the actual RPV water level.

The range of RPV water level indication for 3-58A and B is -155 to +60 inches. Many important actions need to be performed, or verified using these instruments.

a. -45" (ARI, HPCI, RCIC)

b. -122" (ADS, CS, RHR, MSIVs)

Answer: A

53. 295006K101 001

Unit 2 was operating at 100 % power for 200 days, Following a reactor Scram, which ONE (1) of the following describes what will happen to the Xenon135 concentration in the reactor?

A. initially increase due to the decay of iodine already in the core and then decrease from burnout.

B. initially increase due to the decay of iodine already in the core and then decrease from decay.

C. remain the same because the decay of iodine and xenon balance each other.

D. decrease immediately, then slowly increase due to the differences in the half lives of iodine and xenon.

B

Answer: B

54. 295019A101 001

The Emergency Control Bay Air Compressor has just auto started. Which ONE (1) of the following is the pressure of the Control Air Pressure Header?

A. 53 psig.

B. 65 psig.

C. 73 psig.

D. 85 psig.

C BFN reviewer verify normal operating band does not invalidate this question
0-AOI-32
A. Reactor will scram at 53 psig
B. Control air cross tie closes at 65 psig
C. Correct
D. Servive Air cross tie closes at 85 psig

Answer: C

55. 295002K302 001

Unit 2 is operating at rated conditions.
A slow loss of condenser vacuum occurs.

Which ONE (1) of the following lists the correct order in which low vacuum trip signals are initiated as condenser vacuum lowers from 28" Hg to 0" Hg?

A. SJAE isolates; main turbine trips; RFPTs trip.

B. Main turbine trips; SJAE isolates; turbine bypass valves close.

C. Main turbine trips; turbine bypass valves close; SJAE isolates.

D. Turbine bypass valves close; main turbine trips; RFPTs trip.

C
OPL171.030 028

Answer: C

56. 295001A101 001
Unit 3 is operating at 50% power when the Recirculation flow unit B fails downscale.

Which ONE (1) of the following is the automatic response to this failure?

A. Turbine runback.

B. Rod block only.

C. Half scram and rod block.

D. Full scram and rod block.

B
295001A101 Modified 629. OPL171.022 001
Answer: B

57. 202001A107 001
Which ONE (1) of the following describes how the recirculation Motor Generator (MG) set would respond if the total feedwater flow lowered to less than 20% if the bailey drive lock has actuated?

A. Run back to 75% Speed

B. Remain locked

C. Run back to 20% Speed

D. Run back to 28% Speed

D
Answer: D

58. 295033A104 001
When venting the suppression chamber per appendix 12 of the EOIs, some of the interlocks which would prevent opening FCV 84-20 (Train A vent to SGT) are bypassed.

Which ONE (1) of the following conditions would still prevent the valve from opening when venting per appendix 12?

A. drywell pressure > 2.45 psig.

B. reactor water level < 11.2 inches.

C. reactor zone exhaust radiation > 72 mr/hr.

D. no SGT trains in operation.

D
OPL171.206 004
Answer: D

59. 295032K303 001
Which ONE (1) of the following is the basis for the Main Steam Line (MSL) Tunnel high temperature isolation?

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.

B
PCIS purpose

BSEP BANK LOI-CLS-LP-012A*017001

Answer: B

60. 295034K202 001
Refueling is in progress. Refuel Zone isolation due to high radioactivity has just occured as indicated on 2-RM-90-140 on panel 2-9-10 and on recorder 2-RM-90-140 on panel 2-9-2.

Which one of the following is the required action?

A. Stop any fuel movement and move personnel to a non-contaminated part of the refuel floor.

B. Stop any fuel movement and contact HP to investigate.

C. Stop any fuel movement and evacuate personnel from the refuel floor.

D. Ensure all fuel is moved to a safe location, move personnel to a non-contaminated part of the refuel floor, contact HP, then evacuate the refuel floor.

C
2-AOI-64-2d Step 4.2.3
Answer: C

61. 295020K203 001

Unit 2 is operating at 100 % power when an inadvertent reactor zone isolation occurs. Assume there are no operator actions to restore this isolation, which ONE (1) of the following will occur within approximately 5 minutes?

A. A unit scram due to high steam tunnel temperature.

B. An auto start of reactor building ventilation due to high temperature.

C. Both the RX & Refueling zone EXH channels will alarm due to high moisture content.

D. An isolation of PCIS groups 4 and 6.

A

2-AOI-64-2D
Answer: A

62. 295021A103 001
Unit 2 is in the Shutdown Cooling Mode
The following alarms actuate:

RHR SYS I PUMP A Tripped 2-XA-55-3D, Window 13
RHR SYS I PUMP B Tripped 2-XA-55-3D, Window 14
RHR SD CLG FLOW LOW 2-XA-55-3D, Window 11

Both RHR SYS II PUMPs are tagged out.

The first attempt to restart RHR SYS I PUMP A is successful and then the pump trips again. The attempt to restart RHR SYS I PUMP B is not successful. Both 2-FCV-74-47 and 2-FCV-74-48 are open.

Which ONE (1) of the following may occur?

A. Overfilling the reactor vessel.

B. Overfilling the suppression pool.

C. Draining the reactor vessel.

D. Draining the suppression pool.

C BFN reviewer is answer B a possible correct answer if so change
2-AOI-74-1
Answer: C

63. 295037K201 001
Following a scram a control rod failed to fully insert and reactor power cannot be determine.

Which ONE (1) of the following are the actions required by 2-AOI-100-1, Reactor Scram ?

A. RESET the scram then enter 2-EO-1 Flowchart

B. Do NOT reset the scram and enter 2-EO-1 Flowchart.

C. RESET the scram and then transfer to 2-OI-85

D. Do NOT reset the scram and transfer to 2-OI-85.

A BFN reviewer replace distractor C with ALternate rod insertion procedure
2-AO-100-1, Reactor Scram

[INPO/C] IF any control rod fails to fully insert, THEN

RESET the scram per Steps 4.2.23 thru 4.2.23.10 and PERFORM the following, as required.
IF reactor power is above 5% or CANNOT be determined, THEN

ENTER 2EOI1 Flowchart. [INPO SOER 80006]
4.2.10.1 WHEN WEST and EAST CRD DISCH VOL WTR LVL HIGH HALF SCRAM annunciators (2XA554A1 and 4A29) are reset, THEN

INITIATE a manual scram. REPEAT Step 4.2.10, as necessary, as long as rod motion is observed.
4.2.10.2 REFER TO 2OI85 for rods which fail to insert fully.

Answer: A

64. 295009A104 001
With unit 2 at 80% power, a turbine trip causes a reactor scram. A Group 3 isolation occurs on low reactor water level, and due to a relay failure, FCV691 and 692 cannot be reopened. All other group isolations (2, 6, and 8) occur normally, are reset, and systems restored. Which ONE (1) of the following is the correct response?

A. Begin a cooldown on the bypass valves ONLY

B. Restart the recirculation pumps immediately.

C. Begin a cooldown using both the bypass valves and the SRVs.

D. Begin a cooldown using SRVs ONLY.

A
OPL171.074 113
AOI-100-2, Step 4.2.7.2
Answer: A

65. 600000 GEN 2.1.27 001

There has been a loss of the regulating transformer for I&C "A" on Unit 3. Which ONE (1) of the following describe the effect this will have on the fire suppression system?

(Assume no operator actions)

A. The preaction sprinkler system(s) and the fire pumps will still operate automatically.

B. The preaction sprinkler system(s) will only function in manual, however the fire pumps will still operate automatically.

C. The preaction sprinkler system(s) will function automatically, however the fire pumps will only operate manually.

D. The preaction sprinkler system(s) and the fire pumps will only operate manually.

D
BFN REVIEWER - Please verify this is still correct
Answer: D

66. 295015A101 001
A scram condition has occurred on Unit 2 with the following conditions present:

Scram solenoid busses deenergized;
Backup scram valves energized;
ARI initiated (by operator);
Mode switch in SHUTDOWN;
30% of the control rods DID NOT insert.

Which ONE (1) of the following would cause the 30% failure to scram?

A. Failure of the scram air header to depressurize.

B. Failure of the RPS scram logic.

C. Scram Discharge Volume (SDV) vent and drain valves failure to close.

D. Scram Discharge volume full.

D
OPL171.005 026
Old TEGRS Number (DeletedBank) 12440
Answer: D

67. 295038A201 001
A LOCA and failure of the primary containment pressure suppression function has occurred.
The following plant conditions exist:

RPV water level 60 inches and rising

ECCS	Injecting
Drywell pressure	58 psig and rising
Drywell venting status	Venting via Appendix 13
Offsite release rate	1.7 x 10E+08 uci/sec (gaseous)

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

A. Reduce containment venting rate to remain below 1.4 x 10E+08 uci/sec.

B. Reduce containment vent immediately to bring release rate within I.T.S. limits.

C. Terminate venting.

D. Continue venting irrespective of offsite release rate.

D
OPL171.203 017
Old TEGRS Number (DeletedBank) 13656 : EOI Program manual, section OV_D, page 61
Answer: D

68. 259001A106 001
Unit 2 is at 100 % power. A heater tube leak activates the 2-LA-6-4B LEVEL HIGH alarm for the #2A feedwater heater. Which ONE (1) of the following describes the response of the feedwater system?

A. Drain inlet flow from the #2A heater to the #1A heater is isolates.

.

B. The extraction steam line Non Return Valves to the #2A heater closes.

C. The emergency drain valve from the #2A heater to the heater drain cooler opens.

D. The drain valve to condenser, 2-LCV-6-4B, opens.

D

2-ARP-925-562C

Probable cause -Tube Leak heater A2.

Or Malfunction of :

a. Drain valves 2-LCV-6-4A, 2-LCV-6-4B or 2-FCV-6-94
b. Alarm/bypass level control transmitter 2-LT-6-4A or 4B.

AUTOMATIC ACTION: Drain valve to condenser 2-LCV-6-4B opens.
Answer: D

69. 295013K301 001

A reactor scram has occurred and HPCI is needed to maintain reactor water level. Suppression pool temperature is 145 F.

Which ONE (1) of the following is the reason that the HPCI suppression pool water level suction transfer logic interlock is defeated and HPCI is operated with a suction from the CST?

A. The suppression pool provides insufficient NPSH to the HPCI pump and cavitation may occur at rated flow.

B. The HPCI pump shaft seals are not designed to operate at temperatures in excess of 140 F and may fail.

C. The HPCI lube oil will exceed allowable temperatures and the HPCI function could be lost due to damaged bearings.

D. The HPCI turbine exhaust pressure is likely to exceed the turbine trip setpoint.

C
Old TEGRS Number (DeletedBank)
REFERENCE: EOI Program Manualpage 15Section V-B Operator Caution Basis

OPL171.201 017
Answer: C

70. 500000A105 001
Due to an accident condition, the following plant parameters exist:

Drywell Hydrogen	5.4 %
Drywell Oxygen	6.0 %
Suppression Chamber Hydrogen	4.0 %
Suppression Chamber Oxygen	5.5 %
Suppression Pool Level	17.0 feet
Drywell temperature	250 F
Drywell Pressure	18 psig
RPV Level	+30 inches

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

A. Spray the Suppression Chamber, Vent the Suppression Chamber, Initiate CAD to the Suppression Chamber.

B. Spray the Suppression Chamber, Initiate CAD to the Suppression Chamber, Vent the Drywell.

C. Spray the Suppression Chamber, Spray the Drywell, Vent the Suppression Chamber irrespective of offsite release rates, and Initiate CAD to the Drywell.

D. Spray the Suppression Chamber, Spray the Drywell, Emergency Depressurize, Vent and Purge Irrespective of OffSite release rates.

C
Old TEGRS Number (DeletedBank) 13653 EOI Program Manual, section OVD,

Answer: C

71. 202002K402 001
With both recirculation MG A and B Panel Display Stations in Local the speed setpoint will indicate which ONE (1) of the following?

A. The lower of the two individual MG set speeds

B. The higher of the two individual MG set speeds.

C. The average of the two individual MG set speeds.

D. The weighted average of the two individual MG set speeds.

B
OPL171.007
Revision 18 RECIRCULATION SYSTEM LESSON PLAN NO. 007 Setpoint

Indicates the desired speed setpoint to be maintained by the recirc pumps when the MG A (B) PDSÆs are in REMOTE. This value is controlled by the operator when selected for setpoint.

The speed setpoint value will lower in response to an automatic or manual runback condition.

With both MG A (B) PDSÆs are in Local, the speed setpoint will indicate the higher of the two individual MG set speeds.

Answer: B

72. 212000K407 001
Which ONE (1) of the following occur when the Unit 2 Scram Response Logic initiates?

A. The red light at SCRAM RESPONSE INHIBIT switch, 2HS465 on Panel 295, illuminates.

B. The logic polls RFP controls for the availability of one RFP in AUTO. The polling sequence is RFP 2A, 2B, and 2C.

C. Once one RFP in AUTO is found, the polled RFPT will control Reactor water level between its lower speed limit of 600 rpm and an upper speed limit of 5600 rpm.

D. The non-polled RFP pumps are placed in STOP and the RFPT speeds are set at 600 rpm. These pumps are still available for manual or automatic control to the upper speed limit of 6500 rpm.

A
When Scram Response Logic initiates, the following actions occur:

The red light at SCRAM RESPONSE INHIBIT switch, 2HS465 on Panel 295, illuminates.

The logic polls RFP controls for the availability of one RFP in AUTO. The polling sequence is RFP 2C, 2B, and 2A.

Once one RFP in AUTO is found (normally RFP 2C), the polled RFPT will control Reactor water level between its lower speed limit of 600 rpm and an upper speed limit of 3900 rpm.

The remaining pumps (normally RFP 2A and 2B) are transferred to MANUAL and the RFPT speeds are set at 600 rpm. These pumps are still available for manual or automatic control to the upper speed limit of 5600 rpm.

Answer: A

73. 295004K203 001

Annunciator inverter A located in Communications room, Bay 78 failed. The 120 Volt AC POWER ON LIGHT is NOT illuminated. Which ONE (1) of the following is the consequence of this failure?

A. Loss of the A inverter will cause a trouble alarm to ring. Associated annunciators will function normally.

B. Loss of the A inverter will NOT cause a trouble alarm to ring. Associated Annunciators will function normally.

C. Loss of the A inverter will cause a trouble alarm to ring. Associated annunciators will not function.

D. Loss of the A inverter will NOT cause a trouble alarm to ring. Associated Annunciators not function normally.

B

Each annunciator bank is supplied power from two inverters connected in parallel. Loss of one inverter will cause a trouble alarm to ring if 120 volt AC POWER ON LIGHT is illuminated. Annunciators will function normally.

Answer: B

74. 295024A104 001

Unit 2 ECCS has initiated automatically on both high drywell pressure and low RPV pressure signals. The ECCS has just begun to inject. What is the reactor pressure and under what circumstances can the injection be secured?

A. RPV has just decreased below 340 psig. If injection from these pumps is not required to assure adequate core cooling, preventing them from injecting is appropriate since uncontrolled injection only complicates actions to maintain control of RPV water level.

B. RPV has just decreased below 340 psig. If injection from these pumps is not required to assure adequate core cooling, preventing them from injecting is not appropriate until the cause of the ECCS automatic initiation has been cleared.

C. RPV has just decreased below 430 psig. If injection from these pumps is not required to assure adequate core cooling, preventing them from injecting is appropriate since uncontrolled injection only complicates actions to maintain control of RPV water level.

D. RPV has just decreased below 430 psig. If injection from these pumps is not required to assure adequate core cooling, preventing them from injecting is not appropriate until the cause of the High Drywell pressure automatic initiation has been cleared.

