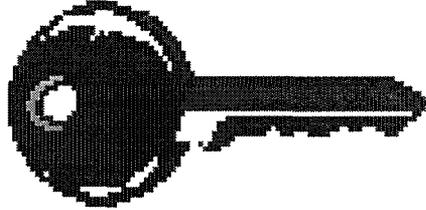


Pilgrim Nuclear Power Station

Operation Training



All Questions Key

All Questions Key

Question Number: 1

With AO-4353, "High Press/ Low Press Service Air Inlet Crosstie Valve" initially open, Instrument Air Header Pressure starts to degrade and reaches 78 psig. AO-4353 has remained open.

Under these conditions AO-4353:

- a. should have automatically closed and is now required by PNPS 5.3.8, Loss of Instrument Air to be manually closed.
- b. should have automatically closed however PNPS 5.3.8, Loss of Instrument Air does NOT require the valve to be manually closed.
- c. should not have automatically closed but should be manually closed in accordance with PNPS 5.3.8, Loss of Instrument Air.
- d. should not have automatically closed and is NOT required to be closed by PNPS 5.3.8, Loss of Instrument Air.

All Questions Key

Details for Question Number: 1

Answer: a

References:

PNPS 5.3.8, Loss of Instrument Air (Rev 25); pg 3 and 4

Provided References:

None

Explanation:

AO-4353 should have isolated at 85 psig. PNPS 5.3.8 has you close the valve at 80 psig.

Comments:

Objective: O-RO-02-02-04 EO 9

K/A: 295019AA104

Question Source: New

10CFR Ref: 41.7

Difficulty Level: 3.5

Exam Level: RO

Cognitive Level: Memory - Fundamental

Importance: 3.3

Tier: 1 **Group:** 1

All Questions Key

Question Number: 2

Given the following sequence of events:

0800: Torus cooling is placed in service.

0810: A leak from the RPV causes drywell pressure to start increasing, RPV level to start lowering and RPV pressure to start lowering.

0820: Drywell pressure reaches 2.2 psig

0830: RPV Level reaches -46 inches.

0840: RPV pressure reaches 400 psig.

Under these conditions, LPCI Loop Select would initiate at ____ (1) ____ and Torus Cooling Valve MO-10001-34A would close at ____ (2) ____.

- a. (1) 0820
(2) 0820
- b. (1) 0820
(2) 0830
- c. (1) 0830
(2) 0830
- d. (1) 0830
(2) 0840

All Questions Key

Details for Question Number: 2

Answer: a

References:

2.2.19, RHR (Rev 83); pgs 17-18 and Attachment 9

Provided References:

None

Explanation:

LPCI loop select will initiate at 2.2 psig DW Pressure or -46 inches reactor water level. A LPCI initiation signal will occur at 2.2 psig DW Pressure OR -46 inches reactor water level for 11 minutes OR -46 inches reactor water level with reactor pressure below 400 psig. MO-34 closes on LPCI initiation signal.

Comments:

Objective: O-RO-02-09-01 EO 9
O-RO-02-09-01 EO 11

K/A: 295024EK212

Question Source: New

10CFR Ref: 41.7

Difficulty Level: 2.5

Exam Level: RO

Cognitive Level: Memory - Fundamental

Importance: 3.5

Tier: 1 **Group:** 1

All Questions Key

Question Number: 3

Steady state reactor pressure at 100% power would be approximately _____(1)_____ psig.

Per PNPS 2.4.37 Turbine Control System Malfunctions, in the event of a pressure control malfunction that causes reactor pressure to start to rise, a reactor scram would be required _____(2)_____.

- a. (1) 1035
(2) only if reactor pressure exceeds the scram setpoint of 1060 psig.
- b. (1) 1035
(2) if reactor pressure approaches the scram setpoint of 1060 psig.
- c. (1) 1015
(2) only if reactor pressure exceeds the scram setpoint of 1060 psig.
- d. (1) 1015
(2) if reactor pressure approaches the scram setpoint of 1060 psig.

