

Turkey Point December 2000 Exam 50-251/2000-301

Initial Submittal SRO Written Exam

1. G2.4.39 001

Upon declaration of an emergency, in accordance with EPIP 20101, "Duties of the Emergency Coordinator," the Nuclear Plant Supervisor is designated to act as the initial Emergency Coordinator until the Technical Support Center is activated. If the NPS is unavailable, which one of the following is NOT authorized to act as the Emergency Coordinator prior to Technical Support Center activation?

Assume all positions listed have active licenses.

- A. Assistant Nuclear Plant Supervisor
- B. Nuclear Watch Engineer
- C. Reactor Control Operator
- D. Operations Supervisor

C

REF: EPIP-20101, page 7, 1/22/98

SOURCE: Modified version of EPIP q 32020010301/q7

Changed to a "not" question and removed reference to "primary alternative." NOTE - ANSWER ASSUMES OPS SUPV HAS ACTIVE SRO.

Answer: C

2. 059A2.02 001

Which one of the following is indicative of a feedwater heater tube leak?
Feedwater heater level high and:

- A. alternate drain valve closed and extraction non-return valve closed.
- B. alternate drain valve closed and extraction non-return valve open.
- C. alternate drain valve open and extraction non-return valve closed.
- D. alternate drain valve open and extraction non-return valve open.

C

3-ARP-097.CR D2/6, Step 2

Answer: C

3. G2.2.29 001

According to 3-OP-038.1, "Preparation for Refueling Activities," which one of the following activities must be directly supervised by a Senior Reactor Operator in the containment who has no other collateral duties?

- A. Lifting the reactor vessel head
- B. Reactor vessel irradiated specimen removal

- C. Control rod latching
- D. Reinstallation of the reactor vessel head

C

REF: 3-OP-038.1, 7/25/95, page 7, 4.4

SRO required for "core alterations." C included in the clarification of what is and is not a core alteration (it is).

Answer: C

4. 065AA2.05 001

According to the Immediate Actions of 0-ONOP-013, "Loss of Instrument Air", which one of the following plant conditions would require an immediate plant trip and entry into 3-EOP-E-0, "Reactor Trip or Safety Injection?"

Actual Instrument Air pressure on PI-3-1444 is less than:

- A. 95 psig and random failures of equipment and components occur.
- B. 75 psig and the Nitrogen Backup systems cannot be maintained to the Pressurizer PORVs and Unit 3 MSIVs.
- C. 65 psig and the available Instrument Air compressor(s) are unable to restore pressure.
- D. 60 psig and the Nitrogen Backup systems cannot be maintained to the Letdown Isolation valves, Feedwater Regulator valves and Feedwater Bypass valves.

C

0-ONOP-013 Loss of Instrument Air step 1 and 2 and Note before step 1

Answer: C

5. W/E08EA2.1 001

Which of the following procedures contain steps that may delay entry into 3-EOP-FR-P.1?

- A. 3-EOP-FR-C-2, "Response to Degraded Core Cooling."
- B. 3-EOP-ECA-2.1, "Uncontrolled Depressurization of All Steam Generators."
- C. 3-EOP-E-2, "Faulted Steam Generator Isolation."
- D. 3-EOP-ES 1.2, "Post LOCA Cooldown and Depressurization."

A

Reference 3-EOP-FR-P.1 2.0 Entry Conditions

Cautions or notes which delay entry into this procedure are located at E-3 step 19 and FR-C.2 step 13

Answer: A

6. 060AA2.06 001

A Waste Gas Decay Tank is being released using the normal gaseous waste discharge path. The discharge path is isolated by RCV-014 due to the loss of both Auxiliary Building exhaust fans. How does RCV-014 reopen to restore the discharge path?

- A. One Auxiliary Building exhaust fan must be restarted and the manual loader for RCV-014 must be run to zero to reset the valve. Then the valve can be reopened.
- B. Both Auxiliary Building exhaust fans must be restarted and the manual loader for RCV-014 must be run to zero to reset the valve. Then the valve can be reopened.
- C. One Auxiliary Building exhaust fan must be restarted and RCV-014 will automatically open.
- D. Both Auxiliary Building exhaust fans must be restarted and the Gaseous Waste Disposal System isolation must be reset and then RCV-014 will automatically open.

C.
SD 050/SYS. 061B Page 21

Answer: C

7. 028A2.02 001
A LOCA has occurred on Unit 3.

- containment Pressure is 3.5 psig
- containment hydrogen concentration is 2.5% in air

Which one of the following is the correct operator response?

- A. Vent containment to atmosphere using the Post Accident Containment Ventilation system.
- B. Connect a portable Hydrogen Recombiner using 3-ONOP-094.3 "Hydrogen Recombiner Acquisition, Installation, and Operation".
- C. Start a waste gas compressor with suction aligned to the Post Accident Containment Ventilation system and discharging to the in service waste gas decay tank until waste gas decay tank capacities have been reached.
- D. Start a waste gas compressor with suction aligned to Post Accident Containment Ventilation system and discharging to the plant vent.

B

SD028, Containment Post Accident Evaluation System, page 26
EOP-E-1, Step 27
E.O. 5 of LP

Answer: B

8. 059AG2.3.10 001

Unit 3 operators have initiated an RCS cooldown while responding to a faulted/ruptured Steam Generator per 3-EOP-ECA-3.2 "SGTR With Loss of Reactor Coolant-Saturated Recovery Desired."

Which one of the following identifies the reason for rapid cooldown and depressurization of the RCS?

A. Minimize leakage of reactor coolant and radiological releases from the ruptured Steam Generator.

B. Increase the reactor coolant subcooling margin to prevent delaying SI termination.

C. Minimize contamination of condenser tubing.

D. Maximize Safety Injection Flow to the RCS.

A Reference 3-EOP-ECA-3.2 Step 6, Basis

Answer: A

9. 076EG2.1.1 001

Nuclear Chemistry reports that in the past 24 hours, reactor coolant specific activity has increased from 65/E microcuries/gm to 75/E microcuries/gm. A second sample was taken and the results have been verified. Which one of the following describes your required actions?

A. Be in at least Hot Standby with average reactor coolant temperature less than 500°F within 6 hours.

B. Reduce power to maintain less than 90% of allowable TS 3.4.8 limits.

C. Increase RCS cleanup flow to 120 gpm by placing additional letdown orifices and charging pumps in service.

D. Notify NPS to consult 0-EPIP-20101, "Duties of Emergency Coordinator, for classification."

C.

3-ONOP-041.4 Excessive Reactor Coolant System Activity

A. Required only if RCS activity is over 100/E microcuries/gm

B. Required only if activity is above 90/E microcuries/gm

C. Correct answer - step 5.2.1

D. Only required if TS values were exceeded

Answer: C

10. 058AA2.02 001

Units 3 is in Mode 1 when Annunciator X1/1, DC LC 3A TROUBLE, alarms.

Which one of the following describes the consequences of a loss of Vital DC Bus 3A?

A. Unit 3 reactor will automatically trip.
Train 1 AFW is inoperable. Unit 3 Annunciators will lose power.

B. Unit 3 reactor will not automatically trip.
Train 2 AFW is inoperable.
Unit 3 Annunciators will maintain power.

C. Unit 3 reactor will not automatically trip.
Train 1 AFW is inoperable. Unit 3 Annunciators will maintain power.

D. Unit 3 reactor will automatically trip.
Train 2 AFW is inoperable. Unit 3 Annunciators will lose power.

A

REFERENCE: 3-ONOP-003.4, Section 3

Answer: A

11. G2.3.9 001

Which one of the following conditions would prevent the use of the Post Accident Containment Vent (PACV) system to purge the containment atmosphere to the in-service Gas Decay Tank (GDT), following a LOCA?

- A. Containment temperature is 120 degrees F.
- B. In-service GDT Oxygen concentration is 1%.
- C. Containment pressure is 15 psig.
- D. In-service GDT Hydrogen concentration is 3%.

C

Lesson plan 329 page 80, ES1.2, containment pressure limit is 10 psig

Answer: C

12. 064G2.1.33 001

The Lube Oil Sumps are full on all of the Unit 3 and Unit 4 EDGs. The lube oil in the EDG sumps was previously tested and proven to meet all specifications. You have just been informed by the Chemistry Lab that ALL of the remaining lube oil in the warehouse was sampled and found to not meet the minimum viscosity requirements for EDG sump pump oil. It must be returned to the supplier and a shipment of replacement oil will arrive in 5 days.

Which one of the following describes the current operability status of the EDGs per Technical Specifications?

- A. EDGs on Unit 3 are inoperable.
- B. EDGs on unit 4 are inoperable.
- C. EDGs on both unit 3 and 4 are inoperable.
- D. EDGs on both units are operable.

A

SD-137W97 Unit Difference

Unit 3 Needs an additional 120 gal lube oil per EDG readily available per Tech Specs

Unit 4 Lube Oil Sump is large enough for 7 days @ rated load without needing to add oil

Answer: A

13. 071G2.4.10 001

Which one of the following required/automatic actions and alarms will annunciate if the in service gas decay tank becomes pressurized to approximately 95 PSIG?

A. The control system will automatically open the inlet valve to the backup tank specified and the ôGAS DECAY TANK STANDBY SELECTOR SWITCH REQUIRES REPOSITIONINGö alarm located on the Waste-Boron Panel will annunciate.

B. The control system will automatically open the inlet valve to the backup tank specified and the ôRADWASTE BLDG PANEL C46 TROUBLEö alarm on panel X will annunciate.

C. The inlet valve to the backup tank must be manually opened and the ôGAS DECAY TANK STANDBY SELECTOR SWITCH REQUIRES REPOSITIONINGö alarm located on the Waste-Boron Panel will annunciate.

D. The inlet valve to the backup tank must be manually opened and the ôRADWASTE BLDG PANEL C46 TROUBLEö alarm on panel X will annunciate.

A

SD 050/SYS.061B Page 18; 3 ARP-097.CR P 589, 590

if the in service gas decay tank becomes pressurized to approximately 110 PSIG, the control system will automatically open the inlet valve to the backup tank specified and the ôGAS DECAY TANK STANDBY SELECTOR SWITCH REQUIRES REPOSITIONINGö located on the Waste-Boron Panel will annunciate.

Answer: A

14. GEN 2.2.17 002

Unit 4 is at 100% power with the following equipment out of service:

4A RHR pump

4B TPCW pump

4B Containment Spray pump

The Plan of the Day has scheduled removing the 4C Emergency Containment Cooler (ECC) from service for preventative maintenance.

Which of the following describes the correct operator action?

A. Do not remove the 4C ECC from service until the 4B TPCW pump is returned to service.

B. Do not remove the 4C ECC from service unless the maintenance will be completed within 72 hours.

C. Remove the 4C ECC from service only after PSA analysis has been satisfactorily performed.

D. Remove the 4C ECC from service for the preventative maintenance without waiting for PSA analysis.

C

ADM210, Attachment 3, Step 7.4

Answer: C

15. 061AA2.03 001

An Area Radiation Monitor System (ARMS) channel has just alarmed. The Unit RCO verified the alarm by checking the high alarm setpoint against Attachment 1 of 0-ONOP-066, High Radiation Monitoring System Alarm, had Health Physics survey the affected area, observed Process Radiation Monitors and other ARMS in the affected area, and then pressed the Alarm Acknowledge pushbutton. Why is the sequence of confirming the validity of an alarming channel and acknowledging the alarm important?