A
171202R5

Entry conditions relate directly to the key parameters controlled by EOI-1. Low RPV water level and high RPV pressure entry conditions are directly related to the sections for controlling these same two parameters. The high drywell pressure entry condition is indicative of a line break occurring in the drywell and thus relates to RPV water level control. A condition that requires a reactor scram coincident with the reactor not subcritical is indicative of a failure-to-scram, and thus relates directly to reactor power control.

Low pressure ECCS initiates automatically on high drywell pressure and low RPV pressure signals and begin to inject when RPV pressure decreases below 340 psig, shutoff head of the pumps. If injection from these pumps is not required to assure adequate core cooling, preventing them from injecting is appropriate since uncontrolled injection only complicates actions to maintain control of RPV water level.

Answer: A

1. 215002K101 001
Unit 3 is operating at 65% power, Which ONE (1) of the following describes how the RBM system responds to APRM channel E failing downscale?

A. RBM Channel A auto transfers to its alternate reference APRM.

B. RBM Channel A will be automatically bypassed.

C. RBM Channel B will alarm with a downscale trip and associated rod block.

D. RBM Channel B will have an INOP trip due to failure to null.

B

OPL171.035 .001
Answer: B

2. 201002K105 001
The AUTO light on the RWM operator's panel just illuminated.

Which ONE (1) of the following describes the meaning of this indication?

RWM automatic functions are . . .

A. Bypassed, power is above the LPAP.

B. Active, power is below the LPSP.

C. Active, power is below the LPAP.

D. Bypassed, power is between the LPSP and LPAP.

A
201002K105 RO ONLY. BFN BANK OPL171.024 018
Answer: A

3. 218000 GEN 2.3.2 001
Which ONE (1) of the following describe how the ADS logic is designed to prevent inadvertent actuation?

A. Actuation of any two of four channels will cause auto blowdown.

B. Both channels in either of two trip systems (A and C or B and D) must actuate to cause auto blowdown.

C. One channel in each of two trip systems (A or C and B or D) must actuate to cause auto blowdown.

D. Both trip systems must actuate to cause auto blowdown.

B

Old TEGRS Number (DeletedBank) 11425 Taskno: U-001-AL-08 OPL171.043 - 019
Answer: B

4. 223001A304 001
The Containment Atmosphere Dilution System is used for the dilution of the primary containment atmosphere following a LOCA, to ensure which ONE (1) of the following?

A. oxygen concentrations remain less than 5% and hydrogen concentrations remain less than 4%.

B. oxygen concentrations remain less than 4% and hydrogen concentrations remain less than 5%.

C. oxygen concentrations remain less than 10% and hydrogen concentrations remain less than 6%.

D. oxygen concentrations remain less than 6% and hydrogen concentrations remain less than 10%.

A
171032R10
The Containment Atmosphere Dilution System is used for the dilution of the primary containment atmosphere following a LOCA, to ensure oxygen concentrations remain less than 5% and hydrogen concentrations remain less than 4%.
Answer: A

5. 295012 GEN 2.1.2 001
Which ONE (1) of the following describes the effect of high drywell temperatures on RPV water level indication AND the effect on sensed D/P by the instrument. (Assume actual RPV water level is constant.)

A. Reads HIGH due to HIGHER D/P

B. Reads HIGH due to LOWER D/P

C. Reads LOW due to HIGHER D/P

D. Reads LOW due to LOWER D/P

B
OPL171.003 043
Answer: B

6. GEN 2.1.29 001
You have been assigned to check the position of a rising stem valve documented in a System Alignment Checklist as being in the OPEN position. Which ONE (1) of the following describes your required action ?

A. Check the valve in the open direction.

B. Check the valve in the close direction.

C. Check the valve position by looking at the stem.

D. Check the valve is aligned with the open scribe marks.

B
GEN 2.1.29 Modified BFN BANK OPL171.071 034

Answer: B

7. GEN 2.1.7 001
You are performing Turbine Oil Conditioner (TOC) Startup in accordance with 2-OI-20, LUBRICATING OIL SYSTEM .

You have just performed step 5.2.6 - Verify Turbine Oil Conditioner Flow Select 50/100ágpm MAX, 2XS020Y030, in the 50ágpm MAX POSITION.

As the system fills with oil, you hear air escaping from the air release valves on all three filters. You also note that he system pressure indicators are rising slowly. Which ONE (1) of the following should you do?

A. Continue 2-OI-20, Lubricating Oil System by performing step 5.2.7 DEPRESS Turbine Oil Conditioner Restart Override Switch pushbutton, 2HS020Y034. Then continue in the procedure.

B. Continue 2-OI-20, Lubricating Oil System by closing the Turbine Oil Conditioner Outlet SOV, 2SHV020Y020 to isolate the air leakage. Then continue in the procedure.

C. Stop the performance of 2-OI-20, Lubricating Oil System. Do not close the Turbine Oil Conditioner Outlet SOV, 2SHV020Y020 and contact the SS.

D. Stop the performance of 2-OI-20, Lubricating Oil System. Close both Turbine Oil Conditioner Inlet SOV, 2SHV020Y001 AND Turbine Oil Conditioner Outlet SOV, 2SHV020Y020. Contact engineering for assistance.

A BFN reviewer please place dashes in switch numbers if needed
This is normal system operations.

NOTE

As the system fills with oil, air can be heard escaping from the air release valves on each filter and the system pressure indicators should indicate a rising pressure. Stepá5.2.8 must be performed within 30 seconds of performing Stepá5.2.7 or Stepá5.2.7 will have to be reperformed.
Turbine Oil Conditioner
Answer: A

8. GEN 2.2.13 001

Which ONE (1) of the following correctly states the conditions when an Equipment/System Alignment must be performed?

Prior to placing the equipment into operation for the first time following:

A. Major maintenance.

B. Removal of clearance tags on safety systems.

C. Post maintenance testing of the system.

D. Any shutdown.

A
375. OPL171.071 033
Answer: A

9. GEN 2.2.3 001

Assume that the 48V DC supplied, via Panel 9-9, has failed to one of the inverters. Which ONE (1) of the following describes the effects this will have?

A. If the failure is on unit 2 the power supply will auto swap to Battery Board 2.

B. If the failure is on Unit 3 the power supply will auto swap to Battery Board 3.

C. If the failure in on Unit 1 a buzzer will sound, and a white light will illuminate.

D. If the failure is on Unit 1, 2 or 3 a buzzer will sound, and a red light will illuminate.

C
48V DC is supplied, via Panel 9-9, to fourteen inverters. These inverters supply 120V AC to the Control room annunciators.

Unit 2 Panel 9-9 is normally supplied from Panel 11 Battery Board 3. The alternate supply is Panel 11 Battery Board 1.

If one of 14 inverter fails, a buzzer will sound, and a white light will illuminate on Unit 1 (Red light on Unit 2 & 3 per CRDR mods.)
Answer: C

10. GEN 2.4.27 001

During the testing of a fire pump, the strainer is disassembled, the discharge valve is closed and the breaker that provides power to the discharge valve is open. (Assume that appropriate manual actions will be taken by the test performer, who is stationed at the test location for system restoration and that these actions are addressed by written procedures).

Which ONE (1) of the following describe the status of the fire pump and associated fire equipment?

A. Operable; however, the equipment is not immediately restorable.

B. Operable because the equipment is immediately restorable.

C. Inoperable because the equipment is not immediately restorable.

D. Inoperable; however, the equipment is immediately restorable.

C
Equipment being tested need not be declared inoperable provided appropriate manual actions by the test performer, stationed at the test location for system restoration are addressed by written procedures. The written procedures must provide the ability to recognize input signals for action, readily recognize setpoints, and address design nuances that may complicate subsequent manual operation. The equipment should be immediately restorable (e.g., opening a valve and/or closing a breaker). If the equipment is not immediately restorable (e.g., a disassembled strainer) this exception does not apply. The FPS/designee has responsibility for determining whether this exception applies to a test. This determination shall be documented by providing at least a review of the procedure change taking advantage of this exception, a signoff on the work document, or issuance of an FPIP for documentation only.

Answer: C

11. 204000A405 001
Which ONE (1) of the following is the reason that RWCU Blowdown Isolation valve 69-16 and 69-17 are administratively not opened at the same time?

A. To prevent downstream piping damage from overpressure.

B. To avoid losing vacuum in the main condenser.

C. To prevent excessive blowdown in the event the FCV 69-14 fails open.

D. To avoid draining the entire RWCU System piping in a siphon action to the main condenser or Radwaste.

Downstream valves 69-16 and 69-17 are administratively not opened at the same time, to avoid losing vacuum in the main condenser.

A restricting orifice upstream prevents excessive blowdown in the event the FCV fails open. This may be bypassed for low pressure conditions using FCV 69-14. An upstream pressure switch closes the FCV on low pressure to prevent draining the entire RWCU System piping in a siphon action to the main condenser or Radwaste. A downstream pressure switch closes the FCV on high pressure to protect the downstream low pressure piping.

Loss of power to the controller will result in the output of the controller going to zero. To ensure that a momentary power disturbances are mitigated in the most desirable fashion, the controller is set up in the 'Hot Start' mode, which will cause the controller to restart after a power loss with the same parameters that were in memory prior to the power interruption. Power supply is 120V Plant Preferred.

The 'Automatic' push button will place the controller in automatic control mode. The PF key places the controller in the rapid valve manipulation mode in auto and the PF lamp lighted to indicate rapid manipulation is possible. The 'Manual' push button places the controller in manual mode, with output tracking by the internal PI computational module to ensure bumpless transfer. The 'Computer' push button is disabled.

Answer: B

12. 262002K401 002

Which ONE (1) of the following is the alternate power supply for 250V Battery Charger 5 ?

A. 480V Common Bd 1, Comp 3A.

B. 3EA 480V Diesel Auxiliary Board.

C. 480V SD Bd 3B, Comp 6D.

D. There is no alternate source of power.

D

250V Battery Charger (Charger Service bus)	Normal Source	Alternate Source
1	480V SD Bd 1A, Comp 6D	480V Common Bd 1, Comp 3A
2A	480V SD Bd 2A Comp 6D	480V Common Bd 1, Comp 3A
2B	480V SD Bd 2B, Comp 6D	480V Common Bd 1, Comp 3A
3	480V SD Bd 3A, Comp 6D	480V Common Bd 1, Comp 3A
4	480V SD Bd 3B, Comp 6D	480V Common Bd 1, Comp 3A
5	480V Com Bd 1 Comp 5C (no alternate)	
6	480V Com Bd 3 Comp 3D (no alternate)	

OPL171.037 Obj. V.C.1.c Obj. V.B.2

Answer: D

13. 216000K502 001

Which ONE (1) of the following instruments have functions that are directed through the Analog Trip System?

A. Vessel Narrow range.

B. Vessel wide range.

C. Shutdown vessel flood range.

D. Post-accident Flood Range.

B

Normal Control Range (Narrow Range) - Four of these instruments are used by Feedwater Level Control System (FWLCS). The level signal utilized by the FWLCS is not directed through the Analog Trip System.

The level signal utilized by the Wide Range instruments have safety related functions and are directed through the Analog Trip System.

Shutdown Vessel Flood Range (Flood-up Range) Since no trips or alarms are associated with this range, this level signal is not directed through the Analog Trip System.

Answer: B

14. 300000K501 001

The following conditions exist following a trip of the EECW C3 pump:

EECW A3 Tagged
EECW B3 Running
EECW D3 Running
EECW A1 Not Aligned for EECW.
EECW B1 Aligned for RHRSW
EECW C1 Aligned for RHRSW
EECW D1 Aligned for RHRSW

Based on the above conditions which ONE (1) of the following has lost ALL EECW cooling water?

A. Unit 3 Core spray room coolers.

B. B Control air compressor.

C. Spare RBCCW heat exchanger.

D. Both Unit 2 H2O2 analyzers.

B

118. OPL171.051 016

Old TEGRS Number (DeletedBank) 13416 Taskno: U067NO01 Skills 264000K6.08 KnowledgeRO3.8 SRO3.9 Comment:

Answer: B

15. 290002A201 001

Which ONE (1) of the following statements is correct concerning a design basis LOCA with only RHR/LPCI available for injection?

A. Water level rises to the top of the active fuel and adequate core cooling is assured via a combination of core coverage and steam cooling.

B. Water level rises to 2/3 core height and adequate core cooling is assured via a combination of core coverage and steam cooling.

C. Water level rises to the top of the active fuel and adequate core cooling is assured via core coverage.

D. Water level rises to 2/3 core height and adequate core cooling is assured via steam cooling ONLY.

OPL171.002 014

Modified
Answer: B

16. 295023 GEN 2.1.1 001
Unit 3 is in Refueling. Due to an instrument technician error power has been lost to the inservice FPC pump. The fuel pool demineralizer hold pump failed to start. The error is quickly recognized and the power is restored. Which ONE (1) of the following is the consequence of this power failure?

A. The demineralizer must NOT be backwashed and precoated prior to placing it in service to avoid personnel over exposure conditions.

B. The demineralizer must NOT be backwashed and precoated prior to placing it in service to avoid degraded chemistry conditions.

C. The demineralizer must be backwashed and precoated prior to placing it in service to avoid personnel over exposure conditions.

D. The demineralizer must be backwashed and precoated prior to placing it in service to avoid degraded chemistry conditions.

D
1-AOI-78-1 Section 4.2, subsequent actions.
Answer: D

17. GEN 2.1.27 001
Which ONE (1) of the following indicates a complete failure of the #1 seal in a recirculation pump?

A. No. 1 seal pressure is 980 psig, No. 2 seal pressure is 0 psig.

B. No. 1 seal pressure is 1000 psig, No. 2 seal pressure is 1000 psig.

C. No. 1 seal pressure 0 psig, No. 2 seal pressure 1000 psig.

D. No. 1 seal pressure is 0 psig, No. 2 seal pressure is 0 psig.

B
GEN 2.1.27 BANK RO ONLY OPL171.007 062
Answer: B

18. 295014K103 001
Upon an inadvertent reactivity addition due to a loss of feedwater heating, actions may be required to mitigate reactor power oscillations at high power/low flow conditions.
Which ONE (1) of the following is the thermal limit that is of concern during these conditions?

A. MCPR.

B. LHGR.

C. APLHGR.

D. MAPRAT.

A
EGT110.033 006
Minimum Critical Power Ratio (MCPR)
Linear Heat Generation Rate (LHGR)
Average Planar Linear Heat Generation Rate (APLHGR)
Maximum Average Planar Ratio (MAPRAT)
Answer: A

19. GEN 2.4.2 001
Which ONE (1) of the following is the basis for the value of drywell temperature that was chosen "maximum allowable drywell temperature while at power?"

A. Ensures that equipment damage to non-environmentally qualified equipment is minimized, and that actions are taken to minimize the drywell temperature increase prior to substantially exceeding the temperature limits of EQ equipment.

B. Ensures that equipment damage to environmentally qualified equipment is minimized, and that actions are taken to minimize the drywell temperature increase prior to substantially exceeding the temperature limits of non-EQ equipment.

C. Ensures that equipment damage to non-environmentally qualified equipment is minimized, and that actions are taken to minimize the drywell temperature increase prior to substantially exceeding the temperature limits of non-EQ equipment.

D. Ensures that equipment damage to environmentally qualified equipment is minimized, and that actions are taken to minimize the drywell temperature increase prior to substantially exceeding the temperature limits of EQ equipment.