All Questions Key

Details for Question Number: 3

Answer: b

References:

PNPS 2.1.1, Startup From Shutdown (Rev 129); pg 13

PNPS 2.4.37, Turbine Control System Malfunctions (Rev 17); pg 2

Provided References:

None

Explanation:

PNPS 2.1.1, Startup From Shutdown Precaution 28 states "Reactor dome pressure must be limited to 1035 psig (1025 to 1045) at rated power." The RPS system will trip upon reactor pressure reaching 1060 psig. PNPS 2.4.37 requires a reactor scram if reactor pressure approaches 1060 psig.

Comments:

Objective: None Identified

K/A: 295025G2132

10CFR Ref: 41.10

Exam Level: RO

Importance: 3.4

Tier: 1 **Group:** 1

Question Source: New

Difficulty Level: 3.0

Cognitive Level: Comprehension-Analysis

All Questions Key

Question Number:4

Given the following information:

- Reactor pressure 600 psig
- Torus water level 130"
- Bulk Torus water temperature 200 degrees F

What color would the border of the Torus Water Temperature / HCTL SPDS display be?

- a. Green
- b. Yellow
- c. Red
- d. White

All Questions Key

Details for Question Number: 4

Answer: c

References:

2.6.1, Emergency & Plant Information Computer (EPIC) System Real Time Analysis...(Rev 8);
pg 47
EOP-03

Provided References:

EOP-03

Explanation:

Per the procedure and the given conditions, the SPDS display would be alarming and have a red border.

Comments:

Objective: None Identified

K/A: 295026EK204

10CFR Ref: 41.7

Exam Level: RO

Importance: 2.5

Tier: 1 **Group** 1

Question Source: New

Difficulty Level: 2.5

Cognitive Level: Comprehension-Analysis

All Questions Key

Question Number: 5

Given the following conditions:

- A leak in the drywell has caused drywell temperature and pressure to rise.
- A torus-drywell vacuum breaker has failed open.
- All torus bottom pressure indication has been lost.
- Torus water level is normal.

Torus bottom pressure:

- a. will be the same as drywell pressure.
- b. will be the same as torus air space pressure.
- c. will be equal to the pressure exerted by the height of the water below the bottom of the downcomer.
- d. will be equal to the pressure exerted by the total height of the water in the torus plus the pressure in the drywell.

All Questions Key

Details for Question Number: 5

Answer: d

References:

Properties of Water

Provided References:

None

Explanation:

Since a torus-drywell vacuum breaker has failed open, the drywell pressure and torus air space pressure will be the same. Torus bottom pressure can be derived by adding the pressure exerted by the water in the torus to drywell pressure.

Comments:

Objective: O-RO-03-04-05 EO 14.a

K/A: 295028EA205

10CFR Ref: 41.10

Exam Level: RO

Importance: 3.6

Tier: 1 **Group** 1

Question Source: New

Difficulty Level: 4.0

Cognitive Level: Comprehension-Analysis

All Questions Key

Question Number: 6

RCIC is being used to control RPV water level with its suction aligned to the torus when a leak in the torus occurs:

Which ONE of the following will occur as torus level continues to lower?

- a. RCIC will trip on low suction pressure
- b. RCIC will trip on low cooling water flow
- c. RCIC suction will auto transfer to the CST on low torus water level.
- d. RCIC suction will auto transfer to the CST on low suction pressure.

All Questions Key

Details for Question Number: 6

Answer: a

References:

2.2.22, RCIC (Rev 61); pg 11 of 53

Provided References:

None

Explanation:

RCIC has no auto swap feature. RCIC trips on low suction pressure but not on low cooling water flow.

Comments:

Objective: O-RO-02-09-04 EO 12

K/A: 295030EA102

10CFR Ref: 41.7

Exam Level: RO

Importance: 3.4

Tier: 1 **Group** 1

Question Source: Bank

Difficulty Level: 2.5

Cognitive Level: Memory - Fundamental

All Questions Key

Question Number: 7

The plant is initially at 100% power. Which ONE of the following conditions will cause a trip of all Reactor Feed Pumps within approximately 1 minute of occurring?