A. The ARMS channel Digital information is lost when the Acknowledge pushbutton is depressed resetting the ARMS channel.

B. Depressing the Acknowledge pushbutton will silence the local alarm before the validity of the Alarm can be assessed.

C. Acknowledging an alarming channel prior to checking the high alarm setpoint places the module in the Accident mode, resetting the alarm setpoint 2.5 times higher than the normal setpoint.

D. Health Physics will reset the local alarm after they survey the affected area then the RCO can depress the Acknowledge pushbutton to reset the Control Room alarm.

B.

SD068, page 42

Modified Exam Question 69021680621;

0-ONOP-066, Note Prior to Step 5.1 and 5.2.6

Answer: B

16. W/E16G2.4.45 001

Unit 3 is experiencing a LOCA. While performing step 2 of 3-EOP-E-1, Loss of Reactor or Secondary Coolant, the following annunciators are received:

- H 1/5 CHRMS HI RADIATION
- H 5/1 CNTMT HI-HI/HI PRESS

Parameters associated with these annunciators indicate the following:

- Containment pressure is 22 psi.
- Containment radiation level is 1.6E5 R/Hr.

As ANPS, which one of the following is required of you?

A. Direct a transition to FR-Z.1, Response to High Containment Pressure using adverse containment numbers.

B. Direct a transition to FR-Z.3, Response to High Containment Radiation Level using adverse containment numbers.

C. Direct a transition to FR-Z.1, Response to High Containment Pressure using non-adverse containment numbers.

D. Direct a transition to FR-Z.3, Response to High Containment Radiation Level using non-adverse containment numbers.

A

The fact that they are in EOP-E-1 indicates no other CSF issues.

Per 3-EOP-F0.5, containment pressure greater than 20 psi yields an orange path (mandatory entrance unless a valid red path exists).

Per 3-EOP-F0.5, containment rads greater than $1.3E4$ yields a yellow path (operator's choice if no valid orange or red paths exist).

Per 3-EOP-F0.5, containment rads greater than $1.3E5$ requires use of adverse numbers.

Answer:

17. 013A2.01 001

Which one of the following must occur before safety injection flow will occur during a LOCA?

The RCS pressure must be:

- A. below the developed head of the SI pumps minus the SI pump suction pressure.
- B. above the developed head of the SI pumps minus the SI pump suction pressure.
- C. below the sum of the developed head plus the SI pump suction pressure before.
- D. above the sum of the developed head plus the SI pump suction pressure before.

C

The four high head safety injection pumps take a suction on the two 335,000 gallon Refueling Water Storage Tanks (RWSTs) and deliver borated water (1950 PPM) to the RCS cold legs at approximately 600 GPM (300 GPM/pump for two pumps) under design conditions. The maximum developed head of the SI pumps is 1500 PSID, therefore the RCS pressure must be below the sum of the developed head plus the suction pressure before safety injection flow will occur. The Emergency Operating Procedures use 1600 PSIG as the point above which SI flow is not occurring. The coolant added prevents fuel and cladding temperatures from exceeding the CFR limits and inserts additional negative reactivity to augment the negative reactivity provided by the control rods (RCCAs) following a design basis accident (DBA).

Answer: C

18. GEN 2.4.40 001

You have entered 0-ADM-115, "Notification of Plant Events." Which of the following are correct regarding emergency notification or classification?

- A. This procedure, 0-ADM-115, shall not be used to report Emergency Classifications.
- B. All required notifications shall be made as soon as possible after the event investigation is complete.
- C. If contact cannot be made with an individual, then the alternate for that position must be notified, before the notification process can be continued.
- D. The Operations Supervisor may contact the NPS for clarification of specific event consequences before classifying the event. This should not interfere with the Operations Supervisor's expedient classification of an emergency and activation of the Emergency Plan.

A

Procedure 0-ADM-115 Notification of Plant Events section 5.0 PROCEDURE

C A U T I O N

Prior to initiating this procedure, the Emergency Action Levels in 0-EPIP-20101, Duties of the Emergency Coordinator, shall be reviewed. The Emergency Plan could be activated as a result of an off-normal event under 10 CFR 50.72.

NOTES

ò This procedure, 0-ADM-115, shall not be used to report Emergency Classifications. (correct)

ò All required notifications shall be made as soon as possible whether or not the event investigation is complete. (The investigation need not be complete)

ò If contact cannot be made with an individual, the notification process should be continued, reattempting contact after all notifications have been completed. (there is no mention of alternates)

ò The NPS may contact the Operations Supervisor for clarification of specific event consequences before classifying the event. This should not interfere with the expedient classification of an emergency and activation of the Emergency Plan. (Notificationis made by the NPS not the Operations Supervisor)

Answer: A

19. G2.1.34 001

Unit 3 is at 100% power when Steam Generator cation conductivity reaches 1.5 mmho/cm resulting in Action Level 2 conditions.

Which one of the following describes the required operator response?

- A. Increase S/G blowdown and reduce power to <30% within 8 hours.
 - B. Increase S/G blowdown and shutdown the unit within 4 hours.
 - C. Place the condensate polishing demineralizers in service and reduce power to <30% within 8 hours.
 - D. Place the condensate polishing demineralizers in service and commence a unit shutdown within 4 hours.
- a.

REFERENCE: 3-ONOP-071.1, Steps 23 - 27

a - misstatement of the definition of Action Level 1

b - misstatement of the definition of Action Level 1

c - correct

d - definition of Action Level 3

Answer: A

20. GEN 2.1.1 001

Which one of the following identifies circumstances that would require the use of Peer Checks?

- A. Placing safeguards equipment in pulltolock while performing ECA0.0, "Loss of All AC Power."
- B. Opening MOV-350, Emergency Borate valve, while performing FRS.1, "Response to Nuclear Power Generation/ATWS."
- C. Placing PAHMs in service while performing E-0, "Reactor Trip or Safety Injection."

D. Stopping running HHSI pumps while performing ES 1.1, "SI Termination."

D

0ADM200, step 5.6.4.2

Answer: D

21. 027A2.01 001

The emergency containment filtering system is in service to reduce iodine concentration in the containment atmosphere following an accident. Low flow has been sensed by the flow switches installed at the fan discharge of one of the running fans. An ECF Fan, that was in service for ten minutes just tripped. One ECF spray valve white status light is dim and one is bright. Both the red ECF spray valves and green status lights are illuminated.

Which one of the following identifies a condition of the ECF spray valves that could result in the above indications?

- A. Both valves are fully closed.
- B. Both valves are partially open.
- C. One valve is fully closed, one is less than fully open
- D. One valve is fully open, one is less than fully open

D

SD 025/SYS 068 page 29

If the running ECF Fan trips and it has been running for at least five minutes, the solenoid valves will open upon sensing a low flow condition by the Heated Junction Thermocouples. Each valve, when it reaches the full open position, will cause its respective white status light to glow bright (vs. dim). The pair of solenoid valves share a set of green and red position indicating lights. Either valve full open will cause the red light to be lit. Both valves must be full open to make the green light go out. Once opened automatically the valves may be closed by taking the ECF fan control switch to stop (Assuming the valve control switch has not been positioned to open).

Answer: D

22. GEN 2.3.4 001

You are the NPS. A female SNPO is pregnant, but has not officially notified FPL of her condition. Which one of the following guidelines apply to this worker?

- A. This operator shall not be assigned to work in the RCA.
- B. This operator may work in the RCA but shall be limited to 450 mrem total dose.
- C. This operator may work in the RCA but shall not be allowed to enter HI RAD areas.
- D. The same dose guidelines shall be applied equally to this operator as apply to other SNPOs.

D

0-ADM-600 Radiation Protection Manual Page 34

5.6.2 Radiation Work Permit Use Requirements

5.7.1 Occupational Dose Limits and Guidelines - The occupational regulatory dose limits and FPL dose guidelines are summarized in Attachment 1. These dose guidelines and limits shall be applied equally to male and non-declared pregnant female workers. Additional requirements and explanations on how these guidelines should be used and applied are given below:

1. A person with incomplete current year exposure records may be issued personnel dosimetry and allowed access to the Radiation Controlled Area. That person shall not be allowed to exceed 450 mrem annual site dose until his/her current year exposure record has been completed.
2. Prior to allowing a person to exceed 450 mrem annual site dose, the person's current year dose shall be recorded and documented on NRC Form 4, Cumulative Occupational Exposure History. An attempt shall be made to obtain the records of lifetime cumulative occupational radiation dose. Documentation of the attempt to obtain an individual's dose records shall be maintained on file.
3. Prior to performing a Planned Special Exposure (PSE), a written record of the person's lifetime radiation exposure shall be obtained and maintained on file.

Answer: D

23. GEN 2.1.2 001

You are the NPS. Unit 3 is in the source range and a dilution is in progress to adjust boron concentration for reactor startup. An RCO trainee is in the control room. Which one of the following can you authorize the trainee to do?

- A. Withdraw rods while observed by a licensed operator.
- B. Relieve the RCO of the responsibility for monitoring the dilution.
- C. Place a CVCS demineralizer in service which differs from the RCS concentration by 15%.
- D. Use an approved procedure to assist in bypassing the High Flux at Shutdown Alarm setpoint.

D

- A. no- dilution in progress
- B. They must be investigated immediately and not by trainee
- C. Must be within 50 ppm or 10%
- D. Correct answer

0-ADM-555 Reactivity Management

5.2 Specific Policies and Actions Governing Power Operations to Preclude Significant Reactivity Events

5.2.1 During power operations, the Operations Supervisor shall ensure the following policies and actions are implemented in accordance with applicable plant procedures:

1. Licensed operators shutdown the reactor when the safety of the reactor is in jeopardy or when any reactor protection setpoint has been exceeded and automatic action has not occurred.

2. Only licensed operators and authorized trainees manipulate the controls that directly affect the reactivity or power level of the reactor. Authorized trainees shall only manipulate the controls under the direct supervision of a licensed operator.
3. Licensed operators are present at the controls at all times during operation of the facility.
4. Control rod movement and other reactivity changes are accomplished only in accordance with approved procedures.
5. Reactivity Control Systems designed to provide alarms, rod stops or turbine runback functions, are not bypassed except when allowed by an approved procedure.
6. Unexplained or abnormal reactivity changes or neutron flux distributions are immediately investigated by the Nuclear Plant Supervisor (NPS), Shift Technical Advisor (STA) and Reactor Engineering.
7. The CVCS demineralizer used for purification or delithiation is verified, prior to placing in service, to be within 50 ppm or 10 percent of the RCS boron concentration unless authorized otherwise by the Nuclear Plant Supervisor.

Answer: D

24. 003AG2.1.32 001

A dropped rod at 100% power has caused the Quadrant Power Tilt Ratio (QPTR) to be 1.03.