CBFN reviewer please verify RO task
EOI PROGRAM MANUAL, EOIPM SECTION 0-X-B, SOURCE REFERENCES FOR THE EOI DOCUMENTS

This value of drywell temperature was chosen to ensure that the reactor is placed in a safe condition before major equipment failure occurs due to excessive drywell temperature. At BFN, requiring a manual scram before reaching 200 °F in the drywell ensures that equipment damage to non-environmentally qualified (EQ) equipment is minimized, and that actions are taken to minimize the drywell temperature increase prior to substantially exceeding the temperature limits of non-EQ equipment.
Answer: C

20. 295026K201 001

Following a LOCA, the reactor will not remain shutdown under all conditions without boron. The crew enters the Level/Power Control procedure. Suppression Pool temperature is 145 F and rising. 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.

C BFN reviewer please verify this is an RO task
1 .0 PURPOSE
This document provides a technical basis for each step of the Level/Power Control procedure. It is intended to be used for information only.
2 .0 OVERVIEW
The Level/Power Control procedure concurrently controls reactor water level, reactor pressure, and reactor power. Concurrent control of these reactor parameters is required when taking action to control and stabilize the other. The actions of the Level/Power Control procedure are appropriate if the reactor will not remain shutdown under all conditions without boron.

The reactor water level control section of the Level/Power Control procedure establishes and maintains adequate core cooling through core submergence and steam cooling. A list of preferred injection systems to be used is provided, with additional systems provided for augmenting reactor level control.
The actions to control reactor water level in the Level/Power Control procedure differ from those in the reactor water level control section of the Reactor Vessel Control Procedure to address four basic concerns:
a. When boron is injected into the reactor vessel, the systems used for control of reactor water level must be operated so as to minimize boron dilution and cold water injection and to promote boron mixing.
b. If the reactor is not shutdown, reactor water level must be controlled to minimize core inlet subcooling, thereby preventing or mitigating the consequences of any large irregular neutron flux oscillations induced by neutronic/thermal-hydraulic instabilities.
c. If the reactor cannot be shut down and Suppression Pool temperature continues to rise, reactor water level must be controlled, not only to adequately cool the core, but also to minimize Suppression Pool heatup.
d. Even if boron has not been injected into the reactor vessel and the reactor is shut down on control rods under hot conditions, injection of cold water could cause criticality, with no negative reactivity feedback occurring until reactor power increases to the heating range.

Answer: C

21. 295018K202 001
The Radwaste discharge valve to Unit 2 CCW discharge tunnel (2FCV7761) cannot be opened without specific interlocks satisfied.

Which ONE (1) of the following describes the interlocks?

A. 2A & 3A CCW pumps on; Unit 2 or 3 1A gate full open.

B. 2A & 2C CCW pumps on; Unit 2 1A gate throttled.

C. 2B & 2C CCW pumps on; Unit 2 1A gate full open.

D. Any (2) CCW pumps on; Unit 1,2, or 3 1B gate full open.

C
788. OPL171.084 008
Answer: C

22. 295022K102 001
The following conditions exist:

Reactor pressure is 800 psig
The in service CRD pump tripped
CRD charging water pressure drops to 850 psig

The alternate CRD pump is started and the CRD charging water pressure increased to 900 psig and is stable.

Which ONE (1) of the following is the required action(s)?

A. Immediately initiate a reactor scram.

B. Reduce reactor pressure to below 750 psig.

C. Reduce reactor power to less than the 80% rod line within two hours.

D. Be in Cold Shutdown Condition within 24 hours

A

4.1.3 IF Reactor Pressure is LESS THAN 900 PSIG

and

The following conditions exist:

1. abIn service CRD Pump tripped and NEITHER CRD Pump can be started,
or
2. abCharging Water Pressure can NOT be restored and maintained above 940 PSIG,

THEN

PERFORM the following:

4.1.3.1 Manually SCRAM Reactor, and PLACE the reactor mode switch in the shutdown position immediately.

4.1.3.2 REFER TO 2AOI1001. [Item D20]

Answer: A

23. 295036K2.01 001
The drywell equipment drain sump recirculation valve has just opened and the discharge valve has shut. Which ONE (1) of the following has occurred?

A. A high sump temperature was sensed.

B. A high sump flow condition was sensed.

C. A sump pump started.

D. A group 1 isolation occurred.

A
679. OPL171.016 025
Old TEGRS Number (Deleted Bank) 11457
Answer: A

24. 295029A201 001
A loss of coolant accident occurs from normal operating conditions.
All emergency systems (RPS, PCIS, ECCS) respond normally.
The following conditions exist:

Reactor level:	20"
Reactor pressure:	100 psig
Drywell Temperature:	180 F
Drywell pressure:	26 psig
Suppression Pool Level:	18.5 ft.
Suppression Pool Temperature:	165 F
Suppression Chamber Temperature:	160 F
Suppression Chamber Pressure:	26 psig

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

A. Initiate Drywell and Suppression Chamber sprays.

B. Initiate Drywell sprays, but NOT Suppression Chamber sprays.

C. Initiate Suppression Chamber sprays, but NOT Drywell sprays.

D. Do NOT initiate Drywell or Suppression Chamber sprays.

C
OPL171.203 001
Old TEGRS Number (Deleted Bank) 10365 EOI program manual, section OVD page 113
Answer: C

25. 205000 K608 001
While using OI-74, RHR System, for Shutdown Cooling, the reactor temperature should be maintained greater than 72 F and only be controlled by throttling RHRSW flow.

Which ONE (1) of the following is the reason for this?

A. Ensures reactor water is adequately mixed.

B. Ensures reactor water exceeds the temperature reactivity assumed in the criticality analysis

C. Minimizes the release of soluble activity. .

D. Minimizes the possibility of RHR pump cavitation.

A
2-OI-74, Residual Heat Removal System

When in Shutdown Cooling, reactor temperature should be maintained greater than 72 F and only be controlled by throttling RHRSW flow. This is to assure adequate mixing of reactor water.

Reactor vessel water temperatures below 68 F exceed the temperature reactivity assumed in the criticality analysis. [INPOáSER 90017]

Maintaining water temperature below 100 F minimizes the release of soluble activity.
Answer: A

26. 40000K101 001
Unit 1 is defueled, Unit 2 and Unit 3 are at 100% power.

The A3 RHRSW pump has been tagged for maintenance and the applicable replacement RHRSW pump has been aligned by procedure.

While placing Unit 2 RHR loop "C" in service for Torus Cooling, the Unit Operator mistakenly attempts to open the "A" RHR HX. RHRSW Outlet valve.

Which ONE (1) of the following statements describes the consequences of this action?

A. The "A" RHR HX. RHRSW valve does NOT OPEN.

B. The "A" RHR HX. RHRSW valve OPENS, "A" RHRSW HX. flow remains 0.

C. The "A" RHR HX. RHRSW valve OPENS, then CLOSES when the HS is released.

D. The "A" RHR HX. RHRSW valve OPENS, "A" RHRSW HX. flow rises.

B
117. OPL171.051 015

Taskno: U023NO01 Skills: 400000K3.01 Knowledge: RO2.9/SRO3.3

Answer: B

INITIAL SUBMITTAL

BROWNS FERRY EXAM
50-259, 260, 296/2001-301

SEPTEMBER 17-21, 2001

INITIAL SUBMITTAL
SRO WRITTEN EXAMINATION

1. 201001A404 001
Which ONE (1) of the following is the purpose of the CRD Drive Water Pressure Control Bypass Valve?

A. It is used to boost drive water pressure during periods of low drive water flow.

B. It is used to boost drive water flow during periods of low drive water pressure.

C. It is used to provided a mini flow path when the CRD pump suction filter is being replaced.

D. It is used to control CRD drive water when the Drive Water Pressure Control Valve is removed from service for maintenance.

D
Drive Water Pressure Control Valve (2PCV8523) Bypass Operation

2OI85 , CONTROL ROD DRIVE SYSTEM

NOTE:

This section is to be used if Drive Water Pressure Control Valve (2PCV8523) fails or is to be removed from service for maintenance to control CRD drive water pressure.

8.24.1OPEN PCV8523 Bypass Valve, 2BYV0850567. (EL. 565 NE RX bldg.)
8.24.2 CLOSE PCV8523 Inlet SOV, 2SHV0850565. (EL. 565 NE RX bldg.)
8.24.3 CLOSE PCV8523 Outlet SOV, 2SHV0850566. (EL. 565 NE RX bldg.)

Answer: D

2. 201004K603 001
Which ONE (1) of the following occurs during normal rod movement?

A. The drift alarm is bypassed on the driven rod while the automatic sequence timer is cycling to permit the normal sequence without an alarm.

B. The drift alarm is bypassed on the driven rod when emergency in is used to ensure the emergency in selection will alarm.

C. The even-numbered reed switch position is bypassed on the driven rod while the automatic sequence timer is cycling to permit the normal sequence without an alarm.

D. The even-numbered reed switch position is bypassed on the driven rod when emergency in is used, to permit the normal sequence without an alarm.

A
OPL171.029
Revision 9 REACTOR MANUAL CONTROL SYSTEM (RMCS) AND ROD POSITION INFORMATION SYSTEM (RPIS)

During normal rod movement the drift alarm is bypassed on the selected rod while the automatic sequence timer is cycling or when emergency in is used, to permit the normal sequence without an alarm.

Answer: A

3. 202002 GEN 2.4.3 001

Which ONE (1) of the following describe the calibrated jet pumpÆs contribution to post accident flooding level indication?

A. The upper taps on the instrumented jet pumps provide the variable leg signal to the post accident flooding level indication.

B. The upper taps on the instrumented jet pumps provide the reference leg signal to the post accident flooding level indication.

C. The lower taps on the instrumented jet pumps provide the variable leg signal to the post accident flooding level indication.

D. The lower taps on the instrumented jet pumps provide the reference leg signal to the post accident flooding level indication.

C

Jet pumps 1, 6, 11 and 16 are referred to as ôfully instrumentedö or ôcalibratedö jet pumps.

(1) These four jet pumps were calibrated at a test facility and then installed, one per quadrant. The remaining 16 jet pump instruments were calibrated based on the data supplied for these pumps.

(2) These fully instrumented jet pumps have additional pressure taps located on the pump throat and on the pump diffuser. Separate flow indication is provided on Panel 94 for each of these pumps.

(3) The lower taps on the instrumented jet pumps also provide the variable leg signal to the post accident flooding level indication (LI 352 and 362).

Answer: C

4. 295003K101 001

Unit 2 has entered 0-AOI-57-1A, Loss of Offsite Power/ Station Blackout. Power has been lost to the Shutdown Board control power battery chargers (480 V RMOV Boards A and B).

Which ONE (1) of the following is the lenght of time this power can be lost before manual operation of the breakers is required?

A. 30 minutes.

B. 4 hours.

C. 8 hours.

D. 24 hours.

A
0-AOI-57-1A, Loss of Offsite Power/ Station Blackout section 4.2 Note prior to step 4.2.23
Answer: A

5. 203000K302 001
Gross fuel failure is suspected. The crew is in 3-EOI Appendix-18 - Suppression Pool Water Inventory Removal and Makeup and has just closed 3-FCV-74-63. Suppression Pool level is -3.5 inches and steady. Which ONE (1) of the following are the appropriate actions?

A. Open 3-FCV-74-62, RHR MAIN CNDR FLUSH VALVE and direct suppression pool water to the Main Condenser ONLY.

B. Open 3-FCV-74-63, RHR RADWASTE SYS FLUSH VALVE and direct suppression pool water to Radwaste ONLY.

C. Open 3-FCV-74-62, RHR MAIN CNDR FLUSH VALVE and direct suppression pool water to Main Condenser or open 3-FCV-74-63, RHR RADWASTE SYS FLUSH VALVE and direct suppression pool water to Radwaste.

D. Exit the procedure the Suppression Pool level is within acceptable limits.

D

3-EOI Appendix-18 - Suppression Pool Water Inventory Removal and Makeup

e. WHEN Suppression Pool level can be maintained between -1 in. and -5.5 in., THEN EXIT this procedure.

Answer: D

6. 206000A103 001
Following an accident on Unit 2, HPCI and RCIC are in operation. Suppression pool water level is + 5.2" and is slowly increasing at a rate of approximately .2 inches per hour. The CST level is 553'6" above sea level and is dropping at a rate consistent with the draw from both HPCI and RCIC. Which ONE (1) of the following will occur? (Assume no operator actions)

A. The HPCI pump suction valves from the suppression pool (73-26 and 73-27) will open due to high suppression pool level. This will then cause the CST suction valve to close once the suppression pool suction valves get full open.

B. The HPCI pump suction valves from the suppression pool (73-26 and 73-27) will open due low CST level. This will then cause the CST suction valve to close once the suppression pool suction valves get full open.

C. The HPCI pump suction valves from the suppression pool (73-26 and 73-27) will open due to high suppression pool level. This will then cause the CST suction valve to close once the suppression pool discharge valves begin open.

D. The HPCI pump suction valves from the suppression pool (73-26 and 73-27) will open due low CST level. This will then cause the CST suction valve to close once the suppression pool discharge valves begin open.

B
Automatic swapover to suppression pool on high suppression pool level +7" (U2); +5.2ö(U3) or low CST level Elev < 552'6"

If during HPCI operation, suppression pool water level increases to 7" (5.2ö on Unit 3) above zero or if CST level drops to 552'6" above sea level (7000 gallons), then HPCI pump suction valves from the suppression pool (73-26 and 73-27) open. (This will then cause the CST suction valve to close once the SP suction valves get full open).

Answer: B

7. 209001K203 001
An instrument Tech inadvertently causes an accident signal on Unit 1 which causes the shutdown boards to be powered by the diesel generators. If an accident signal was received on the other 2 units which ONE (1) of the following describes how would this effects the core spray system logic?

A. Unit 2 Non-preferred Core Spray pumps will not receive an auto start signal and if running will trip. The Preferred Core Spray pumps will receive an auto start signal or if running will continue to run provided power is available. All Unit 3 core spray pumps will start.

B. Unit 3 Non-preferred Core Spray pumps will not receive an auto start signal and if running will trip. The Preferred Core Spray pumps will receive an auto start signal or if running will continue to run provided power is available. All Unit 2 core spray pumps will start.

C. The Unit 2 and 3 Non-preferred Core Spray pumps will not receive an auto start signal and if running will trip. The Preferred Core Spray pumps will receive an auto start signal or if running will continue to run provided power is available.

D. All core spray pumps will start on both units.

D
No preferred, Non-preferred on Unit 3.
Note: Current plant configuration prevents Logic from processing a unit 1 accident signal. Unit 1 can be affected by a Unit 2 accident signal.

If the shutdown boards are powered by the diesel generators and an accident signal is present on units 1 and 2 the Non-preferred Core Spray pumps will not receive an auto start signal and if running will trip. The Preferred Core Spray pumps will receive an auto start signal or if running will continue to run provided power is available. This condition is indicated by a amber light on 9-3 located just above Core Spray Sys II on U-1 and Core Spray Sys I on U-2.

Answer: D

8. 211000K603 001

Which ONE (1) of the following describe the power supply and interlocks of the SLC pumps?

A. One pump is powered from 250V DC from 480V Shutdown Boards A and one from 480V Shutdown Board B. The pumps are electrically interlocked so that both pumps run, if available.

B. One pump is powered from 250V DC from 480V Shutdown Boards A and one from 480V Shutdown Board B. The pumps are electrically interlocked so that only one pump will run at a time.

C. One pump is powered from 480V Shutdown Board A and one from 480V Shutdown Board B. The pumps are electrically interlocked so that only one pump will run at a time.

D. One pump is powered from 480V Shutdown Board A and one from 480V Shutdown Board B. The pumps are electrically interlocked so that both pumps run, if available.

