

QUESTION # 76

The following plant conditions exist:

- Reactor has tripped on overtemperature differential temperature (OTΔT).
- The crew has transitioned to EMG ES-02, REACTOR TRIP RESPONSE from EMG E-0 REACTOR TRIP OR SAFETY INJECTION.
- All post trip plant conditions are normal except as indicated below.

Which of the following VALID annunciator conditions would warrant manual initiation of Safety Injection and transition back to EMG E-0?

(Assume the annunciator remains lit during the performance of the procedure)

- A. 00-088A, PZR PRESS SI RX TRIP
- B. 00-087C, PZR PRESS LO RX TRIP
- C. 00-059C, CTMT RAD HI
- D. 00-032C, PZR LO LEV DEV

## QUESTION # 77

The following conditions exist:

- Small break LOCA is in progress.
- Both CCPs are unavailable
- Procedure EMG E-1, LOSS OF REACTOR OR SECONDARY COOLANT is in use.
- One SI pump is running. The other SI pump is OOS.
- RCS pressure is at 1350 psig
- RCS Subcooling is 30 °F
- Operator controlled cooldown is not in progress.

The running SI pump trips, what actions should be taken regarding the RCPs?

- A. Leave all RCPs running if an operator controlled plant cooldown is about to commence.
- B. Leave all RCPs running since the only running SI pump tripped and no CCPs are available.
- C. Leave all RCPs running if RCS pressure has stabilized and is starting to increase.
- D. Stop all RCPs if RCS subcooling will decrease below limits.

QUESTION # 78

The following plant conditions exist:

- A reactor trip from full power has occurred and the Reactor trip breakers failed to open.
- Manual reactor trip signal was unsuccessful.
- The crew has entered EMG FR-S1, RESPONSE TO NUCLEAR POWER GENERATION / ATWT
- The rod drive MG sets have been de-energized by opening breakers PG HIS-16 and PG HIS-18.

How will the Reactor trip be verified?

- A. Alarm window 00-088F, MANUAL RX TRIP.
- B. Gamma Metrics show flux in Intermediate range.
- C. All rod bottom lights are lit.
- D. An Emergency Boration is in progress.

QUESTION # 79

A large Steam Generator Tube Rupture has occurred on "A" S/G. The crew has transitioned through the EMG network and is in EMG E-3, STEAM GENERATOR TUBE RUPTURE, with the ruptured S/G indicating 99% Narrow Range level. The "A" S/G Atmospheric Relief Valve (ARV) begins opening.

As Control Room Supervisor you would ensure "A" S/G ARV controller is in:

- A. MANUAL and closed.
- B. MANUAL and full open.
- C. AUTO and increase setpoint to 1185 psig.
- D. AUTO and setpoint is at 1125 psig.

QUESTION # 80

A Loss of Coolant Accident (LOCA) with a Loss of off-site power occurred causing a reactor trip and loss of power to all Reactor Coolant Pumps (RCPs). All equipment actuated as expected.

Power has now been restored to a 13.8 KV (PA) bus and the crew is preparing to start a RCP.

Why is it required to RESET Safety Injection prior to starting an RCP?

- A. Allows RCP seal water isolation valves to be opened.
- B. Allows restoration of the RCP auxiliaries that were load shed.
- C. Prevents an overload condition on Startup Transformer, XMR01.
- D. Prevents a degraded voltage condition on the 4.16 KV (NB) bus.

QUESTION # 81

The plant is at 100% with the Pressurizer level and pressure selected to the following positions:

- PZR LEV CTRL SEL, BB LS-459D, selected to L459/L460
- PZR PRESS CTRL SEL, BB PS-455F, selected to P455/P456

An event occurs and the control room staff notes the following indications:

- Charging pump suction has swapped to the RWST.
- Letdown flow remains stable for current plant conditions.
- Annunciator 00-076A, SSPS B GENERAL WARNING is in alarm.
- All S/G levels are stable for current plant conditions.

Which power supply failed to cause these conditions?