- a. A loss of bus A-1 occurs with the RFP Sequential Trip Selector Switch in the OFF position.
- b. A loss of bus A-2 occurs with the RFP Sequential Trip Selector Switch in the OFF position.
- c. A trip of the 'A' Condensate Pump occurs with the RFP Sequential Trip Selector Switch in the ON position.
- d. A trip of the 'A' Reactor Feed Pump occurs with the RFP Sequential Trip Selector Switch in the ON position.

All Questions Key

Details for Question Number: 7

Answer: b

References:

2.4.49, Feedwater Malfunctions (Rev 31); pg 18 of 20

Provided References:

None

Explanation:

A loss of A-2 will cause a trip of 2 condensate pumps and 1 RFP. With 1 Condensate Pump and two RFPs running and the RFP sequence trip selector switch in OFF, suction pressure will lower until the RFPs trip on low suction pressure.

A loss of A-1 will cause a trip of 2 RFPs and 1 Condensate Pump. While this will cause a scram on low level if operating initially at full power, it will not cause a trip of all reactor feed pumps.

A trip of the A Condensate Pump or the A RFP with the RFP trip selector switch in ON will cause only a trip of one RFP, Recirc Pumps will run back to 44% speed and the unit will stay on line.

Comments:

Objective: O-RO-02-04-02 EO 13.k

K/A: 295031A111

Question Source: New

10CFR Ref: 41.7

Difficulty Level: 3.0

Exam Level: RO

Cognitive Level: Comprehension-Analysis

Importance: 4.1

Tier: 1 **Group:** 1

All Questions Key

Question Number: 8

Given the following conditions:

- A failure to scram has occurred.
- Reactor power is 20%.
- Torus bulk water temperature is 115 degrees F.
- Pressure is being controlled between 1000 and 1050 psig with SRVs
- RPV water level is +5 inches.
- Injection has been terminated and prevented from Condensate and Feedwater, HPCI, RHR and Core Spray.

In accordance with EOP-02, which ONE of the following conditions would allow the operator to resume injection from these systems?

- a. APRM downscale lights come in.
- b. Reactor power reaches the heating range with a negative period.
- c. Reactor water level reaches -25 inches.
- d. Reactor power is reduced such that only one (1) SRV is needed for pressure control.

1

2

3

All Questions Key

Details for Question Number: 8

Answer: a

References:

EOP-02, RPV Control, Failure-to-Scram

Provided References:

EOP-02, RPV Control, Failure-to-Scram

Explanation:

Reactor power less than 3% (as indicated by APRM downscale alarms) is a conditions which will allow resuming injection.

Power below the heating range with negative period is the definition of shutdown but cannot be used as a basis for starting injection.

Reactor water level dropping to -25 inches could be used as a basis for resuming injection if level was lowered to prevent oscillations. However, level was lowered in this case to protect containment.

If all SRVs can be closed with DW pressure below 2.2 psig, injection can be resumed.

Comments:

Objective: O-RO-03-04-04 EO 25.a

K/A: 295031EA202

Question Source: New

10CFR Ref: 41.10

Difficulty Level: 3.0

Exam Level: RO

Cognitive Level: Comprehension-Analysis

Importance: 4.0

Tier: 1 **Group** 1

All Questions Key

Question Number: 9

Given the following conditions:

- A failure to scram has occurred.
- 780 Gallons from the SBLC tank have been injected to the RPV.
- Reactor water level has been lowered to control power.

At this point _____(1)_____ has been injected into the RPV. Analysis shows that injection of this amount of boron will safely allow _____(2)_____.