C

250 VDC is control power for the valves.

Two 100% capacity, triplex, positive displacement piston pumps powered from 480V Shutdown Bds A and B respectively are installed in parallel. The pumps are electrically interlocked so that only one pump can be run at a time to prevent overpressurization of the system.. This is accomplished by B-finger contacts in the start circuit of the running pump, opening contacts in the start circuit of the idle pump.

Answer: C

9. 263000K601 001

During normal operation, a system's battery charger, supplied by standby AC power, is carrying the load on the system bus. Which ONE (1) of the following describe the automatic actions if standby AC power is lost to this battery charger?

A. The battery charger is immediately supplied by alternate AC power and there is virtaully no change in bus load.

B. The battery immediately backfeeds the bus and picks up the load with virtually no service interruption.

C. The battery immediately backfeeds the inverter which the forward feeds the bus and picks up the load with a short duration interruption.

D. The battery charger immediately backfeeds the bus, however, bus loads must be manually energized.

B BFN reviewer please verify wording in the stem is not confusing

During normal operation, a system's battery charger, supplied by standby AC power, carries the load on the system bus. Upon loss of the charger, the fully-charged battery immediately backfeeds the bus and picks up the load with virtually no service interruption.

DC power is more desirable than AC for relays and solenoids because a DC powered coil exerts a more constant magnetic pull, and because the hysteresis and eddy current losses encountered with AC are eliminated.

Answer: B

10. 215004K602 001

Unit 2 is in RUN, IRMs are on range 6. The shorting links have been removed . Tthe SRM system experiences a loss of unregulated +24 VDC power from the neutron monitoring battery.

Which ONE (1) of the following will occur?

A. Rod block.

B. Does not generate Rod Block, Reactor Trip or Loss of power to inner electrode of the SRM ionization chamber.

C. Loss of power to the inner electrode of the SRM ionization chamber.

D. Reactor Trip.

B BFN reviewer please confirm stem is logical

The SRM power supplies receive unregulated +24 VDC power from the neutron monitoring battery and convert it to regulated voltages of proper magnitude for use by the SRM detectors and logic circuits.

The inner electrode of the ionization chamber is supplied with 350 VDC by a high voltage power supply

TRIP SIGNAL SET POINT ACTION

SRM High

> 6.8 x 104 5 counts per second

Rod block unless IRMs on range 8 (or higher) or if reactor mode switch in RUN

SRM Inop

Module unplugged

Mode switch not in operate

HV power supply low voltage

Loss of + 24VDC Rod block unless IRMs on range 8 (or higher) or if reactor mode switch in RUN

SRM Downscale

< 5 3 counts per second

Rod block unless IRMs on range 3 (or higher) or if reactor mode switch in RUN

SRM Detector

Wrong Position

< 145 102 count per second

Rod block detector full in, IRMs on range 3 (or higher), or if reactor mode switch in RUN

SRM High-High > 2 5 x 105 counts per second Scram if shorting links removed

Answer: B

11. 215005A203 001
Due to an Instrument Tech error the number of LPRMs assigned to an APRM is 13. Which ONE (1) of the following would occur?

A. Averaging Circuit would gerenate a rod block.

B. Count Circuit would generate a rod block.

C. Average circuit would generate a reactor trip.

D. Count Circuit would generate a reactor trip.

D BFN reviewer please add unit conditions to stem
OPL171.022

3. Count Circuit
a. Purpose - To generate a signal which is used to:
(1) Indicate the number of LPRMs assigned to an APRM Channel that are in operate.
(2) Generates an inop trip if the number of LPRMs in operate is too low.
(a) This trip is required to ensure that the APRM gets a representative sampling of flux across core.
(b) At least 14 of the LPRMs assigned to an APRM must be in operate.
Answer: D

12. 217000A304 001
Given the following plant conditions:

An ATWS has occurred
Level is being controlled by the Feedwater system at +20"
HPCI and RCIC have been manually started for pressure control per the EOIs

Which ONE (1) of the following describes the response of the RCIC system if suppression pool water level reaches +7"?

A. RCIC will trip on low suction pressure

B. RCIC will shift suction to the suppression pool

C. RCIC will run at minimum flow

D. RCIC will run at shutoff head

D
217000 BSEP BANK OPL171.040 001

U071NO04 Comment: System Knowledge HPCI auto swaps suction at +7 level in Torus RCIC does not.

Answer: D

13. 217000K502 001

The RCIC turbine speed and flow is being controlled by 2-FIC-71-36A. An operator inadvertently places the power transfer switch (XS-256-1) in the Alternate position. Which ONE (1) of the following describes the effect this will have?

A. This will transfer the flow controller power supplies from the Div I ECCS Inverter to the Unit Preferred 120VAC Power Supply.

B. This will transfer the flow controller power supplies from the Unit Preferred 120VAC Power Supply to the Div I ECCS Inverter.

C. The RCIC turbine will trip on mechanical overspeed and trip throttle valve will unlatch.

D. The RCIC turbine will trip on mechanical overspeed and trip throttle valve will not unlatch.

A
171040r17

AT Pnl 25-32, there is a power transfer switch (XS-256-1) which, if placed in the Alternate position, will transfer both (36A & B) Flow Controller power supplies from the Div I ECCS Inverter to the Unit Preferred 120VAC Power Supply.

Answer: A

14. 218000K501 001

Which ONE (1) of the following describes the effect the loss of 2B 250 Volt RMOV Board will have on the Unit 2 ADS valves and ADS logic?

A. Both Div I & II ADS logic inoperable, No ADS valves will operate automatically, 4 ADS valves can be operated manually.

B. Div I ADS logic inoperable, Div II ADS logic operable, ADS logic is capable of opening 6 ADS valves automatically. All ADS valves can be operated manually.

C. Div I ADS logic operable, Div II ADS logic inoperable, ADS logic is capable of opening 3 ADS valves automatically. 3 ADS valves can be operated manually.

D. Both Div I & II ADS logic is operable, all ADS valves will operate automatically and manually.

A
OBJ;V.B.5,V.C.5 - OPL171.043
Loss of 2B 250 volt RMOV Board will prevent automatic operation of the ADS system, 2 of the 6 ADS solenoid power supplies originate from this board and no backup power is provided. The

4 remaining SRVs can also be controlled from the backup control thus allowing a single failure and sufficient srvs to depressurize the reactor.

Answer: A

15. 223001K303 001

An event has occurred on Unit 2 resulting in raised containment temperatures and pressures.
Containment spray initiation is directed by the EOIs.
Valve failures have occurred, allowing spray of the drywell only.

Which ONE (1) of the following describe how the torus-to-drywell vacuum breakers will respond to this condition? The vacuum breakers will open when . . .

A. drywell pressure exceeds PSC pressure by > 0.5 psid to relieve pressure from the PSC to the drywell.

B. drywell pressure exceeds PSC pressure by > 0.5 psid to relieve pressure from the drywell to the PSC.

C. PSC pressure exceeds drywell pressure by > 0.5 psid to relieve pressure from the PSC to the drywell.

D. PSC pressure exceeds drywell pressure by > 0.5 psid to relieve pressure from the drywell to the PSC.

C

OPL171.016-26

Answer: C

16. 223002K107 001

Which ONE (1) of the following does not result in a Group 5 signal?

A. RCIC High Pressure Between Rupture Discs (10 psig)

B. RCIC Steam Line High Flow (150% after 3 sec)

C. RCIC Area High Temperature (160 Pump room/147 torus)

D. RCIC pump suction pressure low (10" Hg vacuum)

D
Group 5 isolation signals:
RCIC High Pressure Between Rupture Discs (10 psig)
RCIC Steam Line Low Pressure (60 psig)
RCIC Steam Line High Flow (150% after 3 sec)
RCIC Area High Temperature (160 Pump room/147 torus)

Turbine Trips
Mechanical overspeed (122%)

High turbine exhaust pressure (50 psig)
Vessel high level (+51 inches) (Closes FCV 71-8)
RCIC pump suction pressure low (10" Hg vacuum)
Answer: D

17. 239002A308 001
A small line break in the drywell concurrent with a MSIV closure has resulted in the following plant conditions:

RPV pressure	1000 psig
Drywell pressure	15 psig
Torus pressure	14 psig
Drywell temp (ave)	235 F

An SRV is opened to control RPV pressure. The SRV's tailpipe temperature should read approximately which ONE (1) of the following?

A. 235 F.

B. 250 F.

C. 300 F.

D. 545 F.

C
Constant enthalpy process, throttling saturated steam at 1000# to slightly above atmospheric pressure would result in 300 degrees.
A based on current drywell temp,
B based on saturation temp for torus pressure,
D based on saturation temp for RPV pressure.
Answer: C

18. 290001A301 001
The Main Steam Vault is provided with blowout panels that provide which ONE (1) of the following?

A. secondary containment overpressure protection by relieving to the turbine building.

B. secondary containment overpressure protection by relieving to the torus room.

C. tornado protection by relieving to the refuel floor.

D. tornado protection by relieving to the turbine building.

A
KA 290001A301 BANK OPL171.017 041
Answer: A

19. 256000K201 002

According to 2-OI-2, which ONE (1) one of the following conditions are the normal Condensate Pump Motors amps allowed to be above the steadystate operations based? This limit may be exceeded during certain known plant conditions such as operation.....

A. with one Condensate Pumps at high power. Pump motor current should not exceed 125 amps and winding temperature should not exceed ICS yellow setpoint.

B. with two Condensate Pumps at high power. Pump motor current should not exceed 225 amps and winding temperature should not exceed ICS yellow setpoint.

C. with one Condensate Pumps at high power. Pump motor current should not exceed 225 amps and winding temperature may exceed the ICS yellow set point but should not exceed ICS red setpoint.

D. with two Condensate Pumps at high power. Pump motor current should not exceed 125 amps and winding temperature may exceed the ICS yellow set point but should not exceed ICS red setpoint.

D.
A. two pump operation, should not exceed the red ICS setpoint.
B. 225 amps is the limit for the booster pump, should not exceed the red ICS setpoint.
C. 225 amps is the limit for the booster pump, two pump operation
D. Correct answer
2-OI-2 CONDENSATE SYSTEM UNIT 2

Recent change in operations - Normal maximum line current to Condensate Pump Motors is 118 amps steadystate operations based on a corresponding winding temperature of 248 F (ICS yellow setpoint). This limit may be exceeded during certain known plant conditions such as operation with two Condensate Pumps at high power or during periods of high river temperature. During this time operators should request assistance from Site Engineering and monitor pump motor parameters more frequently. Pump motor current should not exceed 125 amps and winding temperature should not exceed 293 F (ICS red setpoint).

Answer: D

20. 271000K506 001

Which ONE (1) of the following is the reason that Oxygen is added to the offgas system when Hydrogen water chemistry is in service?

A. To inhibit stress corrosion cracking.

B. To improve the recombiner performance.

C. To remove excess freons, oil, and halogens.

D. To enhance Iodine removal.

A
OLP171.030

Catalyst causes mixture to burn slowly rather than explode. Since H2 and O2 production is flux dependent, the amount of heat produced by the recombiner will change with power. The relationship of recombiner DT to power is used to monitor recombiner performance.

Freons, oil, halogens, and water act as poisons to the catalyst

Oxygen is added to the Off-Gas system prior to the recombiner when Hydrogen Water Chemistry (HWC) is in service. (HWC) lowers the rate of decomposition of water and results in higher ratio of H2 to O2.

Answer: A

21. 295008K202 001

Unit 2 is operating at 76 percent power when an MSIV partially closes.

The DRYWELL CONTROL AIR PRESS LOW (2XA553E, Window 35) annunciator is not in alarm.

The Drywell control air compressor suction valves, 2FCV3262A and 2FCV3263A indicate open on Panel 93.

RFW Control System is in THREE ELEMENT control

In response to this event the crew bypasses the steam flow signal for the partially closed MSIV. REDUCES reactor power to 70 percent AND then PLACES the associated MSIV control switch to CLOSE. Assume no additional operator actions. Which ONE (1) of the following will most likely occur.

A. The DRYWELL CONTROL AIR PRESS LOW annunciator will alarm, followed by a Group ____ isolation ONLY.

B. The DRYWELL CONTROL AIR PRESS LOW annunciator will not alarm; however, there will be a Group ___isolation ONLY.

C. The DRYWELL CONTROL AIR PRESS LOW annunciator will alarm, followed by BOTH a Group ____ and a Group ____Isolation.

D. The DRYWELL CONTROL AIR PRESS LOW annunciator will not alarm; however, the reactor will Scram.

D BFN REVIEWER - PLEASE VALIDATE THIS QUESTION ON SIMULATOR and add Group No.
If the Drywell control air low pressure annunciator is not in alarm and the Drywell control air compressor suction valves, 2FCV3262A and 2FCV3263A indicate open on Panel 93, control air pressure is normal.
1 Required action if an MSIV is partially closed, is to REDUCE reactor power to at least 70 percent AND then PLACE the associated MSIV control switch to CLOSE.
2 IF the DRYWELL CONTROL AIR PRESS LOW annunciator is in alarm, THEN REFER TO 2AOI32A1, Loss of Drywell Control Air.
3 EVALUATE Technical Specification 3.6.1.3, Primary Containment Isolation Valves

Bypassing the steam flow signal for a partially or completely isolated steam line could result in the RFW Control System raising Reactor Water Level to the Main Turbine/RFPT high water level trip setpoint when in THREE ELEMENT control. Even though the isolated steam line will produce a steam flow signal of low value, the signal is still valid and is used by the RFW Control System, when in THREE ELEMENT control, for calculating average steam line flow.

Answer: D

22. GEN 2.4.12 001

RC/Q directs the operator to inhibit the ADS auto blowdown function when Standby Liquid Control injection is begun.

The ADS is inhibited under these conditions because of which ONE (1) of the following?

A. ADS actuation would impose a severe pressure and temperature transient on the reactor vessel.

B. The operator can control pressure better than an automatic system like ADS.

C. Severe core damage from a large power excursion could result, if low pressure systems automatically injected on depressurization.

D. If only high pressure injection systems are available an ADS actuation could lead to a loss of adequate core cooling.

C
Old TEGRS Number (Deleted Bank) 10256 Taskno: S-000-EM-02 Skills 2.4.18 Knowledge RO2.7 SRO3.6 Comment: EOI Program manual section 0.V.C (Step RC/Q-15)

Answer: C

23. GEN 2.1.28 001

According to SPP-7.2, Outage Management, which ONE of the follow defines a FUNCTIONAL system?

A. A system, structure or component that is in service or can be placed in service in an OPERABLE state by immediate manual or automatic actuation.

B. A system that has the ability to perform its intended function with considerations that applicable technical specification or licensing/ design basis assumptions may not be maintained.

C. A System that is capable of performing its specified safety function(s). Implicit in this definition shall be the assumption that all necessary attendant instrumentation, controls, normal or emergency electrical power sources, cooling or seal water, lubrication or other auxiliary equipment that are required for the system, subsystem, train, component, or device to perform its specified safety function(s) are also capable of performing their related support function(s).

D. A system that had PERs generated during the previous operating cycle that have been evaluated as operable but degraded / non-conforming conditions, have not been

justified for resolution in the future and have a specified required completion date that is the current outage which has been agreed to by outage management.

B

A. AVAILABLE (Availability)- The status of a system, structure or component that is in service or can be placed in service in a FUNCTIONAL or OPERABLE state by immediate manual or automatic actuation

B. FUNCTIONAL - The ability of a system or component to perform its intended function with considerations that applicable technical specification or licensing/ design basis assumptions may not be maintained.