Which one of the following describes the reason for allowing up to two hours before QPTR or reactor power must be reduced?

To allow time:

- A. to retrieve the dropped rod.
- B. to perform a calorimetric calculation.
- C. for the NPS to notify the NRC.
- D. for the NIS High flux trip setpoints to be reduced.

A

REFERENCE: Tech. Spec. 3.2.4 Basis

Answer: A

25. 004G2.4.34 001

Which one of the following describes the characteristics of valve HCV-121, Charging Flow to Regenerative Heat Exchanger?

HCV-121, is a fail:

- A. closed valve which has a local control switch at the valve.
- B. open valve which has a local control switch at the valve.
- C. closed valve which has a transfer switch on the Alternate Shutdown Panel.
- D. open valve which has a transfer switch on the Alternate Shutdown Panel.

D

5613-M-3047, Sheet 2 SD-013, Page 37

Analysis:

HCV-121 is a 3 inch, air to close, fail open, modulating globe valve. Has a remote/local selector on ASP.

CV-387 is a 3/4 inch, air to open, fail closed solenoid actuated globe valve. Has a remote/local selector on ASP.

CV-389 is a 3/4 inch, three way, air operated, solenoid actuated. This valve is operated from the VPA with a two position control switch.

CV-739 is a 3 inch, air to open, fail closed, solenoid actuated globe valve. This valve is operated from the VPB with a two position control switch.

CV-311 is a 2 inch, air to open, fail closed, solenoid actuated, globe valve. This valve is available from the ASP so that charging flow can be directed through the auxiliary spray line for forced RCS depressurization.

Red Haring: is a 3 inch, air to close, fail open, modulating globe valve. This valve is positioned to reduce excess letdown pressure consistent with No. 1 seal leakoff pressure.

V-311 2 inch, air to open, fail closed, solenoid actuated, globe valve. This valve is available from the ASP so that charging flow can be directed through the auxiliary spray line for forced RCS depressurization.

No such valve 3 inch, air to close, fail open, modulating globe valve. This valve is positioned to reduce excess letdown pressure consistent with No. 1 seal leakoff pressure.

Answer: D

26. 062A2.03 001

Operators placed the AS Vital Inverter in service to replace the 3A Inverter, but failed to position the Alternate Source Transfer switch, 3Y01B, to the Backup to Spare Inverter (AS) position.

The AS Inverter subsequently failed.

Which one of the following describes the consequences of these events and the required operator response? Vital AC Panel 3P07 will:

A. not transfer to the CVT and will be deenergized. Implement 3-ONOP-003.7, "Loss of 120V Vital Instrument Panel 3P07."

B. not transfer to the CVT and will remain energized. Implement 3-OP-003.3, "120V Vital Instrument AC System."

C. transfer to the CVT and will be deenergized. Implement 3-ONOP-003.7, "Loss of 120V Vital Instrument Panel 3P07."

D. transfer to the CVT and will remain energized. Implement 3-OP-003.3, "120V Vital Instrument AC System."

A

00P003.3

3ONOP003.7

5610TE1592, sheet 1

Answer: A

Parallel Operation of EDGs

System Description - Parallel Operation

Droop is a characteristic of the governor that results in a lowered engine speed as load is increased. The governor must see a reduction in speed to position the throttle valve further open. With no droop, the governor moves the throttle valve to whatever position is necessary to maintain setpoint speed. These characteristics result in speed/load relationships as described below.

1. Dead bus, no droop - The governor will hold speed constant as load is added to or taken off the bus within the capability of the unit. After wide open throttle, speed will decrease if more load is added.
2. Dead bus, with droop - The speed must drop for the governor to open and keep the throttle further open. As load is added the speed (frequency) will fall off, or "Droop". The operator returns the frequency to normal by operating the speed/load control switch.
3. Parallel operation, no droop - The system controls frequency. The governor will either drive the throttle (fuel rack) full open or closed in an attempt to obtain its setpoint frequency. Parallel operation with no droop would result in a very unstable operation and is not done.
4. Parallel operation, with droop - With the EDG tied to a large system the response is similar to that of the main unit, i.e., operation of the speed control switch will result in a load change and settling out at a higher/lower load with no noticeable change in system frequency. If the system frequency changes, then the EDG governor will respond as described in paragraph 2 above, Droop operation opening throttle valves as frequency decreases and closing valves as frequency increases. This results in stable operation when in parallel operation.

Answer: A

27. GEN 2.2.11 001

Which one of the following describes a situation in which the NPS would direct licensed personnel to record OTSC changes into affected procedures?

If the OTSC affects an:

- A. OP, the change shall be recorded in the Control Room procedure within 8 hours.
- B. ONOP, the change shall be recorded in the Control Room procedure within 8 hours.
- C. EOP, the change shall be recorded in the Control Room procedure within 24 hours.
- D. ARP, the change shall be recorded in the Control Room procedure within 24 hours.

B

0ADM102, step 5.2.13.8.b

Answer: B

28. 005AK3.05 001

Unit 3 was operating at 100% when a single control rod in control bank D drops into the core. The SRO directs that the dropped rod be recovered.

Which one of the following prevents the remaining rods in the control rod bank from being withdrawn while the dropped rod is being recovered?

- A. The rod stop bypass is used to block control rod bank D outward movement.
- B. The "lift coil disconnect" disconnect switches are opened on control bank D rods that did not drop.
- C. The rod drop bistable actuated when the rod dropped and will prevent outward rod motion by control bank D.
- D. The "lift coil disconnect" disconnect switch is opened on the dropped rod to electrically isolate it from control bank D.

B

3-ONOP-028.3, attachment 1 step 2

Answer: B

29. 029EK1.02 001

Which one of the following reactivity values is correct if Keff is equal to 0.95?

- A. +2.053
- B. -2.053
- C. +0.053
- D. -0.053

D

Reactivity = (Keff - 1)/Keff

Answer: D

30. 037AA2.3 001

Following an alarm on R-3-19, S/G blowdown liquid activity with the reactor at normal operating temperatures and pressures at power, which one of the following should an operator expect?

- A. DAM-1 S/G steamline monitor to decrease over time.
- B. DAM-1 S/G steamline monitor to increase over time.
- C. R-3-15, Air ejector radiation monitor to decrease over time.
- D. R-3-15, Air ejector and DAM-1 S/G steam line radiation monitor indications remain constant over time.

B

3-EOP-E-3

Answer: B

31. 055EK3.02 001

Unit 3 experienced a station blackout and operators have implemented 3-EOP-ECA-0.0, Loss of All AC Power. The 3A1 and 3A2 Battery chargers are inoperable.

Step 1 of Attachment 3, 125V DC Bus Shedding, must be performed within _____ to ensure the 3A vital battery will supply vital loads for a minimum of _____.

Which one of the following combinations accurately completes the above statement?

- A. 30 minutes, 2 hours
- B. 30 minutes, 4 hours
- C. 60 minutes, 2 hours
- D. 60 minutes, 4 hours

c

REFERENCE: 3-EOP-ECA-0.0, CAUTION before Step 24 Basis

Answer: C

32. 074EK1.05 001

Unit 3 has just been tripped from 100% power due to a stuck open pressurizer safety valve. The crew has just tripped the reactor coolant pumps due to loss of subcooling. Pressurizer level is 70%. How would RVLMS respond when saturation conditions are reached in the RCS?

- A. Decrease, then increase.
- B. Decrease rapidly.
- C. Increase, then decrease.
- D. Increase rapidly.

B

Answer: B

33. 059K1.04 001

Unit 3 is operating at 100% power when the controlling S/G pressure transmitter fails low on the 3A S/G.

Which one of the following describes the effect this will have on the indicated steam flow of the controlling channel and the initial 3A FW Control Valve, FCV-478, response?

- A. Indicated steam flow will decrease. The FCV will open.
- B. Indicated steam flow will decrease. The FCV will close.
- C. Indicated steam flow will increase. The FCV will open.
- D. Indicated steam flow will increase. The FCV will close.

B

Answer: B

34. 015/017AK2.10 001

Per 3-ONOP-041.1, "Reactor Coolant Pump Off-Normal," which one of the following requires stopping an RCP ?

- A. RCP horizontal motor vibrations equal 10 MILS
- B. RCP vertical shaft vibrations equal 10 MILS
- C. RCP stator winding temperature equals 225 degrees
- D. RCP pump bearing temperature equals 200 degrees

A

Reference foldout page for 3-ONOP-041.1

A limit is 5 MILS

B limit is 20 MILS

C Temperature limit is 248 degrees

D Temperature limit is 225 degrees.

Answer: A

35. 024AK2.03 001

Following an uncontrolled increase in the source range count rate while subcritical. Operators enter 3-ONOP-046.1, "Emergency Boration" and establish the following conditions:

C FI-3-110, Emergency Borate Flow, indicates 64 GPM.

C FI-3-122, Charging Line Flow, indicates 40 GPM.

Which one of the following describes the appropriate procedural actions to be taken per 3-ONOP-046.1?

A. Start an additional Boric Acid Pump and align valves as necessary to establish emergency boration flow.

B. Open CV-3-310B, Loop C Charging Isolation Valve, to increase emergency boration flow.

C. Start an additional Charging Pump and align valves as necessary to establish emergency boration flow.

D. Align Charging Pump Suction to the RWST.

C

Answer: C

36. W/E11EA2.2 001

While in EOP-ECA-1.1, "Loss of Emergency Coolant Recirculation" operators have successfully restored recirculation capability. What is the proper action at this point?

A. Continue with this procedure until the procedure transitions out to another procedure.

B. Suspend performance of EOP-ECA-1.1 and return to the procedure and step in effect.

C. Go to EOP-E-1, "Loss of Reactor or Secondary Coolant," Step 1.

D. Go to EOP-ES-1.3, "Transfer to Cold Leg Recirculation."

B

REF: EOP-ECA-1.1 Caution prior to Step 1.

SOURCE:EB#69023320304

Answer: B

37. G2.4.8 001

Which one of the following statements describes the application of NOTES and/or CAUTIONS found within the body of an ONOP (for example, prior to step 4 of a 20 step ONOP)?

A. CAUTIONS apply to the step which they precede and for the remainder of the procedure, unless otherwise stated.

B. CAUTIONS only apply to the step which they precede, unless otherwise stated.

C. NOTES apply to the step which they precede and for the remainder of the procedure, unless otherwise stated.

D. NOTES continue to apply after transitioning to another procedure, unless otherwise stated.

A

REF: ADM-211, step 5.5.4,

page 15, 8/23/95

SOURCE: TP Q 69023200128/Q242 (ADM-211 Bank)

Bank Q modified slightly to make it clear that answer "C" is not correct (procedure says that a note that precedes the first high-level step apply to the whole procedure).

Answer: A

38. 022K2.01 001

Unit 3 has experienced a simultaneous LOOP/LOCA.

Which one of the following describes the response of the Emergency Containment Cooler (ECC) Fan motors?