- A. 125 VDC Bus NK02
- B. 120 VAC Instrument Bus NN02
- C. 120 VAC Instrument Bus NN04
- D. 120 VAC Instrument Bus PN02

QUESTION # 82

Given the following plant conditions:

- A Safety Injection has occurred.
- EMG E-0, REACTOR TRIP OR SAFETY INJECTION is in progress.
- CTMT Radiation Alarms are clear.
- PRT Alarms are clear.
- CTMT Sump Alarms are clear.
- SD RE-10, Aux Bldg Radiation Monitor is in alarm.
- Annunciator 00-096A, RHR RM SUMP A/B LEV HI is in alarm.
- RCS Pressure is 1800 psig and slowly decreasing.
- Subcooling is 85 degrees.
- PZR Level is 25% and slowly decreasing.

Based on the above indications, what mitigation path will be used?

- A. EMG C-12, LOCA OUTSIDE CONTAINMENT
- B. EMG E-1, LOSS OF REACTOR OR SECONDARY COOLANT
- C. EMG ES-03, SI TERMINATION
- D. Continue in EMG E-0, and refer to OFN BB-007, RCS LEAKAGE HIGH

QUESTION # 83

The following plant conditions exist:

- Unit is in Mode 6.
- Emergency boration has been started due to a low boron concentration in the Refueling Pool.
- Boration flow has been verified.

Which of the following conditions must be met in order to terminate Emergency Boration?

- A. Start up rate must be decreasing.
- B. Shutdown margin must be verified to be greater than  $1.3\% \Delta K/K$ .
- C.  $K_{eff}$  must be verified to be less than 0.99.
- D. RCS boron concentration must be greater than 2300 ppm.



QUESTION # 84

The unit is stable at 100% power when you receive alarm 00-032C, PZR LO LVL DEV.  
The following indications exist:

- LI-459A 58%
- LI-460A 59%
- LI-461A 51%

Based on these above indications, what is the cause for this alarm?

- A. The non-controlling PZR level channel is failing LOW.
- B. The controlling PZR level channel is failing LOW.
- C. Charging Flow Control Valve, BG FCV-121 is failing OPEN.
- D. Charging Flow Control Valve, BG FCV-121 is failing CLOSED.

QUESTION # 85

The plant is operating at 80% power when a failure of the condenser boot seal causes a loss of vacuum and subsequent turbine trip.

What is the basis for the reactor trip and which signal directly causes the reactor to trip?

- A. Anticipation of an excessive RCS cooldown because of a main generator output breaker open signal.
- B. Anticipation of an excessive RCS cooldown because of a 2 out of 4 Turbine Stop Valves closed signal.
- C. Anticipation of a loss of RCS heat removal because of a 2 out of 3 EHC fluid oil pressure low signal.
- D. Anticipation of a loss of RCS heat removal because of a main condenser vacuum low signal.

QUESTION # 86

A rapid plant shutdown was required due to the indication of a loose part in the Reactor Coolant system.

The plant is currently in Mode 3 with RCS temperature at 525 °F and the operators are cooling down to enable Steam Generator opening to find the loose part.

Chemistry has taken a sample and informed you that RCS Activity is currently reading 30  $\mu\text{Ci/gm}$  greater than the 100/ E-Bar value calculated earlier.

Which of the following describes the applicable Emergency Plan Classification required for the current plant conditions?

- A. Alert
- B. Notification of Unusual Event
- C. Not applicable, due to the plant in Mode 3
- D. Not applicable, due to reactor power less than 20%

QUESTION # 87

The following conditions exist:

A Large Break LOCA has occurred inside containment. An operator has been sent into the Aux Building Penetration room to close a valve on a system that is causing flooding in containment and manually isolate a valve that will prevent a massive offsite dose to the general population.

The operator injures himself such that his life is in jeopardy. Another operator has volunteered to extricate the individual from the area. This volunteer operator has a current year to date exposure of 3 REM.

How much dose can the Emergency Manager permit the volunteer operator to receive?

- A. 7 REM
- B. 10 REM
- C. 22 REM
- D. 25 REM

QUESTION # 88

Unit load is currently 650 Mwe.

“A” Reactor Coolant Pump (RCP) has the following conditions:

- |   |       |
|---|-------|
| • Motor Upper Radial Bearing                  | 190°F |
| • Motor Upper Thrust Bearing                  | 191°F |
| • Motor Lower Radial Bearing                  | 196°F |
| • Motor Lower Thrust Bearing                  | 192°F |
| • Motor Stator Winding Temperature            | 210°F |
| • Number 1 Seal and Bearing Water Temperature | 200°F |

The crew enters OFN BB-005, RCP MALFUNCTIONS.