C. (SPP 3.1) Operable - Operability - A system, subsystem, train, component, or device shall be operable or have operability when it is capable of performing its specified safety function(s). Implicit in this definition shall be the assumption that all necessary attendant instrumentation, controls, normal or emergency electrical power sources, cooling or seal water, lubrication or other auxiliary equipment that are required for the system, subsystem, train, component, or device to perform its specified safety function(s) are also capable of performing their related support function(s).

D. OPERABLE BUT DEGRADED - PERs generated during the previous operating cycle that have been evaluated as operable but degraded / non-conforming conditions, have not been justified for resolution in the future, (i.e., more than one refueling cycle) in accordance with SPP-3.1, ôCorrective Action Programö, and have a specified required completion date that is the current outage which has been agreed to by outage management

Answer: B

24. GEN 2.3.1 001

You are called at home and directed to go to the Hatch Facility to assist in the recovery efforts following a refueling accident. You are informed that you will required a TLD during the assist visit. Which ONE (1) of the following describe the SPP-5.1 - RADIOLOGICAL CONTROLS, requirement for this emergency visit?

A. You must turn in your dosimetry and check out prior to leaving BFN, unless exempted by RADCON.

B. You must turn in your dosimetry and check out prior to leaving BFN, unless exempted by SS or Operations Manager.

C. You must obtain your BFN dosimetry and wear it along with the dosimetry provided by Hatch. Following your return you must report to RADCON to obtain any required bioassay and update their exposure records.

D. You must inform RADCON. You must obtain your BFN dosimetry and wear it along with the dosimetry provided by Hatch. Upon your return, you must present copies of your dose records from Hatch.

A

All individuals who are expected to work in a RCA shall process through RADCON (or RSO for non-nuclear facilities)when arriving, transferring, or terminating at TVAN. In addition, monitored and TVAN staff individuals who will visit another licensee or TVA plant, and require a TLD on that visit, must check out prior to leaving their respective sites unless exempted by RADCON (or RSO). If an employee is assigned to work at a non-TVA installation where an exposure to radiation is incurred, the employee shall inform RADCON (or RSO) of this assignment. The employee shall turn in their dosimetry, obtain any required bioassays, and complete any requested documentation. When the employee returns, they must report to RADCON (or RSO) to obtain any required bioassay and update their exposure records

Answer: A

25. 295025 GEN 2.1.28 001

A failure of the EHC pressure controller causes reactor pressure to reach 1080 psig.
The reactor automatically scrams on high pressure.
Reactor water level to drops to -40 inches.
Several minutes after the scram, level is normal and reactor pressure is being maintained by the turbine bypass valves.
Two control rods are at position 04.

Which ONE (1) of the following should the crew be executing to stablize RPV water level, RPV pressure, and Reactor power?

A. C5, RC/P, RC/Q

B. C4, RC/P, PC/P

C. C5, C2, GOI-100-1

D. C5, RC/P, AOI-100-1

B BFN reviewer verify this is correct answer
OPL171.202 022
Old TEGRS Number (Deleted Bank) 12126

Answer: B

26. GEN 2.4.17 001

Maximum Safe Operating Radiation Level in Secondary Containment is defined as the radiation level above which ONE (1) of the following?

A. All EQ requirements of ECCS systems are exceeded.

B. Personnel access to equipment important to safety will be precluded.

C. Installed monitoring equipment pegs high and actual radiation levels are unknown.

D. Releases from the reactor building will be in excess of Alert Classification limits.

B

Answer: B

27. GEN 2.4.3 001

Per Regulatory Guide 1.97 post accident instrumentation must be appropriately identified in control rooms for ease of Operator Identification. This is accomplished for RPV level instruments by which ONE (1) of the following?

A. Placing black labels on the Emergency Systems Range instruments only.

B. Placing black labels on the Post accident Flood Range instruments only.

C. Placing black labels on both the Emergency Systems Range and Postaccident Flood range instruments.

D. Placing black labels on both the Postaccident Flood range instruments and Shutdown Vessel Flood Range.

C
GEN 2.4.3 Common BANK OPL171.003 055

Answer: C

28. 241000K127 001

Unit 2 is in startup.
Turbine turning gear and the Turbine Lube Oil system not in service.
The bearing metal temperatures have not exceeded 300 F
While attempting to establish steam seals, there is a malfunction in the mechanical vacuum pumps.

steam seal pressure rises above 10 psig.

Which ONE (1) of the following will occur?

A. The header relief valves will lift.

B. Low Condenser Vacuum trip

C. Cold air will be drawn across the steam seals.

D. Auxiliary steam will realign to supply the steam seals

A BFN reviewer verify relief valve setpoint is valid (range ?)
171015R5

Low Condenser Vacuum 21.8" Hg Indicates a loss of heat sink. 2/6 logic

2-OI-47c

3.5Operation with condenser vacuum and no steam seals will draw cold air across the seals.

3.6Condenser vacuum should be established as soon as possible after steam

seals are placed in service.

3.7Steam seal pressure below 1 psig may cause loss of vacuum or a rise in air leakage. Steam seal pressure above 8 psig may cause the header relief valves to lift.

Answer: A

29. 295010K201 001

Drywell Sprays are in service and Suppression Pool level has reached 18 feet. Which ONE (1) of the following actions should be taken?

A. Secure the drywell sprays, because the vacuum breakers from torus to drywell could be covered by water which would restrict or prevent flow from torus to drywell.

B. Secure the drywell sprays, because the weight of water in the suppression chamber will exceed the design weight load.

C. Continue drywell sprays, and lower the suppression pool level because the weight of water in the suppression chamber will exceed the design weight load.

D. Continue drywell sprays, and lower the suppression pool level because the vacuum breakers from torus to drywell could be covered by water which would restrict or prevent flow from torus to drywell.

A

Vacuum breakers from torus to drywell could be covered by water which would restrict or prevent flow from torus to drywell.

Answer: A

30. 259002K104 001

For a full turbine trip to occur, which ONE (1) of the following must occur?

A. both 2-LS-3-208A or 2-LS-3-208C and 2-LS-3-208B or 2-LS-3-208D must be picked up.

B. both 2-LS-3-208A or 2-LS-3-208B and 2-LS-3-208C or 2-LS-3-208D must be picked up.

C. either 2-LS-3-208A and 2-LS-3-208C or 2-LS-3-208B and 2-LS-3-208D must be picked up.

D. either 2-LS-3-208A and 2-LS-3-208B or 2-LS-3-208C and 2-LS-3-208D must be picked up.

C

A" and "C" OR "B" and "D" 208 level signals >+55" will cause a trip.

OPL171.026

Answer: C

31. 261000K609 001

The Unit 2 Reactor Zone and Refueling Zone ventilation have just isolated. The Standby Gas Treatment System has automatically initiated. Which ONE (1) of the following could have caused this condition?

A. High drywell pressure (+ 3. psi).

B. Refueling Zone Rad monitor (RE -140: both detectors) failed downscale.

C. High reactor water level (+60 inches).

D. Blower HS (18A, 40A, 69A) in PULL-TO-LOCK with no Group 6 isolation present.

A BFN reviewer please add noun names to Item D if needed
OPL171.018

HIGH DRYWELL PRESSURE (PIS-64-56 A-D) - 2.45 psi Isolates associated unit's Reactor Zone and Refueling Zone ventilation, automatically initiates the Standby Gas Treatment System.

Answer: A

32. 259002A101 001

The four narrow range level instruments read as follows

LT-3-53 + 70 inches.
LT-3-60 - 10 inches.
LT-3-206 + 34 inches.
LT-3-253 + 38 inches.

Based on the above information you have determined that only two LT have valid signals. Which ONE (1) of the following describes the response of the three element level control system?

A. Will control on the average of the remaining level signals. A process alarm will be generated.

B. Will control on the highest of the remaining level signals. A process alarm will be generated.

C. Will control on the average of the remaining level signals. A process alarm will not be generated.

D. Will control on the highest of the remaining level signals. A process alarm will not be generated.

A

If one level signal is BAD or invalid, the algorithm will calculate the average of the three remaining level signals and will control on that value.

If two level signals are BAD or invalid, the algorithm will average the remaining two levels and will control on that value. In this instance the two remaining signals are compared to each other. If they deviate by more than 8 inches, a process alarm will be generated, but neither will be declared invalid.

The algorithm validates each level signal by comparing them to the average. Level signals that deviate from the average by more than 8 inches are declared invalid, and are discarded from the average.

Answer: A

33. 272000 GEN 2.3.1 001

The Unit 2 reactor is operating at 90 % power, when the following annunciators alarm:

OG Post Trtmt Radiation High (94C; 33)
OG Post Trtmt Rad Monitor HiHiHi/INOP (94C; 35)
Stack Gas Radiation HighHigh (93A; 6)
OG Avg Annual Release Limit Exceeded (94C; 27)

All Alarms are valid. Which ONE (1) of the following actions should the operator take?

A. Immediately Scram the reactor.

B. Reduce core flow to between 50 - 60 %, then Scram the reactor.

C. Immediately Scram the reactor and immediately close the MSIV's.

D. Reduce reactor power to between 50 - 60 % with control rods, then Scram the reactor.

B
KA 272000 GEN 2.3.1

BANK - OPL171.033 012

2AOI662 page 2 IMMEDIATE ACTIONS

Answer: B

34. 201003K102 001

Following a reactor scram which ONE (1) of the following describes the condition of the Scram Discharge Volume?

A. Pressurize to reactor pressure via the scram valves.

B. Depressurized to approximately 65 psig due to leakage past the CRD seals and via the scram valves.

C. Pressurize to the drive water pressure of between 1475-1500 psig.

D. Depressurized to the exhaust water header and cooling water header pressure.

A
OPL171.005 .047
Answer: A

35. 295007A105 001
Unit 3 is operating at 100% with the "A" Reactor Pressure Control Unit in control. Which ONE (1) one of the following would be the result if the "A" Reactor Pressure Control Unit fails upscale?

A. The reactor Scrams on high power.

B. The reactor Scrams on high pressure.

C. The reactor Scrams on low steam line pressure.

D. The "B" Reactor Pressure Control Unit maintains reactor pressure.

C
Answer: C

36. 215001A103 001
While performing TIP Traces on Unit 3 a low water level Scram occurres.

Which ONE (1) of the following correctly completes the statement below concerning the response of the TIP system?

The blue lighted reset PB on PNL 9-13...

A. extinguishes, indicating Squib valve firing permissive received on the valve control unit.

B. extinguishes, the TIP halts travel; the ball valve goes closed after the automatic return of the TIP to the in shield position.

C. illuminates indicating that the ball valve has closed for that TIP channel.

D. illuminates, the TIP continues to traverse in auto mode to its in core limit, then halts travel. The ball valve closes after the automatic return of the TIP to the in shield position.

B BFNP REVIEWER _ PLEASE VERIFY THIS IS STILL CORRECT

OPL171.023 009
Answer: B

37. 233000K301 002
Unit 2 is in a January refueling outage, the RBCCW System has reached 60 degrees. The valves on the SFSP have slowly failed open allowing the spent fuel pool (SFP) temperature to drop to 68 F.

Which ONE (1) of the following actions should be taken?

A. Isolate the demineralizer to prevent the release of particulates trapped by the resin.

B. Isolate the demineralizer to prevent the intrusion of resin fines.

C. Ensure the SFP temperature does not drop below 68 F to minimizes the release of soluble activity.

D. Ensure the SFP temperature is greater than 68 F to remain within the criticality analysis.

D

Maximum normal heat load is the decay heat of the full core unload of fuel at the end of the fuel cycle plus the remaining decay heat of the spent fuel discharged at the previous refuelings.
Min. SFSP Temperature 68 F for criticality evaluations.
OPL171.052
Revision 6
The fuel pool cooling system is only required to be in service to maintain fuel pool water within specifications listed in SPP5.3 and water temperature less than 125 F but greater than 72 F.

3.1.1 [NER/C] Temperatures in the SFSP below 68 F exceed the temperature reactivity assumed in the criticality analysis. [INPO SER 90017]

3.1.2 [NER/C] Maintaining water temperature below 100 F minimizes the release of soluble activity. [GE SIL 541]

Answer: D

38. 245000K304 001
Unit 2 has experienced a loss of I&C BUS A. Which ONE (1) of the following describes the expected position of the Short Cycle valves? Assume no operator actions.

A. A. FCV-229A and FCV-229B fail AS IS.

B. B. FCV-229A and FCV-229B fail OPEN.

C. C. FCV-229A and FCV-229B fail CLOSED.

D. D. FCV-229A and FCV-229B are not affected by the failure of I&C BUS A.

C
ABNORMAL OPERATING INSTRUCTION, 2-AOI-57-5A, LOSS OF I&C BUS A, REVISION 35, Page 3, Changed note 1 to reflect 29A and 29B valves fail closed on loss of I&C BUS A. This is the result of design Change Notice - IC-37 DCN T41152A STAGES 1&2
Answer: C

39. 226001K302 001
The following Unit 2 conditions exist:

A LOCA occurred
Reactor water level is at TAF
Suppression pool cooling is in service
Suppression pool temperature is 89 F

LPCI initiation has just occurred

Which ONE (1) of the following describe the actions that must be taken to regain or maintain control of suppression pool cooling?

A. Nothing, Suppression pool cooling is not affected by LPCI initiation.

B. Place selector switch in SELECT ONLY.

C. Place keylock bypass switch in OVERRIDE position ONLY.

D. Place both the selector switch in SELECT and place keylock bypass switch in OVERRIDE position.

B BFN reviewer please add noun names to switches if needed
LIS-3-52 & 3-62A

E. Modes of Operation

3. Suppression Pool Cooling (continued)
g. Designed to maintain suppression pool temperature below 90íF. This ensures the suppression pool will be able to receive the energy of a LOCA.

h. Suppression pool cooling valves will isolate in the event of a LPCI initiation.

i. To regain control of suppression pool cooling valves after a LOCA, place selector switch in SELECT. Valves can then be opened if level in shroud is above 2/3 core height or if keylock bypass switch is placed in OVERRIDE position.

LIS used to provide a level permissive signal to Cntmt Cooling/spray valves based on level inside the shroud. Permits containment spray only if level is > 2/3 core height with LOCA signal present. A keylock bypass switch can bypass the 2/3 core height interlock.
Answer: B

40. 286000K402 001
The electrical driven fire pumps are running due to actuation of heat detectors in the turbine building. A subsequent loss of 161KV and 500KV offsite power occurrs.

Which ONE (1) of the following action(s) (if any) must be taken in order to reenergize the fire pumps following DG tie on to the shutdown boards?

A. No actions required; pumps will automatically start when a bus voltage between 4150 and 4170 is sensed.

B. Place the NORMAL/EMERGENCY switch for the associated fire pumps to EMERGENCY and back to NORMAL; pumps will automatically start.

C. Place the NORMAL/EMERGENCY switch for the associated fire pumps to EMERGENCY and back to NORMAL; pumps must then be restarted manually at the associated pump breaker.

D. No actions required; pumps will automatically start and sequence on after the load shed relay is eneergized.

B
BANK - KA 286000K402 OPL171.074 046 -
Old TEGRS Number (DeletedBank) 11026 Taskno: U57AAB01 Skills 295003AK4.02
Comment:Ref: 0AOI571A Rev. 0005; 0AOI571A page 8; step 4.2.17

Answer: B

41. 290003K401 001
The following conditions exist:

Refuel Zone Rad Monitor read 12 mr/hr
Reactor Zone Rad Monitor read 4 mr/hr
Control Bay Ventilation Rad Monitor reads 300 cpm above background

Which ONE (1) of the following responses is correct?