A. Two ECCs start immediately upon receipt of the SI signal.

B. Two ECCs start when sequenced on by the sequencers.

C. If the 3B EDG fails to start, ECCs 3A and 3B will be powered from the 3A EDG.

D. If the 3A EDG fails to start, ECCs 3B and 3C will be powered from the 3B EDG.

B

REFERENCE: Logic Sheet 5613-T-L1, Sheet 12

Answer: B

39. 061K6.01 001

"A" AFW pump is out of service. Operators have realigned the "C" AFW pump to train 1. Following a reactor trip and initiation of safety injection due to an unisolable fault on S/G B, conditions associated with AFW are:

- AFW pump C steam supply MOV failed to open
- AFW pump B discharge pressure = 10 psig
- AFW pump B RPM = 5900 RPM
- AFW flow to S/G A, B, & C = 0 gpm

Which one of the following is indicated?

- A. Steam binding of B AFW pump due to backleakage of steam through the discharge check valves.
- B. Air binding of B AFW pump due to inleakage of air through the mechanical seals.
- C. Inadequate NPSH for B AFW pump due to the suction valve failing shut on loss of air.
- D. Runout conditions on B AFW pump due to low pressure in B S/G.

A

REFERENCE

TURKEY PT: OSP 75.1, AFW Train 1 Operability Verification

NRC Exam Bank - T Pt 1991/09/30, , and facility

from Turkey Point bank - question 69021231001 What is correct value for unknown psig

Answer: A

40. 002A4.06 001

When transferring water from the SFP to the RWST, what is the flow limitation and what is the basis for this flow limitation?

- A. Flow is limited to 100 GPM because of the slow response of the RWST overflow instrumentation.
- B. Flow is limited to 100 GPM because it must pass through the demineralizer in the SFP purification loop.
- C. Flow must be greater than 200 GPM because of the Minimum Developed Head.
- D. Flow must be greater than 200 GPM because it must pass through the demineralizer in the SFP purification loop.

B

3/4-OP-033 P&L 4.10

System Description No. 041 Fuel Pool Cooling, Purification and Ventilation System also System Description No. 007 Reactor Coolant System/

Transferring Water from the SFP to the RWST

Water can be transferred from the SFP to the RWST via the SFP purification loop. Flow is limited to 100 GPM since it must pass through the demineralizer.

Pump specifications Flow, GPM 2300 Minimum Developed Head, ft H₂O 125

Answer: B

41. 005K5.09 001

Which one of the following describes why the discharge of the HHSI pumps is realigned 12 hours after a large break LOCA?

A. This is done to prevent the possibility of boron precipitation due to the concentrating effects experienced during a cold leg break. The HHSI pumps are then run for hot leg recirculation.

B. This is done to prevent the possibility of boron precipitation due to the concentrating effects experienced during a hot leg break. The HHSI pumps are then run for cold leg recirculation.

C. This is done to prevent the loss of HHSI pump NPSH. The HHSI pumps then take suction from the containment sump and are run for hot leg recirculation.

D. This is done to prevent the loss of HHSI pump NPSH. The HHSI pumps then take suction from the containment sump and are run for cold leg recirculation.

A

EOP E-1 step 32 and BD-EOP-E-1 page 50

During the recirculation phase of ECCS operation which would normally only occur after a large break LOCA, the preferred alignment is RHR pumps delivering flow from the recirculation sumps to the RCS with the SI pumps secured. If adequate RHR flow cannot be verified, then the higher head SI pumps are used with suction taken from the discharge of the RHR pumps. The RHR pumps will still be taking their suction from the containment recirculation sumps.

Twelve (12) hours after the event (large break LOCA), the discharge of the SI pumps is realigned to loops A and B hot legs. This is done to prevent the possibility of boron precipitation due to the concentrating effects experienced during a cold leg break. The SI pumps are then run for hot leg recirculation.

Answer: A

42. G2.1.9 001

Which one of the following defines the personnel who, under 0-ADM-200, "Conduct of Operations," have the authority to remove personnel from the control room?

Only the NPS and:

A. ANPS

B. ANPS, RCO

C. ANPS, RCO, NWE

D. ANPS, RCO, NWE, Shift Technical Advisor

C

REF: 0-ADM-200 step 5.6.18.8

Answer: C

43. 008A2.02 001

In accordance with 3-ONOP-030, "Component Cooling Water Malfunction," which one of the following IMMEDIATE ACTIONS must be performed if CCW surge tank level is decreasing and the CCW Surge Tank Makeup Valve, MOV-3-832, is fully open?

- A. Trip Reactor and stop all RCPs.
- B. Dispatch an operator to tie together the CCW headers.
- C. Operate the running charging pump at minimum speed.
- D. Dispatch an operator to split the CCW header.

A

REFERENCE

3-ONOP-030, Step 1 & 2 immediate actions

NRC Exam Bank - 1994/02/28 - added correct answer per revision 10/1/98

Answer: A

44. 011A4.01 001

With reactor power at 50% and the pressurizer level control transfer switch in Position III (LT 461/460), a failure causes the following plant events to occur in the given sequence (assume no operator actions are taken):

1. Charging flow reduced to minimum.
2. Pressurizer level decreases.
3. Letdown secured and Pressurizer heaters off.
4. Pressurizer level increases until high level trip.

Which one of the following failures occurred?

- A. Level transmitter 460 failed low.
- B. Level transmitter 460 failed high.
- C. Level transmitter 461 failed low.
- D. Level transmitter 461 failed high.

D

5610-T-D-15 Sht 1

Answer: D

45. 035K3.01 001

Which one of the following is indicative of an impending loss of natural circulation flow?

- A. RCS delta T at 57 degrees F and increasing
- B. RCS subcooling at 42 degrees F and increasing
- C. Source range detector counts decreasing

D. RCS cold leg temperature slowly decreasing

A

Surry exam 1999

B. Correct if subcooling was at 30 degree F or below

C. Correct if counts were increasing

D. Correct if steam generator pressures were not responding

Answer: A

46. 033AK3.01 001

A reactor startup is in progress with Source Range counts indicating $3.7 \text{ E}+4$ cps on N-31 and N-32. Intermediate Range Instrument N-35 indicates $3 \text{ E}-11$ and N-36 indicates $1 \text{ E}-11$. What actions should be performed and why?

A. Enter the ONOP for Intermediate Range Instrument malfunction, maintain power < P-6, N-35 is undercompensated.

B. Enter the ONOP for Intermediate Range Instrument malfunction, maintain power < P-6, N-36 is failed low.

C. Continue the startup, power is too low to determine if any Intermediate Range detector has failed.

D. Enter the ONOP for Intermediate Range Instrument malfunction, continue the startup, adequate protection and monitoring is available with one Intermediate Range detector.

B SD 004

Answer: B

47. W/E03EA2.1 001

The following conditions exist on Unit 3:

C Reactor trip and SI have automatically actuated.

C Operators are preparing to transition from EOP-E-1 "Loss of Reactor or Secondary Coolant."

C RCS pressure is stable at 700 psig.

C All S/G pressures are stable at 900 psig.

C RWST level is 310,000 gallons and decreasing slowly.

C Containment pressure peaked at 10 psig and is decreasing.

Which one of the following identifies the correct procedure to which operators will transition to?

A. ES-1.1 "SI Termination"

B. ES-1.2 "Post LOCA Cooldown and Depressurization"

C. ES-1.3 "Cold Leg Recirculation"

D. ES-1.4 "Hot Leg Recirculation"

B

REF: E-1 Step 19.b

Answer: B

48. 007AK2.03 001

Given the following plant conditions:

- The reactor tripped 45 seconds ago.
- Turbine stop valves are closed.
- Megawatt meter at zero output.
- Mid and East GCBs are closed.

Which one of the following states the condition of the generator and the correct operator response?

- A. Generator is acting as a load on the grid, depressurize steam lines and MSRs.
- B. Generator is motoring, depressurize steam lines and MSRs.
- C. Generator is motoring, actuate the Emergency Gen Bkr Trip Switch.
- D. Generator exciter has failed, locally open 3A & 3B MG set supply breakers.

C

REFERENCE

3-EOP-E-0 step 2.C RNO

1994/02/28 Turkey Point 3 & 4

Answer: C

49. W/E13G2.3.9 001

Which ONE of the following Hi radiation alarms will initiate a Containment Purge System isolation?

- A. ARMS R2 (Containment Area)
- B. SPING4 (Special Particulate and Iodine Noble Gas)
- C. PRMS R12 (Containment Air Radioactivity)
- D. PRMS R14 (Plant Vent Gas)

C

SD029, CONTAINMENT VENTILATION AND HEAT REMOVAL, page 23 LP 6902129,
CONTAINMENT VENTILATION AND HEAT REMOVAL, E.O. 5 ONOP11108.1, PROCESS
RADIATION MONITOR, Table 1

NRC Exam Bank - 1992/04/20

Answer: C

50. G2.3.2 001

Which one of the following situations would require prior review by the ALARA review board as detailed in 0-ADM-600, "Health Physics Manual?"

- A. 1 person replacing a valve gasket that involves an exposure of 2.5 rem total.
- B. 2 persons removing a piping spool that involves an exposure of 4.5 rem total.

C. 3 persons performing a surveillance test on an HVAC filter unit involving an exposure of 2.0 rem for each person.

D. 5 people performing preventive maintenance on a pump which involves an exposure of .75 rem for each person.

C

REF: ADM-600 Section 5.16.1.d

SOURCE: TP Bank Q 69020201201/Question 112. Per procedure, cumulative job exposure of 5 Rem requires ALARA review board

Answer: C

51. 054AK1.02 001

Which one of the following is the reason why AFW flow rate is procedurally restricted to less than 100 gpm when recovering a steam generator level if the level has fallen below 8% wide range indication?

A. Ensure SG pressure transient condition does not occur which could result in an uncontrolled release through a safety valve.

B. Ensure pressurizer level transient does not result in pressure transient that would actuate SI.

C. Minimize thermal stress conditions on steam generator components.

D. Minimize RCS cooldown rate which could result in an unacceptable positive reactivity addition.

C, EOP-FR-H.1, Caution Before Step 4 Basis

Answer: C

52. 032AG2.2.23 001

Given the following:

C Reactor startup in progress with the reactor critical.

C Intermediate Range Channels N35 and N36 power indicate 3E-11 and 5E-11 amps respectively.

Which one of the following describes the actions required if BOTH Source Range (SR) Instruments fail LOW in this situation?

A. Manually insert all control and shutdown rods, then open the reactor trip breakers.

B. Maintain current power level until at least one SR instrument is returned to service.

C. Manually trip the reactor.

D. Enter a 6 hour LCO then continue the startup.

A

Answer: A

53. 068K6.10 001

While operating in Mode 1, Annunciator H1/6 ,PRMS CHANNEL FAILURE alarms. On inspection, the fail light is found to be illuminated on PRMS channel 18, Waste Disposal System Liquid Effluent Monitor.

Which one of the following describes the correct operator response?

- A. Bypass the channel and direct chemistry to take periodic samples.
- B. Direct the SNPO to shut RCV-014 (gaseous release isolation valve).
- C. Stop liquid release if in progress.
- D. Refer to 0-OP-061.11, WDS Controlled Liquid Release to Circulating Water.