What is the proper action for these conditions?

- A. Commence plant shutdown using OFN MA-038, RAPID PLANT SHUTDOWN, when less than 48% trip the “A” RCP.
- B. Trip reactor, enter EMG E-0, REACTOR TRIP OR SAFETY INJECTION, then trip “A” RCP while concurrently using OFN BB-005.
- C. Commence plant shutdown using OFN MA-038, RAPID PLANT SHUTDOWN, trip “A” RCP, and then continue the shutdown.
- D. Trip “A” RCP in accordance with OFN BB-005, then trip the reactor and enter EMG E-0, REACTOR TRIP OR SAFETY INJECTION.

## QUESTION #89

A rapid (5%/min.) power reduction from 100% to 60% was performed due to grid instabilities.

Power has been stable at 60% for seven hours.

Calculated 100/E-bar value is 250  $\mu\text{Ci/gm}$ .

Chemistry reports indications of higher higher RCS activity.

The results from the RCS chemistry samples, taken four hours after power was stabilized at 60%, are as follows:

- Dose equivalent I-131 (DEI) 97  $\mu\text{Ci/gm}$
- Gross coolant activity 45  $\mu\text{Ci/gm}$
- Mixed Bed Demineralizer - Cesium Decontamination Factor 15
- Mixed Bed Demineralizer - Iodine Decontamination Factor 18

Using OFN BB-006, HIGH REACTOR COOLANT ACTIVITY, what are the required actions?  
(Figure 3.4.16 of Tech Specs is provided)

- A. The DEI limit has been exceeded, shutdown the plant in accordance with Tech Specs.
- B. The 100/E-Bar gross activity Tech Spec. limit has been exceeded, shutdown the plant in accordance with Tech Specs.
- C. The 100/E-Bar gross activity limit has been exceeded, maximize cleanup flow as directed by Chemistry personnel.
- D. Mixed Bed Demineralizer Decontamination Factors are out of specification, shift Mixed Bed Demineralizers.

# QUESTION #90

I&C technicians are performing surveillance testing on the Main Steam line pressure transmitters and have inadvertently de-energized 2 of 3 transmitters on Main Steam line "C". The reactor tripped and the crew has entered EMG E-0, REACTOR TRIP OR SAFETY INJECTION. The first four steps of EMG E-0 have been completed and the following conditions are observed:

- RCS pressure is 2000 psig and trending up
- S/G pressures are 1000 psig and trending up
- Containment pressure is normal
- RCS subcooling is 70°F and increasing slowly
- Pressurizer level is 35% and trending up

What mitigation path should be followed?

- A. Shut the BIT inlet valves and transition to EMG ES-02, REACTOR TRIP RESPONSE, since Safety Injection is not required.
- B. Leave BIT inlet valves open and continue in EMG E-0 since a Safety Injection is required.
- C. Shut the BIT inlet valves and continue in EMG E-0 since a Safety Injection is not required.
- D. Shut the BIT inlet valves and transition to EMG ES-03, SI TERMINATION, since Safety Injection is not required.

QUESTION # 91

Who is responsible for approving a radioactive release if all conditions for the release are satisfactory?

- A. On shift Chemistry Technician
- B. Chemistry Supervisor
- C. Control Room Supervisor
- D. Shift Manager



QUESTION #92

It is required to operate the CTMT Mini Purge System to reduce pressure to a normal value.

Which of the following combinations of radiation monitors must be in operation and source checks completed prior to startup of this system.

- A. GT RT-22, CTMT purge exhaust high radiation AND GT RT-33, CTMT purge exhaust high radiation.
- B. GT RT-32, CTMT building high radiation AND GT RT-33, CTMT purge exhaust high radiation.
- C. GT RT-21A, Unit vent effluent radiation AND GT RT-22, CTMT purge exhaust high radiation.
- D. GT RT-32, CTMT building high radiation AND GT RT-21A Unit vent effluent radiation.

QUESTION # 93

Which of the following conditions must be met in order for the Condenser Air Discharge Radiation Monitor, GE RE-92, to be operable?