A. CREVS starts and normal control room ventilation isolates.

B. CREVS starts and a PCIS Group 6 isolation

C. CREVS starts and a Reactor zone isolation

D. No automatic actions occur

A
KA 290003K401 OPL171.067 014
Answer: A

42. 215003K301 001
A reactor shutdown is in progress.
Power has been lowered to an average level of "50" on range 4 of the IRMs.
An improper valve manipulation results in premature initiation of shutdown cooling (SDC), causing moderator temperature to lower.
Reactor power begins to rise.

Which ONE (1) of the following will prevent fuel thermal limits from being exceeded? (Assume no operator action)

A. Reactor Scram due to low RPV level

B. Reactor Scram due to high RPV pressure

C. Reactor Scram due to IRM high high

D. Reactor Scram due to APRM power-to-flow

C
KA 215003K301 EGT110.033 003
Old TEGRS Number (Deleted Bank)12165
Answer: C

43. 216000A401 001
Which ONE (1) of the following describes the effect of an increase of ambient temperature in the area of the reactor water level instrumentation reference leg run ?

A. Indicated level rises due to reference leg water density lowering.

B. Indicated level rises due to reference leg water density rising.

C. Indicated level lowers due to reference leg water density rising.

D. Indicated level lowers due to reference leg water density lowering.

A
Understanding of reference leg function
Answer: A

44. 264000K401 001
CASx will remove ALL EDG protective trips into the 86G lockout relay except which ONE (1) of the following?

A. Timed overcurrent.

B. Reverse power.

C. Loss of field.

D. Differential overcurrent.

D
CASx will remove ALL generator protective trips into the 86G lockout relay except differential overcurrent (87). (overspeed will also trip DG bkr with CASx present)

1. Diff. Overcurrent
2. Timed overcurrent
3. Reverse power.
4. Loss of field.
5. Overspeed
6. CASx

Answer: D

45. 23000A205 001
The 4kv shutdown boards are being supplied form their normal source.

Which ONE (1) of the following statements describes the loading sequence if an accident signal is received on Unit 2?

A. 2B RHR and 2B Core Spray pumps start 7 seconds after the accident signal is received.

B. RHRSW pumps lined up for EECW start 14 seconds after the accident signal is received.

C. Core Spray pumps (2A, 2B, 2C, 2D) start immediately when voltage is available on their respective shutdown board.

D. RHR pumps (2A, 2B, 2C, 2D) start 7 seconds after the accident signal is received.

A
KA 23000A205 971. OPL171.038 014
Old TEGRS Number (DeletedBank) 10775

Answer: A

46. 239003K603 001
Given the following conditions:

Reactor power 10%
MSIV LINE C INBOARD FCV-137 is stuck at 25% open.

Which ONE (1) of the following MSIVs, if closed, will cause a Half Scram signal?

A. FCV-138 MSIV LINE C OUTBOARD.

B. FCV-151 MSIV LINE D INBOARD.

C. FCV-126 MSIV LINE B INBOARD.

D. FCV-127 MSIV LINE B OUTBOARD.

B
KA 239003K603 OPL171.128 001

Answer: B

47. 295037A201 001
Unit 2 has experienced an ATWS and you have been directed to initiate SLC injection. The following conditions exist for SLC Pump A:

* Red Light On

* Squib Continuity Lights Off
* Flow Light On
* Alarm "SLC Injection Flow to Reactor"
* Alarm "SLC Squib Valve Continuity Lost"
* SLC Pressure 1200 psig
* Reactor Pressure 1000 psig
* Tank Level 50%, lowering

Which ONE (1) of the following is the appropriate action?

A. Initiate Alternate SLC Injection.

B. Continue running SLC Pump A.

C. Stop SLC Pump A and start SLC Pump B.

D. Start SLC Pump B and continue running SLC Pump A.

B

Old TEGRS Number (DeletedBank) 13614 - OPL171.201 002
Answer: B

48. 295005K101 001
RC/Q directs the operators to reduce Recirc. Pump speeds to minimum if the Main Turbo/Gen is synchronized prior to tripping.

Which ONE (1) of the following is the bases for this action?

A. To minimize power oscillations that may result from tripping Recirc Pumps at higher speeds.

B. To prevent RPV level from reaching + 54" as a result of tripping the Recirc pumps.

C. To ensure that Reactor Power is still above 5 % with the Recirc. Pumps at minimum speed, prior to tripping.

D. To prevent RPV level from reaching +11.2" as a result of tripping Recirc. Pumps at higher speeds and initiating PCIS.

B
OPL171.201Old TEGRS Number (Deleted Bank)14285
Answer: B

49. 295028K102 001
Tthe following conditions exist :

RPV Pressure 30 psig
DRYWELL temperature 279 F

Which ONE (1) of the following describes why LI-3-55 (Shutdown Floodup Range) may not be reliable for level indication?

A. The differential pressure transmitter is not environmentally qualified to operate at saturated temperature conditions.

B. Drywell pressure is the same as reactor pressure, providing a zero differential pressure (upscale level indication).

C. The reference leg may actually be boiling, causing indicated water level to be higher than actual level.

D. The density of the water in the variable leg is too low to provide a differential pressure after level lowers below seperator skirt.

C
Old TEGRS Number (DeletedBank) 11069
Answer: C

50. 295016A102 001
While operating in 2AOI1002, Control Room Abandonment, which ONE (1) of the following is the reason that Reactor Feedwater Pump outlet valves and the Startup Level Control Valve are closed prior to depressurizing below 500 psig?

A. Prevents reactor vessel flooding from the condensate system.

B. Prevents feedwater pump runout.

C. Prevents draining the condensate into the hotwell.

D. Prevents uncontrolled reactor depressurization due to cold water injection.

A
2AOI1002, Control Room Abandonment
Verifying Reactor Feedwater Pump outlet valves and Startup Level Control Valve closed prior to depressurizing below 500 psig prevents Reactor Vessel flooding from the Condensate System.

Answer: A

51. GEN 2.3.2 001
According to the Nuclear Power and Safety Health Manual, under which ONE (1) of the following conditions may an employee be exempted from the use of Personnel Protective Equipment (PPE) for a short duration.

A. If a Supervisor directs the Non-use of PPE.

B. If an Employee concurs with the non use of PPE.

C. To complete actions in EOPs.

D. To save an individual from immediate peril.

B
Nuclear Power and Safety Health Manual, Section VII, 5.7 item 3

This is required to be implemented by operations level managers in TVAN Safety and health manual, Section II, 3.0, Responsibilities, Operations Level Managers.

Answer: B

52. 295031K305 001

A change in which ONE (1) of the following parameters does not effect the Emergency Systems Range Level instruments providing the -122" ADS initiation setpoint?

A. Jet pump flow.

B. Reactor Building temperature.

C. Drywell temperature.

D. Reactor pressure.

A

OPL171.201 Revision 5 Appendix 2

2. EMERGENCY SYSTEMS RANGE LEVEL INSTRUMENTS (2-LI-3-58A and 2-LI-3-58B)

The Emergency Systems Range Level instruments, although not affected by changes in jet pump flow, are affected by changes in Rx. Bldg. temperature, Drywell temperature, and Rx. pressure. Worse case conditions for each of these parameters could cause the indicated RPV water level to be as much as 80 inches different from the actual RPV water level.

The range of RPV water level indication for 3-58A and B is -155 to +60 inches. Many important actions need to be performed, or verified using these instruments.

a. -45" (ARI, HPCI, RCIC)

b. -122" (ADS, CS, RHR, MSIVs)

Answer: A

53. 295006K101 001

Unit 2 was operating at 100 % power for 200 days, Following a reactor Scram, which ONE (1) of the following describes what will happen to the Xenon135 concentration in the reactor?

A. initially increase due to the decay of iodine already in the core and then decrease from burnout.

B. initially increase due to the decay of iodine already in the core and then decrease from decay.

C. remain the same because the decay of iodine and xenon balance each other.

D. decrease immediately, then slowly increase due to the differences in the half lives of iodine and xenon.

B

Answer: B

54. 295019A101 001

The Emergency Control Bay Air Compressor has just auto started. Which ONE (1) of the following is the pressure of the Control Air Pressure Header?

A. 53 psig.

B. 65 psig.

C. 73 psig.

D. 85 psig.

C BFN reviewer verify normal operating band does not invalidate this question
0-AOI-32
A. Reactor will scram at 53 psig
B. Control air cross tie closes at 65 psig
C. Correct
D. Servive Air cross tie closes at 85 psig

Answer: C

55. 295002K302 001

Unit 2 is operating at rated conditions.
A slow loss of condenser vacuum occurs.

Which ONE (1) of the following lists the correct order in which low vacuum trip signals are initiated as condenser vacuum lowers from 28" Hg to 0" Hg?

A. SJAE isolates; main turbine trips; RFPTs trip.

B. Main turbine trips; SJAE isolates; turbine bypass valves close.

C. Main turbine trips; turbine bypass valves close; SJAE isolates.

D. Turbine bypass valves close; main turbine trips; RFPTs trip.

C
OPL171.030 028

Answer: C

56. 295001A101 001
Unit 3 is operating at 50% power when the Recirculation flow unit B fails downscale.

Which ONE (1) of the following is the automatic response to this failure?

A. Turbine runback.

B. Rod block only.

C. Half scram and rod block.

D. Full scram and rod block.

B
295001A101 Modified 629. OPL171.022 001
Answer: B

57. 202001A107 001
Which ONE (1) of the following describes how the recirculation Motor Generator (MG) set would respond if the total feedwater flow lowered to less than 20% if the bailey drive lock has actuated?

A. Run back to 75% Speed

B. Remain locked

C. Run back to 20% Speed

D. Run back to 28% Speed

D
Answer: D

58. 295033A104 001
When venting the suppression chamber per appendix 12 of the EOIs, some of the interlocks which would prevent opening FCV 84-20 (Train A vent to SGT) are bypassed.

Which ONE (1) of the following conditions would still prevent the valve from opening when venting per appendix 12?

A. drywell pressure > 2.45 psig.

B. reactor water level < 11.2 inches.

C. reactor zone exhaust radiation > 72 mr/hr.

D. no SGT trains in operation.

D
OPL171.206 004
Answer: D

59. 295032K303 001
Which ONE (1) of the following is the basis for the Main Steam Line (MSL) Tunnel high temperature isolation?

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.

B
PCIS purpose

BSEP BANK LOI-CLS-LP-012A*017001

Answer: B

60. 295034K202 001
Refueling is in progress. Refuel Zone isolation due to high radioactivity has just occured as indicated on 2-RM-90-140 on panel 2-9-10 and on recorder 2-RM-90-140 on panel 2-9-2.

Which one of the following is the required action?

A. Stop any fuel movement and move personnel to a non-contaminated part of the refuel floor.

B. Stop any fuel movement and contact HP to investigate.

C. Stop any fuel movement and evacuate personnel from the refuel floor.

D. Ensure all fuel is moved to a safe location, move personnel to a non-contaminated part of the refuel floor, contact HP, then evacuate the refuel floor.

C
2-AOI-64-2d Step 4.2.3
Answer: C

61. 295020K203 001

Unit 2 is operating at 100 % power when an inadvertent reactor zone isolation occurs. Assume there are no operator actions to restore this isolation, which ONE (1) of the following will occur within approximately 5 minutes?

A. A unit scram due to high steam tunnel temperature.

B. An auto start of reactor building ventilation due to high temperature.

C. Both the RX & Refueling zone EXH channels will alarm due to high moisture content.

D. An isolation of PCIS groups 4 and 6.

A

2-AOI-64-2D
Answer: A

62. 295021A103 001
Unit 2 is in the Shutdown Cooling Mode
The following alarms actuate:

RHR SYS I PUMP A Tripped 2-XA-55-3D, Window 13
RHR SYS I PUMP B Tripped 2-XA-55-3D, Window 14
RHR SD CLG FLOW LOW 2-XA-55-3D, Window 11

Both RHR SYS II PUMPs are tagged out.

The first attempt to restart RHR SYS I PUMP A is successful and then the pump trips again. The attempt to restart RHR SYS I PUMP B is not successful. Both 2-FCV-74-47 and 2-FCV-74-48 are open.

Which ONE (1) of the following may occur?

A. Overfilling the reactor vessel.

B. Overfilling the suppression pool.

C. Draining the reactor vessel.

D. Draining the suppression pool.

C BFN reviewer is answer B a possible correct answer if so change
2-AOI-74-1
Answer: C

63. 295037K201 001
Following a scram a control rod failed to fully insert and reactor power cannot be determine.

Which ONE (1) of the following are the actions required by 2-AOI-100-1, Reactor Scram ?

A. RESET the scram then enter 2-EO-1 Flowchart

B. Do NOT reset the scram and enter 2-EO-1 Flowchart.

C. RESET the scram and then transfer to 2-OI-85

D. Do NOT reset the scram and transfer to 2-OI-85.

A BFN reviewer replace distractor C with ALternate rod insertion procedure
2-AO-100-1, Reactor Scram

[INPO/C] IF any control rod fails to fully insert, THEN

RESET the scram per Steps 4.2.23 thru 4.2.23.10 and PERFORM the following, as required.
IF reactor power is above 5% or CANNOT be determined, THEN

ENTER 2EOI1 Flowchart. [INPO SOER 80006]
4.2.10.1 WHEN WEST and EAST CRD DISCH VOL WTR LVL HIGH HALF SCRAM annunciators (2XA554A1 and 4A29) are reset, THEN

INITIATE a manual scram. REPEAT Step 4.2.10, as necessary, as long as rod motion is observed.
4.2.10.2 REFER TO 2OI85 for rods which fail to insert fully.

Answer: A

64. 295009A104 001
With unit 2 at 80% power, a turbine trip causes a reactor scram. A Group 3 isolation occurs on low reactor water level, and due to a relay failure, FCV691 and 692 cannot be reopened. All other group isolations (2, 6, and 8) occur normally, are reset, and systems restored. Which ONE (1) of the following is the correct response?

A. Begin a cooldown on the bypass valves ONLY

B. Restart the recirculation pumps immediately.

C. Begin a cooldown using both the bypass valves and the SRVs.

D. Begin a cooldown using SRVs ONLY.

A
OPL171.074 113
AOI-100-2, Step 4.2.7.2
Answer: A

65. 600000 GEN 2.1.27 001

There has been a loss of the regulating transformer for I&C "A" on Unit 3. Which ONE (1) of the following describe the effect this will have on the fire suppression system?

(Assume no operator actions)

A. The preaction sprinkler system(s) and the fire pumps will still operate automatically.

B. The preaction sprinkler system(s) will only function in manual, however the fire pumps will still operate automatically.

C. The preaction sprinkler system(s) will function automatically, however the fire pumps will only operate manually.

D. The preaction sprinkler system(s) and the fire pumps will only operate manually.

D
BFN REVIEWER - Please verify this is still correct
Answer: D

66. 295015A101 001
A scram condition has occurred on Unit 2 with the following conditions present:

Scram solenoid busses deenergized;
Backup scram valves energized;
ARI initiated (by operator);
Mode switch in SHUTDOWN;
30% of the control rods DID NOT insert.

Which ONE (1) of the following would cause the 30% failure to scram?