C

3-ARP-097.CR H 1/6

3-ONOP-067 Step 8 RNO

Answer: C

54. W/E09EA1.3 001

During the performance of 3-EOP-ES-0.2, "Natural Circulation Cooldown," while cooling down the RCS at a rate of 25 degrees F/hour, water inventory in the Condensate Storage Tanks is lost.

Which one of the following describes the appropriate procedural actions?

- A. Remain in ES-0.2, "Natural Circulation Cooldown," and maintain the same cooldown rate.
- B. Remain in ES-0.2, "Natural Circulation Cooldown," and stop the cooldown.
- C. Transition to ES-0.3, "Natural Circulation Cooldown With Steam Void in Vessel (With RVLMS,)" and increase the cooldown rate.
- D. Remain in ES-0.2, "Natural Circulation Cooldown," and increase the cooldown rate.

C

ES 0.2, basis for note prior to step 17

Answer: C

55. 078K3.01 001

The Instrument Air System controls and indications located at the Alternate Shutdown Panel (ASP) consist of air pressure indication and the _____.

Which one of the components below completes the above statement?

- A. Unit 3 & 4 air header cross connect isolation valve control switch.
- B. Containment Air Header Isolation Valve Normal/Isolate switch.

C. Diesel air compressor start pushbutton.

D. Electric air compressor start pushbutton.

B,

SD155, 10/8/93, Page 7 & LPEO 4.

NRC Exam Bank - T Pt 1994/02/28

Answer: B

56. 103A1.01 001

Operators are responding to a main steam line break inside containment and are attempting to secure the Containment Spray pumps (CSPs).

Which one of the following identifies the EOP-E-1 procedural criteria that must be satisfied to allow stopping the CSPs?

A. Containment pressure <14 psig OR Containment temperature <122 F

B. Containment pressure <14 psig AND Containment temperature <122 F

C. Containment pressure <20 psig OR Containment temperature <180 F

D. Containment pressure <20 psig AND Containment temperature <180 F

b.

REFERENCE: 3-EOP-E-1, Step 12

Answer: B

57. 034G2.4.48 001

Given the following:

C The unit is in Mode 6 with the core loading in progress.

C Power Range channel N42 is out of service for annual maintenance.

C The power supply for Power Range channel N41 power range channel fails.

Which one of the following describes the required action in this situation?

A. No actions are required.

B. Stop all fuel movement.

C. Evacuate containment.

D. Verify refueling cavity level is above 56'10".

B

Turkey Point, 3OP040.2, Tech Specs 3.9.3, ONOP59.5, 59.8.

1995/02/24 Turkey Point 3 & 4

Answer: B

58. 013K2.01 001

Which one of the following valves will remain open following a Phase A containment isolation actuation?

- A. MOV-381 RCP seal water return
- B. CV-855 Accumulator N2 supply
- C. MOV-730 RCP bearing water return
- D. CV-519A Primary water to containment isolation

C

Reference: SD 063/SYS.049, 063, P 85 , 3/4-OSP-203.1 Attachment 7

- a. MOV-381 RCP seal water return (Result of a phase "actuation)
- b. CV-855 Accumulator N2 supply (Result of a phase "actuation)
- d. CV-519A Primary water to containment isolation (Result of a phase "actuation)

Answer: C

59. 036AK2.02 001

Refueling operations are in progress on Unit 3. An irradiated fuel assembly is in the transfer cart in containment when the following symptoms occur:

- C Annunciator I 4/6, CNTMT SUMP HIGH LEVEL in alarm
- C Annunciator G 9/5, CNTMT SUMP HIGH LEVEL in alarm
- C Annunciator H 1/1, SPENT FUEL PIT LOW LEVEL in alarm
- C Containment Radiation Monitor R-3-12 increasing

Which one of the following is a required IMMEDIATE ACTION based on the above symptoms?

- A. Direct the refueling operator to close SFP Transfer Tube Gate Valve.
- B. Lay irradiated fuel assembly down but do not transfer to the spent fuel pool.
- C. Sound the containment Evacuation alarm.
- D. Lay irradiated fuel assembly down and transfer to the spent fuel pool.

C.

REFERENCE

3ONOP033.2, REFUELING CAVITY SEAL FAILURE, step 4.1,

NRC Exam Bank - QDATE 1992/04/20

Answer: C

60. G2.2.28 001

Which one of the following represents a means of inadvertent criticality prevention, as described in 0-ADM-035, "Limitations and Precautions for Handling Fuel Assemblies?"

- A. The minimum boron concentration while fuel is stored in the spent fuel pool is 1925 ppm.
- B. Burnup limits are placed on fuel located in Region I of the spent fuel pool.

C. Enrichment limits are placed on the fuel located in Region I of the spent fuel pool.

D. Fuel assembly enrichment shall not exceed 3.5 weight per cent of U-235 in the spent fuel pool storage racks.

C

REF: 0-ADM-035 pg 16. TS Bases 3/4.9.14

See 5.4.2 of procedure.

a. incorrect - 1950 req'd

b. incorrect - applies to Region II

c. correct

d. incorrect - 4.5 w/o applies to this

Answer: C

61. 009EG2.1.30 001

Unit 3 was at 100% steady state power when the following events occurred:

C Unit 3 suffered a small break LOCA and tripped from 100% power.

C Offsite power was lost coincident with the reactor trip but has NOT been restored.

C The operators are now at step 3 of 3-EOP-ES-1.2, "Post-LOCA Cooldown and Depressurization."

C Pressurizer level is now 25%.

Which one of the following describes the local actions required to enable the RCO to energize pressurizer backup group heaters?

A. To restore A and B group heaters, reset their respective lockout relays.

B. To restore A and B group heaters, take their respective keylock switches to emergency.

C. To restore the A group heaters take the respective keylock switch to emergency. To restore the B group heaters, reset the lockout relay.

D. To restore the A group heaters, reset the lockout relay. To restore the B group heaters take the respective keylock switch to emergency.

D

SOURCE: EB#69023290306

REF:3-EOP-ES-1.2 step 3

Answer: D

62. W/E04EA2.1 001

3-EOP-ECA 1.2, "LOCA Outside Containment" step 3, states:

"Check If Break Is Isolated."

What indications do you use to accomplish this and based on these indications, where do you transition?

A. If RCS temperature is increasing then go to 3-EOP-E-1, "Loss of Reactor or Secondary Coolant." If RCS temperature is decreasing then go to 3-EOP-ECA-1.1, "Loss of Emergency Coolant Recirculation."

B. If RCS temperature is increasing then go to 3-EOP-ECA-1.1, "Loss of Emergency Coolant Recirculation." If RCS temperature is decreasing then go to 3-EOP-E-1, "Loss of Reactor or Secondary Coolant."

C. If RCS pressure is increasing then go to 3-EOP-E-1, "Loss of Reactor or Secondary Coolant." If RCS pressure is decreasing then go to 3-EOP-ECA-1.1, "Loss of Emergency Coolant Recirculation."

D. If RCS pressure is increasing then go to 3-EOP-ECA-1.1, "Loss of Emergency Coolant Recirculation." If RCS pressure is decreasing then go to 3-EOP-E-1, "Loss of Reactor or Secondary Coolant."

C
ECA- 1.2, Step 3 . Page 6 of 6. If RCS pressure is increasing then go to 3-EOP-E-1, Loss of Reactor or Secondary Coolant. If RCS pressure is decreasing then go to 3-EOP-ECA-1.1, Loss of Emergency Coolant Recirculation.

Answer: C

63. G2.2.22 001

Given the following:

C The Unit is critical.

C Three reactor coolant loops are in operation.

Which one of the following sets of conditions represents a violation of a technical specification safety limit?

A. Power = 50%, Pressure = 1975 psig, Tavg = 605 F

B. Power = 80%, Pressure = 2250 psig, Tavg = 640 F

C. Power = 10%, Pressure = 2400 psig, Tavg = 655 F

D. Power = 90%, Pressure = 2000 psig, Tavg = 595 F

B

REF: TS 2.1.1 and Fig 2.1-1 (PROVIDE FIGURE WITH EXAM)

SOURCE: NEW (MSM)

Answer: B

64. 056AG2.4.21 001

Following a loss of offsite power, Tc is within 35 deg. F of Tsat for S/G pressure. This is a positive indication of which one of the following?

A. single phase flow in the RCS loops

B. two phase flow in the RCS loops

C. safety Injection has occurred

D. safety Injection has not occurred

A is positive indication of natural circulation flow, which is single phase flow, Modified from - T pt 1991/09/30

Modified from - T pt 1991/09/30

Answer: A

65. 026EA2.04 001

Which one of the following will result if a Charging Pump is operated at maximum speed without component cooling water?

- A. temperature of the coupling oil will exceed limits.
- B. temperature of the thrust bearing will exceed limits.
- C. charging pump will cavitate within 1 minute.
- D. temperature limits are expected to remain within specification limits indefinitely.

Procedure No. 3-ONOP-030 Component Cooling Water Malfunction

- A. This will occur at half speed
- B. This will not occur
- C. Pump will not get warm enough to cavitate

Answer: D

66. 057EK3.01 001

The plant is stable at 90 % power. Which one of the following is most likely to cause an entry into EOP-E-0 ?

- A. Loss of 3P06.
- B. Loss of 3P07.
- C. Loss of 3P08.
- D. Loss of 3P09.

D

correct answer - S/G High Level if Turbine Runback is not terminated.

Ref 6902260

Answer: D

67. 022AA1.01 001

The operating charging pump fails resulting in a loss of normal charging while operating at 100% power.

Which one of the following is the required action after unsuccessful attempts to start a charging pump?

- A. Fully open CV-3-310B, alternate charging valve.
- B. Close CV-3-204, letdown isolation valve.

C. Close CV-3-200 A/B/C, letdown orifice isolation valve(s).

D. Fully open HCV-3-121, charging flow to Regenerative heat exchanger.

C

3ONOP047.1, Loss of Charging Flow in Modes 1 through 4, step 4.2

E.O. 1 of LP

NRC Exam Bank from the 1996/06/17 Turkey Point 3 & 4

Answer: C

68. 086A3.01 001

A fire hydrant on the main fire header is opened, resulting in decreasing fire main pressure.

As pressure continues to drop, which one of the following identifies the correct automatic starting order of fire system pumps?

The first fire pump to autostart would be the:

A. Diesel Fire pump followed by the Electric Fire pump.

B. Diesel Fire pump followed by the Jockey Fire pump.

C. Electric Fire pump followed by the Diesel Fire pump.

D. Electric Fire pump followed by the Jockey Fire pump.

c.

REFERENCE: SD-153, Page 58

From

Jockey Pumps (234A & B)

These pumps take suction from the Raw Water Tanks. Their suction lines are tied together with the line from RWT II normally isolated. Therefore, RWT I normally provides suction for both jockey pumps. Their common discharge is connected to the fire main to maintain about 140 PSIG on the system. The recirculation line common to both pumps connects to both raw water tanks but is usually valved to RWT I.

Electric Fire Pump (P39)

The pump is rated at 2000 GPM, with shutoff head of 140 PSIG. Normal suction is from Raw Water Tank I.