- a. (1) hot shutdown boron weight
(2) commencement of a cooldown
- b. (1) hot shutdown boron weight
(2) restoration of level to the +12 to +45 inch band
- c. (1) cold shutdown boron weight
(2) commencement of a cooldown
- d. (1) cold shutdown boron weight
(2) restoration of level to the +12 to +45 inch band

All Questions Key

Details for Question Number: 9

Answer: b

References:

EOP-02, RPV Control, Failure-to-Scram

Provided References:

EOP-02, RPV Control, Failure-to-Scram

Explanation:

Hot shutdown boron weight is 750 gallons. Injection of this amount of boron will allow restoration of level but not a cooldown.

Comments:

Objective: O-RO-03-04-04 EO 14

K/A: 295037EK304

Question Source: New

10CFR Ref: 41.5

Difficulty Level: 3.0

Exam Level: RO

Cognitive Level: Comprehension-Analysis

Importance: 3.2

Tier: 1 **Group:** 1

All Questions Key

Question Number: 10

The Technical Specification limit of 20 microcuries per milliliter Total Iodine of reactor water is based on ensuring that dose at the site boundary to:

- a. the skin is limited to 8 Rem in the event of a rod withdrawal error.
- b. the thyroid is limited to 8 Rem in the event of a rupture of a main steam line.
- c. the whole body is limited to 8 Rem in the event of a rod drop accident.
- d. extremities is limited to 8 Rem in the event of a failure to scram.

All Questions Key

Details for Question Number: 10

Answer: b

References:

Tech Specs 3.6.B.1 and Bases

Provided References:

None

Explanation:

Per T.S. Bases for 3.6.B.1, the 20 microcurie limit on reactor water limits dose to the thyroid to 8 Rem in the event of a steam line rupture.

Comments:

PNPS 2002 SRO Exam - Question 11-modified

Objective: None Identified

K/A: 295038G2225

10CFR Ref: 43.2

Exam Level: RO

Importance: 2.5

Tier: 1 **Group** 1

Question Source: Bank Modified

Difficulty Level: 3.0

Cognitive Level: Memory - Fundamental

All Questions Key

Question Number: 11

The Control Room is evacuated due to a fire in the Main Control Room. The immediate actions of PNPS 2.4.143, "Shutdown Outside the Control Room" were completed. No subsequent actions were accomplished prior to evacuation.

Which of the following is an action required per PNPS 2.4.143 and the reason for it?

- a. Open the APRM breakers to protect the RPS power supply from possible feedback from the Control Room.
- b. Open the APRM breakers to scram the reactor.
- c. Open the IRM breakers to protect the RPS power supply from possible feedback from the Control Room.
- d. Open the IRM breakers to scram the reactor.

All Questions Key

Details for Question Number: 11

Answer: b

References:

2.4.143, Shutdown From Outside the Control Room (Rev 29); pg 6 of 106

Provided References:

None

Explanation:

Per step [9].(a) of the subsequent actions of PNPS 2.4.143, Shutdown From Outside the Control Room, the APRM breakers are opened to scram the reactor.

Comments:

Objective: O-RO-03-03-25

K/A: 600000AK304

10CFR Ref: .0

Exam Level: RO

Importance: 2.8

Tier: 1 **Group** 1

Question Source: New

Difficulty Level: 3.0

Cognitive Level: Memory - Fundamental

All Questions Key

Question Number: 12

During a loss of coolant accident in the drywell, drywell sprays have been initiated. The following plant conditions exist:

- Drywell pressure is 30 psig and rising slowly
- Torus bottom pressure is 35 psig and rising slowly
- Torus water level is 165" and rising slowly

How, if at all, would the containment integrity be affected if torus water level were to continue to rise?

- a. As water level rose, bottom pressure would also rise to the point of exceeding internal design pressure.
- b. As water level rose, the drywell atmosphere would get compressed causing it to exceed internal design pressure.
- c. At 180", the Drywell to Torus Vacuum Breakers would become covered causing drywell pressure to lower and exceed negative design pressure.
- d. Containment integrity would not be affected.

All Questions Key

Details for Question Number: 12

Answer: c

References:

O-RO-03-04-05 (Rev 5); pg IG 35, 40, 46

Provided References:

None

Explanation:

At 180", the Drywell to Torus Vacuum Breakers will become covered. Since the drywell and torus areas can no longer equalize pressure, the condensing action of the steam being cooled by the drywell spray will eventually draw a vacuum on the Drywell, threatening containment integrity.