A. Failure of the scram air header to depressurize.

B. Failure of the RPS scram logic.

C. Scram Discharge Volume (SDV) vent and drain valves failure to close.

D. Scram Discharge volume full.

D
OPL171.005 026
Old TEGRS Number (DeletedBank) 12440
Answer: D

67. 295038A201 001
A LOCA and failure of the primary containment pressure suppression function has occurred.
The following plant conditions exist:

RPV water level 60 inches and rising

ECCS	Injecting
Drywell pressure	58 psig and rising
Drywell venting status	Venting via Appendix 13
Offsite release rate	1.7 x 10E+08 uci/sec (gaseous)

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

A. Reduce containment venting rate to remain below 1.4 x 10E+08 uci/sec.

B. Reduce containment vent immediately to bring release rate within I.T.S. limits.

C. Terminate venting.

D. Continue venting irrespective of offsite release rate.

D
OPL171.203 017
Old TEGRS Number (DeletedBank) 13656 : EOI Program manual, section OV_D, page 61
Answer: D

68. 259001A106 001
Unit 2 is at 100 % power. A heater tube leak activates the 2-LA-6-4B LEVEL HIGH alarm for the #2A feedwater heater. Which ONE (1) of the following describes the response of the feedwater system?

A. Drain inlet flow from the #2A heater to the #1A heater is isolates.

B. The extraction steam line Non Return Valves to the #2A heater closes.

C. The emergency drain valve from the #2A heater to the heater drain cooler opens.

D. The drain valve to condenser, 2-LCV-6-4B, opens.

D

2-ARP-925-562C

Probable cause -Tube Leak heater A2.

Or Malfunction of :

a. Drain valves 2-LCV-6-4A, 2-LCV-6-4B or 2-FCV-6-94
b. Alarm/bypass level control transmitter 2-LT-6-4A or 4B.

AUTOMATIC ACTION: Drain valve to condenser 2-LCV-6-4B opens.
Answer: D

69. 295013K301 001

A reactor scram has occurred and HPCI is needed to maintain reactor water level. Suppression pool temperature is 145 F.

Which ONE (1) of the following is the reason that the HPCI suppression pool water level suction transfer logic interlock is defeated and HPCI is operated with a suction from the CST?

A. The suppression pool provides insufficient NPSH to the HPCI pump and cavitation may occur at rated flow.

B. The HPCI pump shaft seals are not designed to operate at temperatures in excess of 140 F and may fail.

C. The HPCI lube oil will exceed allowable temperatures and the HPCI function could be lost due to damaged bearings.

D. The HPCI turbine exhaust pressure is likely to exceed the turbine trip setpoint.

C
Old TEGRS Number (DeletedBank)
REFERENCE: EOI Program Manualpage 15Section V-B Operator Caution Basis

OPL171.201 017
Answer: C

70. 500000A105 001
Due to an accident condition, the following plant parameters exist:

Drywell Hydrogen	5.4 %
Drywell Oxygen	6.0 %
Suppression Chamber Hydrogen	4.0 %
Suppression Chamber Oxygen	5.5 %
Suppression Pool Level	17.0 feet
Drywell temperature	250 F
Drywell Pressure	18 psig
RPV Level	+30 inches

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

A. Spray the Suppression Chamber, Vent the Suppression Chamber, Initiate CAD to the Suppression Chamber.

B. Spray the Suppression Chamber, Initiate CAD to the Suppression Chamber, Vent the Drywell.

C. Spray the Suppression Chamber, Spray the Drywell, Vent the Suppression Chamber irrespective of offsite release rates, and Initiate CAD to the Drywell.

D. Spray the Suppression Chamber, Spray the Drywell, Emergency Depressurize, Vent and Purge Irrespective of OffSite release rates.

C
Old TEGRS Number (DeletedBank) 13653 EOI Program Manual, section OVD,

Answer: C

71. 202002K402 001
With both recirculation MG A and B Panel Display Stations in Local the speed setpoint will indicate which ONE (1) of the following?

A. The lower of the two individual MG set speeds

B. The higher of the two individual MG set speeds.

C. The average of the two individual MG set speeds.

D. The weighted average of the two individual MG set speeds.

B
OPL171.007
Revision 18 RECIRCULATION SYSTEM LESSON PLAN NO. 007 Setpoint

Indicates the desired speed setpoint to be maintained by the recirc pumps when the MG A (B) PDSÆs are in REMOTE. This value is controlled by the operator when selected for setpoint.

The speed setpoint value will lower in response to an automatic or manual runback condition.

With both MG A (B) PDSÆs are in Local, the speed setpoint will indicate the higher of the two individual MG set speeds.

Answer: B

72. 212000K407 001
Which ONE (1) of the following occur when the Unit 2 Scram Response Logic initiates?

A. The red light at SCRAM RESPONSE INHIBIT switch, 2HS465 on Panel 295, illuminates.

B. The logic polls RFP controls for the availability of one RFP in AUTO. The polling sequence is RFP 2A, 2B, and 2C.

C. Once one RFP in AUTO is found, the polled RFPT will control Reactor water level between its lower speed limit of 600 rpm and an upper speed limit of 5600 rpm.

D. The non-polled RFP pumps are placed in STOP and the RFPT speeds are set at 600 rpm. These pumps are still available for manual or automatic control to the upper speed limit of 6500 rpm.

A
When Scram Response Logic initiates, the following actions occur:

The red light at SCRAM RESPONSE INHIBIT switch, 2HS465 on Panel 295, illuminates.

The logic polls RFP controls for the availability of one RFP in AUTO. The polling sequence is RFP 2C, 2B, and 2A.

Once one RFP in AUTO is found (normally RFP 2C), the polled RFPT will control Reactor water level between its lower speed limit of 600 rpm and an upper speed limit of 3900 rpm.

The remaining pumps (normally RFP 2A and 2B) are transferred to MANUAL and the RFPT speeds are set at 600 rpm. These pumps are still available for manual or automatic control to the upper speed limit of 5600 rpm.

Answer: A

73. 295004K203 001

Annunciator inverter A located in Communications room, Bay 78 failed. The 120 Volt AC POWER ON LIGHT is NOT illuminated. Which ONE (1) of the following is the consequence of this failure?

A. Loss of the A inverter will cause a trouble alarm to ring. Associated annunciators will function normally.

B. Loss of the A inverter will NOT cause a trouble alarm to ring. Associated Annunciators will function normally.

C. Loss of the A inverter will cause a trouble alarm to ring. Associated annunciators will not function.

D. Loss of the A inverter will NOT cause a trouble alarm to ring. Associated Annunciators not function normally.

B

Each annunciator bank is supplied power from two inverters connected in parallel. Loss of one inverter will cause a trouble alarm to ring if 120 volt AC POWER ON LIGHT is illuminated. Annunciators will function normally.

Answer: B

74. 295024A104 001

Unit 2 ECCS has initiated automatically on both high drywell pressure and low RPV pressure signals. The ECCS has just begun to inject. What is the reactor pressure and under what circumstances can the injection be secured?

A. RPV has just decreased below 340 psig. If injection from these pumps is not required to assure adequate core cooling, preventing them from injecting is appropriate since uncontrolled injection only complicates actions to maintain control of RPV water level.

B. RPV has just decreased below 340 psig. If injection from these pumps is not required to assure adequate core cooling, preventing them from injecting is not appropriate until the cause of the ECCS automatic initiation has been cleared.

C. RPV has just decreased below 430 psig. If injection from these pumps is not required to assure adequate core cooling, preventing them from injecting is appropriate since uncontrolled injection only complicates actions to maintain control of RPV water level.

D. RPV has just decreased below 430 psig. If injection from these pumps is not required to assure adequate core cooling, preventing them from injecting is not appropriate until the cause of the High Drywell pressure automatic initiation has been cleared.

A
171202R5

Entry conditions relate directly to the key parameters controlled by EOI-1. Low RPV water level and high RPV pressure entry conditions are directly related to the sections for controlling these same two parameters. The high drywell pressure entry condition is indicative of a line break occurring in the drywell and thus relates to RPV water level control. A condition that requires a reactor scram coincident with the reactor not subcritical is indicative of a failure-to-scram, and thus relates directly to reactor power control.

Low pressure ECCS initiates automatically on high drywell pressure and low RPV pressure signals and begin to inject when RPV pressure decreases below 340 psig, shutoff head of the pumps. If injection from these pumps is not required to assure adequate core cooling, preventing them from injecting is appropriate since uncontrolled injection only complicates actions to maintain control of RPV water level.

Answer: A

1. GEN 2.2.22 001

The Precautions and Limitations section of GOI-100-1A states the Heatup Rate should be limited to 50 F per hour until moderator temperature reaches 215 F.
Which ONE (1) of the following is the basis for this limit?

A. Reduce thermal stress on nozzle welds.

B. Reduce hydrogen content of the coolant.

C. Reduce hydrogen and oxygen content of the coolant.

D. Reduce oxygen and hydrogen peroxide content of the coolant.

D
GEN 2.2.22 SRO ONLY BFN BANK OPL171.059 036
Answer: D

2. GEN 2.1.10 001

You are in the position of US. The SM has asked you to relieve him for a few minutes. There are several NRC personnel in the control area conducting initial reactor operator examinations. While these activities are not interfering with daily plant activities, you are concerned with the number of people in the control room. According to SSP100, Plant Operations, which ONE (1) of the following actions should be taken?

A. Ask the NRC personnel to leave the control room.

B. Contact the Plant Manager for resolution.

C. Contact the NRC Senior Resident Inspector for resolution.

D. Nothing. NRC personnel shall be allowed to enter or be present in the control room for any activity.

Solution: B. SRO ONLY
There are no specific license conditions or regulations that cover this area

SSP100, Plant Operations:
3.6 Control Room Activities

E. The SM, US and the UO have the authority to restrict access to or remove personnel from the control room. NRC personnel shall be allowed to enter or be present in the control room. If the SM has concern over the number or activities of NRC personnel, he shall contact the Plant Manager for resolution.

Answer: B

3. GEN 2.1.26 001

An annunciator was calssified as a Short Term NUISANCE ALARM in accordance with OPDP-4, Annunciator Disablement. No Technical Specification action requirements are applicable, the alarm does not provide information vital to Operator actions and the annunciator

disablement is recorded in the Narrative Log. A justification for the disablement was also recorded in the narrative log.

Which ONE (1) of the following is the time at which the annunciator must be re-enabled?

A. Prior to the end of the shift.

B. Within 4 hours.

C. Within 24 hours

D. Within 72 hours.

A

OPDP-4, Annunciator Disablement

IF an annunciator is classified as a Short Term NUISANCE ALARM by the unit SRO, THEN the annunciator may be disabled provided the following requirements are complied with:
1. LOG disablement and enablement of the annunciator in the Narrative Log. The entry should include a justification for the disablement, and Technical Specification action requirements if applicable.

2. ENSURE alarm does not provide information vital to Operator actions.

3. ENABLE the annunciator prior to the end of the shift on which it was disabled. The intent of this requirement is that long term operation (more than one shift) with a nuisance alarm disabled under this section is unacceptable.

Answer: A

4. GEN 2.1.6 001
Which ONE (1) of the following is correct concerning 2-AOI-1002, Control Room Abandonment?

A. Does NOT support, shutting down the Reactor during any type of accident.

B. Supports shutting down the Reactor during ANY type of accident.

C. Supports shutting down the Reactor during ANY type of accident, EXCEPT accidents
requiring entry into SAMGs.

D. Supports shutting down the Reactor during ANY type of accident, EXCEPT loss of coolant accidents.

A.
ABNORMAL OPERATING INSTRUCTION, 2AOI1002, CONTROL ROOM ABANDONMENT, REVISION 46, DATE: 06/16/2000, EFFECTIVE DATE: 06/20/2000

Section 1.1 Scope - This procedure can NOT be properly executed for, and does NOT support, shutting down the Reactor during any type of accident.

Answer: A

5. 295003 GEN 2.4.16 001

Unit 2 has inserted a manual reactor Scram due to lowering condenser vacuum. Control rods failed to insert on the Scram.

The following plant conditions exist:

- Reactor power 31%
- Steam flow 4 M/lbs/hr
- Reactor Pressure 960 psig, controlled by EHC
- DW pressure 0.6 psig and stable
- Main Turb. tripped

The operator is performing EOI appendix 1F to reset and Scram the reactor. Jumpers to bypass the RPS trips have been requested, but NOT installed.

Which ONE (1) of the following would prevent the operator from resetting RPS prior to jumper installation?

A. MSIV's are closed.

B. RPS channel B deenergized.

C. Turbine Stop vlave closed with reactor power > 30%.

D. IRMs upscale HI HI due to being inserted, but not ranged up.

B

Answer: B

6. GEN 2.2.26 001

You are the Shift Manager. Unit 2 is in a Refueling outage, loading fuel, all rods inserted. The IM foreman notifies the you that the high flux trip for IRM A in quadrant one & IRM E in quadrant three are inoperable due to an Apprentice IM error on performing surveillance on the instruments. All other IRM's are operable. Which ONE (1) of the following actions are required by Tech Specs?

A. Restore RPS trip capability in 1 hour.

B. Trip RPS A or B in 6 hours.

C. Trip RPS A within 12 hours.

D. No action required.

D

PROVIDE APPLICABLE TS SECTIONS.

LCO 3.3.1.1 Table 3.3.1.11 Function 1.a and 1.b not required in MODE 5 with all rods in.
GEN 2.2.26 BFN BANK OPL173.937 240
Answer: D

7. GEN 2.2.29 001
Upon receipt of a Shipping Containers Containing Fuel Related Components the Site Vice President has assign you to the position of Fuel Handling Supervisor (FHS). You are not involved in the receipt inspection. You are called to a brief meeting in the site vice presidents office. The person sent to relieve you is:

An active licensed SRO.

Familiar with all site procedures and instructions, Technical Specifications, FSAR sections, and industry experience as applicable to the FRC activities to be supervised.

Knowledgeable in the areas of radiological control, special nuclear material control, and reactivity management as applicable to the FRC activities to be supervised. However, the individuals certification has lapsed.

Which ONE (1) of the following is correct with respect to whether or not a person with these qualifications can relieve you for a short period of time?

A. Yes; however, the relief FHS may not physically perform the activities to be supervised.

B. Yes, and the relief FHS may perform any of the activities to be supervised.

C. No, all activities must be suspended while you are away.

D. No, Certification/recertification of each fuel FRC handler shall be documented, including the basis for certification/recertification prior to him assuming relief FHS duties for any length of time.

A. SRO ONLY

3.0 FUELHANDLINGSUPERVISOR(FHS)

a. All Fuel Handling Supervisors shall meet the following qualifications, except as described in Step D of this section:

a. Active licensed Senior Reactor Operator (SRO).

b. Familiar with all site procedures and instructions, Technical Specifications, FSAR sections, and industry experience as applicable to the fuel/FRC activities to be supervised.

c. Knowledgeable in the areas of radiological control, special nuclear material control, and reactivity management as applicable to the fuel/FRC activities to be supervised.

B. Fuel Handling Supervisors involved in fuel handling shall meet the requirements of Section 1.0 above.

C. Fuel Handling Supervisors involved in new fuel/FRC receipt inspection shall meet the requirements of Section 2.0 above.
D. Fuel Handling Supervisors not involved in new fuel/FRC receipt inspection may be relieved for short periods of time by anyone meeting the requirements of Step A of this section. This relief shall include a turnover of activities in process or anticipated, sufficient to ensure continued safe operation of the activities in progress. If not certified in accordance with this Appendix, the relief Fuel Handling Supervisor may not physically perform the activities to be supervised.

Answer: A

8. GEN 2.2.33 001
While a control rod is being inserted using the EMERGENCY IN, which ONE (1) of the following could have terminated rod insertion?

A. The automatic sequence timer deenergizes

B. A RBM rod block

C. A OPRM pretrip condition

D. A RWM insert block

D
GEN 2.2.33 SRO ONLY BANK OPL171.029 019

Answer: D

9. GEN 2.2.5 001
SPP-10.5, Plant Operations Review Committee, states that an individual that holds a current SRO license for the applicable station should be present during PORC meeting. Under which ONE (1) of the following conditions may this requirement be waived?