Answer: C

69. 038EA1.27 001

In Step 3 of 3-EOP-E-3, "Steam Generator Tube Rupture," operators are directed to Check ruptured S/G steam dump to atmosphere û CLOSED.

Which one of the following describes how the RCO can verify the Steam Dump to Atmosphere (SDTA) valve is closed?

A. The SDTA controller demand position needle is at 0%.
The ERDADS mimic displays a filled in valve.

B. The SDTA controller demand position needle is at 0%.
The ERDADS mimic displays an unfilled valve.

C. The SDTA controller demand position needle is at 100%.
The ERDADS mimic displays a filled in valve.

D. The SDTA controller demand position needle is at 100%.
The ERDADS mimic displays an unfilled valve.

B.
3-EOP-E-3, "Steam Generator Tube Rupture" Step 3.
SD 105 Steam Dump System.

TURKEY POINT REVIEWER - I COULD NOT COPY THE BLACK AND WHITE TRIANGLES,
PLEASE VERIFY THE THE WORDING IS CORRECT

Answer: A

70. 071G2.4.46 001

The following conditions exist:

- A Gas Decay Tank release is in progress.
- PRMS R-15, Condenser Air Ejector monitor, has alarmed.
- PRMS R-14, Plant Vent monitor, has alarmed.

Which one of the following describes a correct operator response?

- A. Enter ONOP-041.3, "Excessive RCS Leakage."
- B. Enter ONOP-071.1, "Secondary Chemistry Deviation from Limits."
- C. Verify automatic isolation of the Gas Decay Tank release has occurred.
- D. Verify automatic isolation of steam generator blowdown has occurred.

C

REFERENCE: 3-ONOP-067, Foldout Page Item 2.b
Answer: C

71. 063K3.02 001

Which one of the following identifies the AFW steam supply valve(s) that may be deenergized
in the event of a loss of vital DC power?

A. MOV-1403, 3A Stm. Supply to Aux. Feedwater Pumps
MOV-1404, 3B Stm. Supply to Aux. Feedwater Pumps

B. MOV-1403, 3A Stm. Supply to Aux. Feedwater Pumps
MOV-1405, 3C Stm. Supply to Aux. Feedwater Pumps

C. MOV-1404, 3B Stm. Supply to Aux. Feedwater Pumps
MOV-1405, 3C Stm. Supply to Aux. Feedwater Pumps

D. MOV-1403, 3A Stm. Supply to Aux. Feedwater Pumps

MOV-1404, 3B Stm. Supply to Aux. Feedwater Pumps
Feedwater Pumps
b.

MOV-1405, 3C Stm. Supply to Aux.

REFERENCE: 3-OP-075, Attachment 7
Answer: B

72. 039A1.09 001

The DAM1 steam line radiation monitor has alarmed. Which one of the following describes how DAM1 can be used to determine which S/G is the source of the radiation?

A. Sample line isolation valves must be operated locally. DAM1 readings can be monitored locally and on ERDADS.

B. Sample line isolation valves must be operated locally. DAM1 readings can be monitored locally and in the Primary Sample Room.

C. Sample line isolation valves may be operated from the Control Room. DAM1 readings can be monitored locally and on ERDADS.

D. Sample line isolation valves may be operated from the Control Room. DAM1 readings can be monitored locally and in the Primary Sample Room.

D

5613-M-3072, Sheet 1. 5613-M-3032, Sheet 2

The DAM/1 has been installed as a common steam line radiation monitor. Sample lines from all six steam generators run simultaneously through the detector. Flow indicators are provided on each sample line so flow can be verified. To identify a ruptured steam generator, manual isolation valves must be operated and the display checked. Since there is a continuous sample flow, delay time will be negligible.

The DAM/1 Unit is identical in function and operation to the SPING/4.

Answer: A

73. 003AK3.08 001

A control rod has dropped while at 100% power.

Which one of the following describes the control rod's status and the basis for this determination?

The dropped control rod is:

A. inoperable. To limit the effects of rod misalignment on accident analysis.

B. inoperable. To ensure minimum shutdown margin is maintained.

C. operable. Accident analysis is not affected by rod misalignment.

D. operable. Shutdown margin requirements are not affected by rod misalignment.

ANSWER:

A

REFERENCE: 3-ONOP-028.3, Step 5. Tech. Spec. 3.1.3.1 Basis

Answer: A

74. 055K3.01 001

Unit 4 is in Mode 1 when CV-4-3700, Main Steam Supply valve to SJAE, fails closed.

Which one of the following combinations of megawatt load and condenser vacuum will require the operators to manually trip the reactor and turbine?

- A. 300 MWe, 23öHg
- B. 600 MWe, 23öHg
- C. 300 MWe, 25öHg
- D. 600 MWe, 25öHg

a.

REFERENCE: 3-ONOP-014, Step 5.4 & Enclosure 1

Answer: A

75. 010K5.01 001

With Pressurizer pressure initially at 2235 psig, a PORV opened and remained open.

Which one of the following identifies the expected PORV tailpipe temperature as seen on TI-3-463 (VPA) when PRT pressure equals 50 psig?

- A. 212 F
- B. 281 F
- C. 298 F
- D. 315 F

ANSWER:

c

REFERENCE: Steam Tables

Answer: C

76. 067EK1.02 001

In the event of a fire, which one of the following completes the below requirement regarding the Fire Brigade Program per 0-ADM-016.2, "Fire Brigade Program" ?

IF a qualified fire brigade operator is available, THEN a Fire Brigade member shall turn over his fire brigade duties to the qualified fire brigade operator prior to:

- A. going to the switchyard.
- B. going to the Nuclear Admin Building.
- C. entering the switchgear room.
- D. using a self contained breathing apparatus.

0-ADM-016.2 Fire Brigade Program 9/23/99

step 3.7.10 IF a non-fire brigade (qualified) operator is available, THEN a Fire Brigade member shall turn over his fire brigade duties to the non-fire brigade (qualified) operator prior to entering containment or going to the switchyard.

Answer: A

77. 072A2.02 001

The detector for Component Cooling Water Monitor, channel R-17A has failed high and is now alarming. Which one of the following are the consequences of this failure?

- A. RCV-3-609, CCW Head Tank Vent Valve, closes.
- B. There is a local alarm only, and there are no automatic actions associated with this channel alarm.
- C. The MOV for sample from R-17A in the Primary Sample Room closes, and the MOVs downstream of R-17B must be used to throttle and balanced flow to obtain a sample to confirm the detector failure.
- D. RCV-3-014 cannot be opened until the alarm has been reset and RCV-3-014 hand loader setting has been decreased to zero.

A
SD-068W97

A. Correct answer - this is from SD-068W97 page 27

B - There are no automatic actions associated with this alarm for R-15

C. - This is required for a failure of R-19

D. - When RCV014 is tripped on high radiation, it can not be opened from the waste/ boron panel until the alarm has been reset and RCV014 hand loader setting has been decreased to zero.

Answer: A

78. 015K5.14 001

Which one of the following is correct concerning excore nuclear instrumentation?
The excore detectors are encased in:

- A. lead which slows down the leaking fast neutrons and brings them into thermal equilibrium with the target boron.
- B. polyethylene which slows down the leaking fast neutrons which causes them to have a higher potential energy than the target helium.
- C. polyethylene which slows down the leaking fast neutrons and brings them into thermal equilibrium with the target boron.
- D. lead which slows down the leaking fast neutrons and brings them into thermal equilibrium with the target helium.

C
SD-004W97

However, this reaction requires that the incident neutron be in thermal equilibrium with the target boron. Due to their physical location, the excore nuclear instruments will be able to detect only neutrons that leak from the core, most of which will be fast neutrons. Consequently, the excore detectors must be encased in polyethylene which slows down (moderates) the leaking fast neutrons and brings them into thermal equilibrium with the target boron.

Answer: C

79. 068A3.02 001

A large break LOCA has occurred on Unit 4.

The containment sump is full.

SI has been reset.

Which one of the following describes the effect on the containment sump pumps and the containment sump pump discharge valves when Phase A containment isolation is reset?

- A. The sump pumps will start and the discharge valves will open.
- B. The sump pumps will start and the discharge valves will remain closed.
- C. The sump pumps will remain off and the discharge valves will open.
- D. The sump pumps will remain off and the discharge valves will remain closed.

d
d.

REFERENCE: 5614-M-3061, Sheets 1 & 2
5614-E-25, Sheet 25D
5610-E-25, Sheet 76

Answer: D

80. 033K4.05 001

The design basis of the spent fuel storage racks is to maintain Keff _____ provided the pool is _____

- A. $K_{eff} < 1.0$, flooded with 1950 PPM borated water.
- B. $K_{eff} < 1.0$, flooded with unborated water.
- C. $K_{eff} < 0.95$, flooded with 1950 PPM borated water.
- D. $K_{eff} < 0.95$, flooded with unborated water.

B

Spent Fuel Storage Racks SD-041W97

The design of the spent fuel racks provides storage location for up to 1404 fuel assemblies. The storage rack consists of a rectangular array of modules, as shown on Figure 8 and 9. Region I modules are arrayed on a 10.6 inch center to center spacing. Region II modules have a 9 inch spacing. The restriction on Region I allows the, maximum enrichment loading for fuel assemblies to be 4.5 weight percent of U-235. For Region II the stored fuel is required to meet burnup requirements (1.6 w/o U-235) as listed in Table 3.17-1 of Tech. Specs. An encased boron carbide (Boraflex) lining surrounds each individual storage location.

Answer: B

81. W/E02EG2.4.12 001

Operators are performing 3-EOP-ES-1.1, "SI Termination." The following conditions exist:

- ⌈ Containment radiation levels are 1.5E3 R/hr.
- ⌈ Containment temperature is 160 F.
- ⌈ Pressurizer level is 33%.

Operators are unable to open CV-3-204, Letdown from Regen Heat Exchanger Isolation.

Which one of the following describes the correct operator response?

- A. Manually open the bypass around CV-3-204 and use one pressurizer PORV for subsequent RCS depressurization.
- B. Manually open the bypass around CV-3-204 and restore normal letdown flow when adverse containment conditions no longer exist.
- C. Establish excess letdown and continue attempts to establish normal letdown.
- D. Establish excess letdown and use auxiliary spray (CV-3-311) for subsequent RCS depressurization.

C

REFERENCE: 3-EOP-ES-1.1, Step 9 5613-M-3047, Sheet 1
Answer: C

82. 001G2.1.2 001

Unit 3 is at 90% power with all rods fully withdrawn when the unit RCO receives the following annunciators:

- C B 7/1 NIS RPI ROD DROP/ROD STOP
- C B 6/4 POWER RANGE CHANNEL DEVIATION
- C B 9/3 SHUTDOWN ROD OFF TOP/DEVIATION
- C B 2/2 POWER RANGE UPPER DET/AUTO DEFEAT
- C B 2/3 POWER RANGE LOWER DET/AUTO DEFEAT

The RCO observes the RPI indicators and rod bottom lights and determines two rods in the same rod bank group have fully inserted.

Which one of the following describes the appropriate course of action to be taken ?