It must be able to:

- A. detect S/G leakrates of 30 gpd at existing RCS activity levels.
- B. alarm if the S/G leakrate increases by 5 gpd.
- C. detect a S/G leakrate of 1 gpm within 15 minutes of the leak initiation.
- D. isolate S/G blowdown upon receipt of a high radiation alarm.

QUESTION # 94

Given the following:

- The plant is at 100% power.
- NIS Power Range Channel N-43 experienced a failed power supply and has been removed from service for corrective maintenance.
- NIS Power Range Channel N-44 power indication has started oscillating between 80% and 100%. The STA confirms the same oscillation at the N-44 panel.

Which one of the following actions is required?

- A. Trip the reactor and enter EMG E-0, REACTOR TRIP OR SAFETY INJECTION.
- B. Bypass N-43 for up to 4 hours while troubleshooting N-44. If the channel cannot be repaired within 4 hours, Enter T.S. 3.0.3 and be in HOT STANDBY within 7 hours.
- C. Bypass N-44 for up to 4 hours while repairing N-43. If the channel cannot be repaired within 4 hours, Enter T.S. 3.0.3 and be in HOT STANDBY within 7 hours.
- D. Enter T.S. 3.0.3. Repair EITHER channel or be in HOT STANDBY within 7 hours.

QUESTION # 95

Under which of the following conditions would a Plant Announcement **NOT** be made?

- A. Declaration of a Notification of Unusual Event (NUE) due to a Chemical Spill located outside the Protected Area but upwind.
- B. Declaration of a Site Area Emergency (SAE) during inclement winter weather.
- C. Declaration of a Site Area Emergency (SAE) during a declared Security Emergency.
- D. Declaration of a Notification of Unusual Event (NUE) due to a Tech Spec required plant shutdown.

QUESTION # 96

The unit is currently at Mid-loop conditions with S/G Nozzle Dam installation in progress at the start of a refueling outage. Engineering has requested permission to start a Local Leak Rate Test (LLRT) on containment penetration P-32, Containment Sump Discharge.

The LLRT:

- A. may not be performed until the unit has exited Mid-loop conditions.
- B. may not be performed until the nozzle dams are installed.
- C. may be performed if an individual is assigned to isolate the penetration within 30 minutes.
- D. may be performed without additional monitoring since it is not a safety related system.

QUESTION # 97

Which ONE of the following describes why the bank overlap unit withdraws control rod banks sequentially?

- A. Provides input for control rod insertion limit alarms and control bank deviation alarms.
- B. Provides for reduced oscillation in the size and location of peak power production and an input for control bank deviation alarms.
- C. Provides for uniform rod worth and provides adequate Shutdown Margin.
- D. Provides for uniform rod worth and maintains acceptable peak power production during rod motion.

QUESTION # 98

You have been on loan to Callaway plant moving fuel in their refueling outage. You are called back to Wolf Creek because of an emergent situation. Callaway will send your dose record for the visit within a week. You are scheduled to perform a task with a projected total dose of 700 mr.

Can you perform this task?

- A. No, because your radworker quals are no longer valid.
- B. No, because the total dose you can receive is 500 mr.
- C. Yes, because it is allowed for emergent work.
- D. Yes, because the projected dose is less than 2000 mr.

QUESTION # 99

The unit is in Mode 4 and you are about to start a Containment purge prior to personnel entry into containment.

Which of the following requirements apply to this purge release?

- A. The release must be initiated within 12 hours of the sample time.
- B. The release must be initiated within 48 hours of the sample time.
- C. The release permit expires 48 hours after the release is started.
- D. The release permit expires 7 days after the release is started.



QUESTION # 100

Given the following conditions:

- Wolf Creek is at 100% power.
- Air in-leakage to the condenser has resulted in steadily degrading condenser vacuum.
- A load reduction is directed in order to maintain vacuum.
- With the unit at approximately 85% power, a manual reactor trip is ordered due to the inability to maintain vacuum.
- All systems function as designed.

Based solely on the information given, which of the following describes the notification requirements for this event?

- A. No notifications to any outside agencies are required for these conditions.
- B. The NRC must be notified within 4 hours due to manual actuation of the Reactor Protection System.
- C. System Operations – Topeka must be notified within 1 hour in order to ensure grid stability.
- D. The State / County must be notified within 15 minutes of the trip due to reaching an Emergency Plan classification for an Unusual Event.