A. This requirement may be waived by the PORC Chairman if it is determined that the
subject of item(s) being presented to the PORC at a particular meeting do not require the presence of a SRO and waiving of the requirement is documented in the PORC minutes.

B. This requirement may be waived by the Site Vice President if it is determined that
the subject of item(s) being presented to the PORC at a particular meeting do not require the presence of a SRO and waiving of the requirement is documented in the PORC minutes.

C. This requirement may be waived by the PORC Chairman if it is determined that the
subject of item(s) being presented to the PORC at a particular meeting do not require

the presence of a SRO and provide written notification has been supplied to the Site Vice President and NSRB.

D. This requirement may be waived by the Site Vice President if it is determined that
the subject of item(s) being presented to the PORC at a particular meeting do not require the presence of a SRO and provide written notification has been supplied to the PORC Chairman and is documented in the PORC minutes.

A
3.4 PORC Meetings

3.4.1Quorum

An individual that holds a current SRO license for the applicable station should be present in the meeting. This requirement may be waived by the PORC Chairman if it is determined that the subject of item(s) being presented to PORC at a particular meeting do not require the presence of a SRO and waiving of the requirement is documented in the PORC minutes.

Answer: A

10. GEN 2.3.10 001

BFN has employed a number of summer students and interns. This group is comprised entirely of minors. The group includes non-declared pregnant females and declared pregnant females. In order to comply with BFN occupational exposure to radiation from licensed and unlicensed radiation sources which ONE (1) of the following describes the type of work members of this group can be assigned?

A. They could perform any task that would result in an exposure of no greater than 100 mrem per year for all the individuals.

B. They could perform any task that would result in an exposure of up to 500 mrem per year for all the individuals.

C. They could perform any task that would result in an exposure of less than 100 mrem per year for minors and 500 mrem for the declared pregnant females.

D. They could perform any task that would result in an exposure of less than 500 mrem per year for minors and 100 mrem for the declared pregnant females.

A
Dosimetry may be issued by RADCON after an NRC FORM 4 or equivalent has been initiated and signed by the individual and all applicable requirements have been met (i.e., bioassay, training, etc.).

For individuals requiring an administrative dose level (ADL) of less than 500 mrem per year (less than 100 mrem per year for minors and declared pregnant women) for occupational exposure to radiation from licensed and unlicensed radiation sources under the control of the licensee, documentation of current year dose and previous years dose must be provided and signed by the individual.

Answer: A

11. GEN 2.4.1 001
Which ONE (1) of the following is not an immediate action of 2AOI11, Relief Valve Stuck Open?

A. IDENTIFY stuck open relief valve by OBSERVING SRV TAILPIPE FLOW MONITOR,
2-FMT-1-4, on Panel 293

B. IDENTIFY stuck open relief valve by OBSERVING MSRV DISCHARGE TAILPIPE
TEMPERATURE recorder, 2TR11 on Panel 2947.

C. PLACE affected relief valve control switch from CLOSE to OPEN to CLOSE several times,
and OBSERVE indications to see whether valve closes.

D. IF ANY EOI entry condition is met, THEN ENTER the appropriate EOI(s).

D
4.1 Immediate actions:

4.1.1 IDENTIFY stuck open relief valve by OBSERVING following:

4.1.1.1 SRV TAILPIPE FLOW MONITOR, 2-FMT-1-4, on Panel 293, or

4.1.1.2 MSRV DISCHARGE TAILPIPE TEMPERATURE recorder, 2TR11 on Panel 2947.

4.1.2 PLACE affected relief valve control switch from CLOSE to OPEN to CLOSE several times, and OBSERVE indications to see whether valve closes.

4.2 Subsequent Action

4.2.1 IF ANY EOI entry condition is met, THEN
ENTER the appropriate EOI(s).
Answer: D

12. 295022A201 001
The following plant conditions exist:

Reactor startup and heatup in progress - Reactor pressure is 550 psig
CRD Pump "A" is tagged out and should be returned to service in about 20 minutes.
CRD Pump "B" tripped and would not restart
One ACCUMULATOR TROUBLE alarm annunciates

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

A. Suspend all startup activities until a CRD pump is returned to service. Place the mode switch in SHUTDOWN if a CRD pump cannot be started before a CRD high temperature alarm is received.

B. Manually scram the reactor.

C. Suspend all startup activities until the CRD pump is returned to service. Place the mode switch in SHUTDOWN if CRD system pressure drops to minimum scram pressure.

D. Immediately suspend all startup activities until a CRD pump is returned to service. Place the mode switch in SHUTDOWN if second accumulator trouble alarm is received.

B BFN reviewer should answer B be Immediate manual Scram
Bank Modified
Old TEGRS Number (DeletedBank) 12311 Taskno: U085AB03 Skills 295022K3.01 KnowledgeRO3.7 SRO3.9 Comment:2AOI853 page 3
OPL171.074 083
Answer: B

13. GEN 2.4.29 001
Which ONE (1) of the following is correct concerning the Radiological Emergency Plan. If an emergency action level for a higher classification was exceeded; but the present situation indicates a lower classification.....

A. the higher classification shall be declared.

B. only the lower classification should be reported to NRC and the CECC if staffed, or the ODS, if the CECC is not staffed.

C. the higher classification shall be reported to NRC and the CECC if staffed, or the ODS, if the CECC is not staffed, but the higher classification should not be declared.

D. the higher classification should be reported to CECC, if staffed, or ODS, if the CECC is not staffed, and the lower classification reported to NRC.

C
Comment: Ref: EPIP1, Page 3

Old TEGRS 10497 Skills 2.4.30

Answer: C

14. 295010 GEN 2.4.4 001
Which ONE (1) of the following actions are taken in EOI Appendix 8E to allow restarting the reactor zone ventilation fans as necessary to reduce main steam vault temperature and what is the purpose of these actions?

A. bypass Groups 1, 2, and 3 isolation logic, these bypass actions eliminate the possibility of an MSIV isolation resulting from high temperature in this area.

B. bypass Group 6 isolation logic, these bypass actions terminate the loss of reactor coolant inventory and simplify RPV water level control.

C. bypass Group 6 isolation logic, these bypass actions eliminate the possibility of an MSIV isolation resulting from high temperature in this area.

D. bypass Groups 1, 2, and 3 isolation logic, these bypass actions terminate the loss of reactor coolant inventory and simplify RPV water level control.

C
Step RC/L-2 - not EOI - 8E
Isolation actions terminate the loss of reactor coolant inventory and simplify RPV water level control. The scope of "isolations" includes those valved lines that connect directly to the RPV and penetrate primary containment. These lines are isolated by PCIS Groups 1, 2, and 3 which include main steam lines, RHR shutdown cooling suction lines, and RWCU.

EOI Appendix 8E bypasses low RPV water level and high drywell pressure Group 6 isolation logic to the Reactor Zone Ventilation System. This allows restarting reactor zone ventilation fans as necessary to reduce main steam vault temperature so as to eliminate the possibility of an MSIV isolation resulting from high temperature in this area. Once these Group 6 isolation interlocks are bypassed, EOI Appendix 8F provides guidance to restore Reactor Zone Ventilation System to service.

KA 295010 GEN 2.4.4 SRO ONLY NEW

Answer: C

15. 295014A203 001
Which ONE (1) of the following plant conditions is a symptom of an inadvertent HPCI injection?

A. Decrease in reactor pressure.

B. APRM flow comparator alarm.

C. Positivie reactor period.

D. Recirc pump runback.

C
BFN REVIEWER - Please verify this is correct
Answer: C

16. 295030 GEN 2.1.32 001
EOI-1 and EOI-2 are being executed as a result of a reactor coolant leak in the drywell. The following conditions exist on the Unit:

- The reactor is shutdown with all control rods fully inserted
- A reactor cooldown is in progress

- Reactor pressure 470 psig
- Drywell pressure 3.8 psig
- Drywell temperature (TI-64-52AB) 175 F
- Reactor water level instruments read as follows:

LI-3-58A	+25"
LI-3-58B	+26"
LI-3-53&206	+11"
LI-3-60	+11"
LI-3-55	+10"

Which ONE (1) of the level instruments CANNOT be used to determine reactor water level?

A. LI-3-53.

B. LI-3-55.

C. LI-3-58B.

D. LI-3-60.

B
LI-3-55
Old TEGRS Number (Deleted Bank) 12092 EOI-1 Caution 1
Answer: B

17. 259026A201 001
Unit 2 has experienced a Rx scram due to a loss of Feedwater. The EOI's are being executed. Due to a partial loss of drywell cooling, the Drywell Temperature reached 172 deg. F before being reported to the SRO. The appropriate actions are to enter EOI-2 and do which ONE (1) of the following?

A. initiate dywell spray

B. initiate all available drywell cooling

C. vent dywell irrespective of offsite dose

D. start all available Standby Gas Treatment Trains

B
EOI-2
Answer: B

18. 295016A206 001
Both Unit 2 and Unit 3 Control Rooms have been abandoned, both units are preparing for Shutdown Cooling. Which ONE (1) of the following describes the method that will accomplish this?

A. One unit aligns to RHR Loop I and uses RHR Pump A, The other unit aligns to RHR Loop II and uses RHR Pump D.

B. One unit aligns to RHR Loop I , one unit uses RHR Pump C, the other unit aligns to RHR Loop II and uses RHR Pump D.

C. Both units align RHR Loop I , one unit uses RHR Pump A and the other Unit uses RHR Pump C.

D. Both units align RHR Loop II , one unit uses RHR Pump B and the other Unit uses RHR Pump D.

C
Unit 2 and Unit 3 both align RHR Loop I for Shutdown Cooling. If both Unit 2 and Unit 3 Control Rooms have been abandoned, coordinate the initiation of Shutdown Cooling such that one unit uses RHR Pump A and the other Unit uses RHR Pump C. This will allow minimum flow protection to be maintained for the RHRSW Pumps and prevent flow adjustments on one Unit from affecting the opposing Units Cooldown rate.

Answer: C

19. 295026A201 001
Unit 2 has experienced a Rx Scram due to a loss of Feedwater. The EOI's are being executed. Due to a partial loss of drywell cooling, the Drywell Temperature reached 172 F before being reported to the SRO. The appropriate actions are to enter EOI-2 and do which ONE (1) of the following?

A. Initiate dywell spray.

B. Initiate all available drywell cooling.

C. Initiate actions to vent dywell irrespective of offsite dose.

D. Initiate all available Standby Gas Treatment Trains.

A
EOI-2

Answer: A

20. 295021 GEN 2.2.6 001
Unit 2 is in being shut down. Initially, both ADHR Trains A and B were placed in service approximately 72 hours after unit shutdown and remain in service. The primary coolant pump low differential pressure trip is faulty and I & C have requested a procedure change to remove the trip. Which ONE (1) of the following describes under what condition this procedure change could be made?

A. This change is an unreviewed safety question and cannot be made.

B. This change can be made as long as the pressure is monitored by using PI-72-229 minus PI-72-145.

C. This change can be made as long as the pressure is monitored by using PI-72-145 minus PI-72-229.

D. This change can be made as long as the DP indications are monitored either locally or in the MCR.

B
1. Significant Interlocks/Trips
a. Primary Coolant Pumps

--trip if a "low differential" pressure is sensed between the Secondary and Primary Loops (Secondary Loop must be >10 psid above Primary Loop).
No DP readout indication; Dp= PI-72-229 minus PI-72-145.
171209R4 Obj. V.C.3

Answer: B

21. 295023A205 001
The following plant conditions exist:

Unit 2 is operating at 75% power, Unit 3 in refueling
Unit 2 experienced 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 diesel generators start and tie to their respective buses.
Both loops of Unit 2 RHR are NOT available.

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

A. Unusual event.

B. Alert.

C. Site Area Emergency.

D. General Emergency.

B
BSEP BANK LOICLSLP301A*010001

Answer: B

22. 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 does which ONE (1) of the following?

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. Exceeds or approaches the Emergency Action Level (EAL) for a General Emergency.

C BFN reviewer verify D is incorrect
BSEP BANK LOI-CLS-LP-300B*21A001
Answer: C

23. 295018A204 001
An actuation of 480V load shed logic resulted in RBCCW pumps 2A and 2B tripping. The operator immediately cleared the breaker disagreements.

Which ONE (1) of the following describe how the RBCCW pumps respond?

A. RBCCW pump 2B will automatically start 43 seconds after power is restored.

B. If RBCCW pump 2A fails to start 40 seconds after power is restored, RBCCW pump 2B will automatically start 3 seconds later.

C. RBCCW pump 2A will automatically restart 40 seconds after power is restored.

D. Neither RBCCW pump will automatically restart.

D
OPL171.047 006
Old TEGRS Number (Deleted Bank) 10337 OPL171.047
Answer: D

24. 295007A202 001
Unit 2 experienced a failure to Scram from a turbine trip at 98% power. The operator successfully initiated a manual scram approximately 4 seconds following the turbine trip. Post trip analysis revealed the following data for the event:

Peak Reactor Power: 116%
Peak Reactor Pressure: 1205 psig
Minimum Vessel Level: -104 inches (LI 358A and B)
Most limiting MCPR: 1.08

Which ONE (1) of the following states which Safety Limit (SL) was violated?

A. SL 2.1.1.2 ONLY.

B. SL 2.1.1.3 ONLY.

C. SL 2.1.2 ONLY.

D. Both SL 2.1.1.3 and 2.1.2.

A
MCPR is below 1.10 for the given conditions.
SL 2.1.1.2 S000AD27

Answer: A

25. 295030A201 001

The Pressure Suppression Pressure Curve (#6) indicates the safe region ends any time that suppression pool level drops below 11.5 feet.

Which ONE (1) of the following is the reason that a level less than 11.5 feet is considered unsafe by this curve?

A. Chugging will occur in the downcomers during a blowdown.

B. Any energy from the D/W will be released directly to the torus airspace.

C. The HPCI exhaust line is uncovered.

D. Vortex limits for low pressure ECCS pumps become a concern.

B
BANK
Answer:

26. 295027 GEN 2.4.11 001

Unit 2 has entered 2-EOI-2 Primary Containment Control. Drywell sprays were initiated to provided adequate core cooling. Which ONE (1) of the following describes a situation where an RHR pump can be diverted from core cooling to spray the drywell?

A. RPV WATER LEVEL: -212 inches, post accident flooding range.
RHR SYS I: One pump operable, 7000 gpm.
RHR SYS II: INOPERABLE.
CS SYS I: Two pumps, 6300 gpm.
CS SYS II: INOPERABLE.

B. RPV WATER LEVEL: -164 inches, post accident flooding range.
RHR SYS I: Both pump , 14000 gpm.
RHR SYS II: INOPERABLE.
CS SYS I: One pump, 2400 gpm.
CS SYS II: One pump, 2000 gpm.

C. RPV WATER LEVEL: -201 inches, post accident flooding range.
RHR SYS I: Both pump , 14000 gpm.
RHR SYS II: INOPERABLE.
CS SYS I: INOPERABLE.
CS SYS II: One pump, 3125 gpm.

D. RPV WATER LEVEL: -154 inches, post accident flooding range.
RHR SYS I: INOPERABLE.
RHR SYS II: One pump operable, 8500 gpm.
CS SYS I: INOPERABLE.
CS SYS II: INOPERABLE.

A BFN reviewer verify that this is done to provide adequate core cooling

BFN NRC exam 12/90 EOI program manual, section 0-I-C page 17 (definition of adequate Core Cooling)

OPL171.203 045
Answer: A