- A. Check QPTR to be less than OR equal to 2%.
- B. Trip the Reactor and enter 3-EOP-E-0, "Reactor Trip or Safety Injection."
- C. Increase reactor power to maintain Tave within 3 degrees of Tref.
- D. Increase turbine load to maintain Tave within 3 degrees of Tref.

A.

ONOP-028.3 page 5 step 4

Attach core drawing to show location of control rods

B. Not required because both rods are in the same group

- C. Caution prohibits increase in reactor power while performing this procedure
- D. Reducing turbine load is permitted

Answer: A

83. 003A1.10 001

Which one of the following describes the effect of decreasing VCT pressure from 30 psig to 10 psig during RCS heatup in Mode 3?

- A. Charging Pumps will cavitate.
- B. RCP #2 seal flow decreases.
- C. Letdown flow increases.
- D. High RCP standpipe level alarm actuates.

B

#/4-OP-047.1 P&L 4.2, 4.15.3

The >15 PSIG VCT pressure is based on maintaining sufficient backpressure on the Reactor Coolant pump No. 1 seals. The back pressure on No. 1 seals is the summation of piping flow resistance in the seal water return lines and VCT pressure. Increased back pressure could cause a reduction in No. 1 seal water flow. Therefore the # 2 seal flow will decrease if the backpressure on the # 1 seal decreases.

Answer: B

84. 075K1.02 001

Which one of the following identifies the minimum number of Circulating Water Pumps that must be in operation to satisfy the interlock that allows a radioactive liquid release?

- A. 0
- B. 1
- C. 2
- D. 3

b.

REFERENCE: 5613-M-3010, Sheet 1

When discharging from the rad waste facility monitor tanks, valve 1804 is opened to the waste release header, RCV-18 is opened, and then valve 4749 is opened and throttled to obtain the proper liquid waste release flow rate as indicated on FI-1064. R-18 count rates should be continuously monitored during the release. An expected count rate for R-18 is calculated by the chemists. During the release, R-18 response is verified by comparing actual count rate to the expected count rate. Start and stop times, tank levels, and the R-18 count rate are recorded on the release permit. Should R-18 exceed its alarm setpoint during the discharge, the monitor tank pump is stopped and RCV-18 and valve 4749 are closed. The Nuclear Plant Supervisor is then notified. When the tank being released reaches its low level alarm setpoint, the transfer pump automatically stops and the lineup is then return to normal. RCV-18 is closed, valve 4749 is closed and locked, and valve 1296 or 1804 is closed.

Answer: B

85. 017A1.01 001

Plant conditions:

- C A reactor trip with a loss of all AC power occurred 2 hours ago.
- C Core exit thermocouples read approximately 650 degrees F and increasing.
- C Steam generator pressure is stable at 815 psig.
- C Steam generator steam flow is undetectable.

Which ONE of the following describes plant conditions?

- A. Loss of natural circulation flow has occurred.
- B. Natural circulation flow is increasing.
- C. The reactor core has uncovered and core damage is imminent.
- D. Reactor Coolant System subcooling margin is increasing.

A

REFERENCE

LP 6902324, 3/4-EOP-ES-0.1 Attachment 1

E.O. 2 of LP 6902324

NRC Exam Bank - T Pt 1996/06/17

Answer: A

86. W/E05EK2.1 001

Unit 3 operators have entered FR-H.1 "Response to Loss of Secondary Heat Sink".

The following conditions exist:

- C No Main Feedwater Pumps are available.
- C No Auxiliary Feedwater Pumps are available.
- C The RCP's are off.
- C Annunciator E-2/6 HI-HI SG LVL TURBINE TRIP/FEEDWATER ISOLATION is in alarm.
- C The operators are preparing to re-establish feedwater using the Standby Steam Generator Feedwater Pump.

Which one of the following identifies the minimum signals that must be reset to satisfy the interlocks to re-establish feed flow to the Steam Generators?

- A. Reset SI
- B. Reset Phase A
- C. Reset Feedwater Isolation
- D. Reset Feedwater Isolation and SI

C

Feedwater isolation will reset with either initiating signal still in., Drawing 5610TL1

Answer: C

87. 026A2.03 001

Unit 4 experienced a Design Basis LOCA. The 4B sequencer failed to operate.

Which one of the following describes the required operator response to verify Containment Spray operation?

- A. Manually start the 4B CSP. Manually open MOV-4-880B.
- B. Manually start the 4B CSP. Check MOV-4-880B automatically opened.
- C. Check autostart of the 4B CSP. Manually open MOV-4-880B.
- D. Check autostart of the 4B CSP. Check MOV-4-880B automatically opened.

b.

REFERENCE: 5610-T-L1, Sheet 11 and Sheet 131a.
EOP-E-0, Step 14
SD - 025W7

Adequate containment heat removal capability is provided by two separate, full capacity, engineered safety feature systems. The design basis for containment heat removal, and the basis for containment pressure transient calculations in the FSAR, chapter 14, safety analysis, assumes that at least one of the three ECCs and a containment spray pump are operable for post-LOCA heat removal and that the second ECC will be running within the first 24 hours following the accident. The temperature and pressure profiles generated by the chapter 14 analysis were used as the basis for equipment qualification.

One train of containment spray OR two of the three ECCs could provide the heat removal capability to maintain the post accident containment temperature and pressure below the design values. However, the design and licensing basis LOCA analysis assumes the use of both redundant systems. This design basis was used for equipment qualification inside containment.

At least one of the three ECCs work in conjunction with one train of containment spray to maintain the containment temperature and pressure within the design basis equipment qualification envelopes. The second ECC must be running within 24 hours to ensure these qualifications are maintained over the long term.

Answer: B

88. 014K4.05 001

Which one of the following solid state protection system rod control interlocks (rod stops) and their coincidences is correct?

Rod Stops		Coincidence	
A.	Power range High Flux		2/4
OPDT Setpoint matches Actual DT Coincidence		2/3	
B.	Power range High Flux		1/4
OPDT Setpoint matches Actual DT Coincidence		2/3	
C.	Power range High Flux		2/4
OPDT Setpoint matches Actual DT Coincidence		1/2	

D. Power range High Flux
OPDT Setpoint matches Actual DT Coincidence

1/2

1/4

b

Reference: SD 005/SYS.027A, 028A, Figure 12, 5610-T-LI sht 21

Answer: B

89. G2.1.22 001

Operators are performing a reactor startup on Unit 3. The ECC predicts criticality at D-100.

Which one of the following identifies the rod height closest to the point at which operators will announce entry into Mode 2?

- A. C-93
- B. C-110
- C. D-83
- D. D-100

A

REFERENCE: 0-OSP-040.4, Step 11.2 PCB Section 2, Fig. 5 Unit 3 Cycle 18 û 10,000 MWD/MTU

Answer: A

90. 012K2.01 001

The power supplied to AMSAC from both Vital Buses 3P06 and 3P07 has been lost. What effect will this have on AMSAC and its components?

A. AMSAC will not actuate, and will not be capable of actuation, however, the RPS will perform its safety functions without interference from AMSAC.

B. AMSAC will not actuate initially, however, it will automatically switch to an alternate power supply and will be fully functional.

C. AMSAC will actuate, and the RPS will perform its safety functions without interference from AMSAC.

D. AMSAC will not actuate and will not be capable of actuation, and the loss of the AMSAC will disarm any loss of Channel III and /or IV First Stage Turbine Pressure Signal (after 360 seconds).

A

SD 063/SYS. 049, 063

Failure Modes And Effects Analysis (FMEA)

This FMEA demonstrates that AMSAC will not spuriously actuate given a single failure of any electrical component which provides input to AMSAC and that loss of power supplied to AMSAC and its components will not actuate AMSAC.

The AMSAC is a backup for the Reactor Protection System (RPS) during an ATWS event and is considered non-safety related. The AMSAC has been designed such that in the event of AMSAC power failure the AMSAC will not actuate, as the circuitry will actuate only when

energized. Failure of the AMSAC to actuate shall not adversely affect any existing plant systems or components. In addition, electrical isolation devices internal to the AMSAC cabinet supply a protective interface between the non-safety AMSAC and the eight safety related inputs and two safety related outputs. This isolated safety-non-safety boundary assures that an electrical failure of AMSAC will not affect the equipment on the safety related side of the isolators. By the use of this protective isolation and adding the AMSAC "energize to actuate" control signals parallel to the existing control initiating circuitry, the RPS will perform its safety functions without interference from AMSAC, whether or not AMSAC is actuated. Refer to Table 2.

Failure of any First Stage Turbine Pressure Signal (Channel III and /or IV)

Loss of signal will disarm AMSAC (after 360 seconds)

Loss of Vital Power 3P06 (S/G level Channel I), 3P07 (S/G level channel II).

The AMSAC processor will not initiate an actuate signal if power is lost to these power sources. This part of the inherent logic of the processor and will give AMSAC trouble alarm on 3C04. Also check control board indicators for trouble.

Answer: A

91. 011EA1.17 001

While in Mode 4 Unit 3 experienced a LOCA.

⌘ Operators are performing 3-ONOP-041.7, "Shutdown LOCA [Mode 3 (Less than 1000 psig) or Mode 4]."

⌘ One HHSI pump has been started.

⌘ CET temperatures are stable and RCS Hot Leg temperatures are decreasing slightly.

⌘ RVLMS Plenum indication is 0%.

Which one of the following identifies the required operator response and the reason for that response?

- A. Immediately start all HHSI pumps to fill the upper head.
- B. Immediately start all HHSI pumps to restore core cooling.
- C. Start additional HHSI pump(s) one at a time, as necessary to fill the upper head.
- D. Start additional HHSI pump(s) one at a time, as necessary to restore core cooling.

ANSWER:

c

REFERENCE: 3-ONOP-041.7, Step 15

3-ONOP-041.7, Shut Down LOCA., Step 15.

- A. Only required if RCS hot legs are not stable
- B. Only required if RCS temperature is increasing
- C. Required because upper head is voided
- D. Note prior to step, directs operator to only start ONE charging pump at a time and allow the plant to stabilize before starting additional pumps.

Answer: C

92. 073A2.02 001

Containment Air Particulate Monitor Channel (R-11) is reading erratically. The instrument technicians report that the lead for the power supply has come loose. As he reconnects the lead, the instrument momentarily goes off scale high and upon reconnecting the lead, the instrument returns to its normal value. What are the consequences of the instrument technicians actions?

- A. The containment purge supply and exhaust fans trip. The containment purge supply and exhaust isolation valves close. The control room ventilation is in recirculation mode.
- B. The containment purge supply and exhaust fans remain running. The containment purge supply and exhaust isolation valves close. The control room ventilation is in recirculation mode.
- C. The containment purge supply and exhaust fans trip. The containment purge supply and exhaust isolation valves remain open. The control room ventilation remains in normal alignment.
- D. The containment purge supply and exhaust fans remain running. The containment purge supply and exhaust isolation valves close. The control room ventilation remains in normal alignment.

A

From Process radiation monitors SD

Containment Air Particulate Monitor Channel (R-11) and Radioactive Gas Monitor Channel (R12)

The alarm setpoints for R-11 and R-12 are based on the containment purge exhaust rate. These setpoints are determined by the radiochemist, and adjusted (per his instructions) by the I&C Department. The alarm setpoints for these monitors are determined from Technical Specifications. A high alarm condition on either of these channels initiates a containment ventilation isolation. In order to reset the containment ventilation isolation signal, containment radioactivity must be reduced below the specified setpoint and the lockout relays associated with containment ventilation isolation, located on relay racks QR50 and QR51 behind VPB, must be reset. The containment ventilation isolation signal isolates the containment ventilation by tripping the containment purge supply and exhaust fans, closes the containment purge supply and exhaust isolation valves, closes the instrument air bleed valves, and places the control room ventilation in recirculation mode.

Answer: A

93. G2.2.23 001

Which one of the following identifies when AFW System Tech. Specs. are applicable and when operability is demonstrated?

Applicability

Demonstrate Operability

- | | | |
|----|----------------|--------------------------|
| A. | Modes 1 & 2 | Prior to entering Mode 1 |
| B. | Modes 1 & 2 | Prior to entering Mode 2 |
| C. | Modes 1, 2 & 3 | Prior to entering Mode 1 |
| D. | Modes 1, 2 & 3 | Prior to entering Mode 3 |

c.

REFERENCE: Tech. Spec. 3/4.7.1.2
 Answer: C

94. 055EA2.01 001

With both units initially at 100% power and normal system alignments, the switchyard deenergizes resulting in a Loss of Offsite Power to both units.

- Both Unit 3 EDGs locked out and cannot be restarted.
- Both Unit 4 EDGs automatically started and reenergized their respective 4kV buses.
- The ANPS directs the BOP to restore power to the 3A 4KV bus first.

Which one of the following identifies the source of power that operators will align to the 3A 4KV bus?

- A. 4A EDG via the 3D and 4D 4kV Buses.
- B. 4B EDG via the 3D and 4D 4kV Buses.
- C. 3C 4kV Bus.
- D. Unit 4 Startup Transformer.

b.

REFERENCE: 3-ONOP-004.2, Steps 8 - 15
 Answer: B

95. 007A2.02 001

Operators are performing 3-OP-041.3, Section 7.2, "Reducing PRT Liquid Temperature." Annunciator A 7/1, PRT HI/LO LEVEL HI PRESS/TEMP, alarms.

The RCO observes the following PRT parameter values:

PRT Temperature: 105 F

PRT Level: 69 %

PRT Pressure: 12 psig

Which ONE of the following identifies correct operator response?

- A. Continue with Section 7.2, "Reducing PRT Liquid Temperature."

- B. Raise PRT level by performing Section 5.1, "Establishing Normal Conditions."
- C. Lower PRT level by performing Section 7.1, "Draining the PRT."
- D. Lower PRT pressure by performing Section 7.3, "Purging/Reducing PRT Pressure."

ANSWER:

d

REFERENCE: 3-OP-041.3 CAUTION before Step 7.2.1, 3-ARP-097.CR A7/1
 Answer: D

96. 001AK1.17 001

Operators have successfully completed Immediate Actions in response to an uncontrolled rod withdrawal with reactor power initially at 85%.

The following stable conditions now exist:

Reactor Power:	87%
Tavg:	574 F
Tref:	570 F (same as pre-event value)
RCS boron Concentration:	270 ppm (same as pre-event value)

Which one of the following is correct regarding the effect of this event on the Moderator Temperature Coefficient (MTC) and the potential effect on subsequent operations?

- A. MTC has become more negative. A subsequent cooldown would add positive reactivity.
- B. MTC has become more negative. A subsequent cooldown would add negative reactivity.
- C. MTC has become less negative. A subsequent cooldown would add positive reactivity.
- D. MTC has become less negative. A subsequent cooldown would add negative reactivity.

C

T-D dwg 5610-T-D-18A; System descriptions SD 005/SYS.027A, 028A pages 30 and 31
 Answer: A

97. 069EK3.01 001

Operators have performed 3-EOP-ECA 1.1, "Loss of Emergency Coolant Recirculation" and are now responding to high containment pressure using 3-EOP-FRZ.1, "Response to High Containment Pressure." Both procedures have criteria for using containment spray. Which one of the following states which procedure has precedence and its basis?

The operation of the containment spray pumps indicated in procedure....

A. 3-EOP-ECA 1.1 takes precedence over the guidance of 3-EOP-FR-Z.1 because it conserves RWST water, if possible, by stopping containment spray pumps.

B. 3-EOP-ECA 1.1 takes precedence over the guidance of 3-EOP-FR-Z.1 because it ensures the maximum available heat removal system operability in order to reduce containment pressure.

C. 3-EOP-FR-Z.1 takes precedence over the guidance of 3-EOP-ECA 1.1 because it conserves RWST water, if possible, by stopping containment spray pumps.

D. 3-EOP-FR-Z.1 takes precedence over the guidance of 3-EOP-ECA1.1 because it ensures the maximum available heat removal system operability in order to reduce containment pressure.

A.
BASIS DOCUMENT Page 11 BD-EOP-FR-Z.1 RESPONSE TO HIGH CONTAINMENT PRESSURE

Procedure ECA-1.1 uses a less restrictive criteria, which permits reduced spray pump operation depending on RWST level, containment pressure and number of emergency fan coolers operating. level, containment pressure and number of emergency fan coolers operating.

The less restrictive criteria for containment spray operation is used in procedure ECA-1.1 since recirculation flow to the RCS is not available and it is very important to conserve RWST water, if possible, by stopping containment spray pumps.

Answer: A

98. 040EG2.4.6 001

Operators have entered 3-EOP-E-0 due to a Steam Line break. Step 13 of 3-EOP-E-0 states:

ôCheck if Main Steam lines should be isolated.ö

Which one of the following conditions would require closing the MSIVs in this situation?

- A. High steam flow and high Tav_g
- B. Low steam flow and low Tav_g
- C. Low Tav_g and Hi Hi containment pressure
- D. Low Tav_g and Low S/G pressure

C

REF EOP-E-0, step 13 and basis document

- A. Requires high steam flow and low tav_g or low steam generator pressure. Does not have low Tav_g. Would be a small break with feedwater isolation.
- B. Requires high steam flow and low tav_g or low steam generator pressure. Does not have high steam flow. A break before the flow sensors.
- C. A break inside containment. Hi Hi containment pressure would cause the isolation
- D. Requires high steam flow and low tav_g or low steam generator pressure. Does not have high steam flow. A break where the flow sensors do not respond..

Answer: C

99. 051AA1.04 001

Unit 3 is at 100 % power when the Main Turbine slowly begins losing vacuum. Operators enter 3-ONOP-014, "MainCondenser Loss of Vacuum", but are unable to immediately start the SJAE hogging jets. Operators then go to 3-GOP-103, "Power Operatio to Hot Standby," and begin a power decrease.

The following conditions exist:

- Initial condenser vacuum was 28 inches
- Vacuum was lost at a rate of ½ inch per minute.
- The decrease continued for 8 minutes until the SJAE hogging jets were started
- Vacuum then recovered at a rate of ½ inch per minute.
- The rate of load decrease was 35 MWT per minute and remained constant until two minutes after the SJAE hogging jets were restarted.

Which one of the following indicates the approximate power level when SJAE hogging pumps were started and were any condenser vacuum limitations violated?

A. The approximate power level when the SJAE hogging jets were started was 52 % and no operational limits associated with the condenser vacuum were violated.

B. The approximate power level when the SJAE hogging jets were started was 52 % and operational limits associated with the condenser vacuum were violated.

C. The approximate power level when the SJAE hogging jets were started was 62 % and no operational limits associated with the condenser vacuum were violated.

D. The approximate power level when the SJAE hogging jets were started was 62 % and operational limits associated with the condenser vacuum were violated.

C

At 8 minutes the power level had dropped 280 MW 280/728 is ~ 62% power. The power decrease continued, however the vacuum recovered before reaching the region where operations is not allowed.

A. Power level based on 12 minutes, not 10. Misreading the curve to determine operational limits had been violated.

B. Power level based on 12 minutes, not 10.

C. Correct answer

D. Misreading the curve to determine operational limits had been violated.

Provide 3-ONOP-014 curve

Answer: C

100. 062AA2.04 001

Unit 4 is operating at 100% power with two ICW pumps running. One pump trips and flow through the remaining ICW Pump is 20,500 GPM. An attempt to adequately reduce ICW total flow by throttling the TPCW Hx Outlet ICW isolation valve and the CCW Hx Outlet Spool piece valve was unsuccessful.

Which one of the following describes your required actions?

A. Reduce unit load using 3-GOP-103 to limit heat input into the TPCW system AND throttle ICW flow to the TPCW system heat exchangers using 3-50-401 until TPCW heat exchanger outlet temperature is less than 105 degrees and the total ICW flow is less than 19000 GPM.

B. Reduce unit load using 3-GOP-103 to limit heat input into the TPCW until the TPCW heat exchanger outlet temperature is below 105 degrees. DO NOT throttle ICW flow to the TPCW system heat exchangers using 3-50-401 until the total ICW flow is less than 19000 GPM.

C. Reduce unit load using 3-GOP-103 to limit heat input into the TPCW system AND adjust ICW flow to the TPCW system heat exchangers using 3-50-401 until the TPCW heat exchanger outlet temperature is below 120 degrees.

D. Adjust ICW flow to the TPCW system heat exchangers using 3-50-401 until the TPCW heat exchanger outlet temperature is below 120 degrees, DO NOT reduce unit load.
A

B, C, D all have actions that are not required and have the wrong system temperature, the limit is 105.

3-ONOP-019 Intake Cooling Water Malfunction

Step 4 Verify Intake Cooling Water Pumps -TWO RUNNING

RNO - Perform the following:

Manually start any available Intake Cooling Water Pump to establish TWO RUNNING.

- b) IF only one ICW Pump is operating AND total ICW flow is greater than 19,000 GPM, THEN immediately reduce total ICW flow by:
C Throttling TPCW HX Outlet Combined ICW Iso Vlv 3-50-401 while maintaining TPCW Heat Exchanger outlet temperature less than 105 degrees.
C Throttle 3-50-406, CCW HX Outlet Spool Piece Bypass Valve, and/or 3-50-407, CCW HX Outlet Spool Piece Iso Vlv, while maintaining minimum ICW flows through the CCW Heat Exchangers as determined by Enclosure 1 of 3-OP-019, INTAKE COOLING WATER SYSTEM.
- c) IF unable to reduce total ICW flow through a single ICW Pump to less than 19,000 GPM, THEN reduce Unit Load using 3-GOP-103, POWER OPERATION TO HOT STANDBY, to limit heat input into the TPCW system and throttle ICW flow to the TPCW Heat Exchangers using TPCW HX Outlet Combined ICW Iso Vlv 3-50-401 until total ICW flow is less than 19,000 GPM.
- d) IF a single ICW Pump has operated at flows greater than 19,000 GPM, THEN refer to 3-OP-019, INTAKE COOLING WATER SYSTEM.
Answer: A