Comments:

Modified - TADS bank # 5652

Objective: O-RO-03-04-05 EO 8

K/A: 295029EK101

Question Source: Bank Modified

10CFR Ref: 41.8

Difficulty Level: 3.0

Exam Level: RO

Cognitive Level: Comprehension-Analysis

Importance: 3.4

Tier: 1 **Group** 2

All Questions Key

Question Number: 13

The plant is operating normally at 100% power when a Reactor Building Vent Hi Rad alarm is received and is verified to be valid.

Which ONE of the following describes the actions required by EOP-04 to determine whether the radiation levels in the reactor building have exceeded their Max Normal Values?

- a. Since a valid Reactor Building Vent Hi Rad alarm has been received, the radiation levels throughout the reactor building are assumed to be above their Max Normal Values.
- b. All Area Radiation Monitors in the Reactor building must be verified below their alarm setpoint, otherwise radiation levels in the reactor building would be assumed to be above their Max Normal Values.
- c. All Area Radiation Monitors in the Reactor building must be verified below 1000 mR/hr, otherwise radiation levels in the reactor building would be assumed to be above their Max Normal Values.
- d. Personnel must be dispatched to check radiation levels in the reactor building in order to determine whether any radiation levels are above their Max Normal Values.

All Questions Key

Details for Question Number: 13

Answer: d

References:

EOP-04, Secondary Containment Control
O-RO-03-04-06 (Rev 4); pgs 14-15

Provided References:

None

Explanation:

Local surveys must be taken in order to determine whether you are above Max Normal Rad Levels. While ARMs are available for various locations within the reactor building, the determination as to whether the Max Normal Rad Levels are exceeded would be based upon survey.

Comments:

Objective: O-RO-03-04-06 EO 7

K/A: 295033EA201

10CFR Ref: 41.10

Exam Level: RO

Importance: 3.8

Tier: 1 **Group** 2

Question Source: New

Difficulty Level: 2.5

Cognitive Level: Memory - Fundamental

All Questions Key

Question Number: 14

Secondary Containment Ventilation Radiation levels are rising as indicated by rising readings on the Reactor Building Ventilation Radiation Monitors.

Which, if any, of the following is the automatic system response if these radiation monitors continue to rise?

- a. No protective actions would occur
- b. SBGT will automatically start. The Reactor Building Supply and Exhaust Fans will remain running and must be manually secured.
- c. The Reactor Building Supply and Exhaust Fans will automatically trip. SBGT will not automatically start but must be manually started.
- d. The Reactor Building Supply and Exhaust Fans will automatically trip and SBGT will automatically start.

All Questions Key

Details for Question Number: 14

Answer: a

References:

PRM Reference Text (Rev 5); pgs 17-18

Provided References:

None

Explanation:

The Reactor Building Ventilation Exhaust Radiation monitors are used for monitoring only and do not drive any protective functions. It should be noted that at many plants, Reactor Building Vent Rad Monitor do provide a protective function.

Comments:

Objective: O-RO-02-03-02 EO 4.e

K/A: 295034EA102

Question Source: New

10CFR Ref: 41.7

Difficulty Level: 3.0

Exam Level: RO

Cognitive Level: Memory - Fundamental

Importance: 3.9

Tier: 1 **Group:** 2

All Questions Key

Question Number: 15

An ATWS is in progress. While attempting to inhibit ADS, the 'B' keylock is taken to the INHIBIT position, but the 'A' keylock seizes in the NORMAL position. Drywell pressure spikes up to 5 psig, and then returns to its previous value of 1.3 psig. 'A' RHR Pump is operating in the Torus Spray Mode. Reactor water level remained at -48" throughout the transient.

Five minutes into this evolution, ADS:

- a. is not blowing down because it is inhibited.
- b. is not blowing down because drywell pressure did not stay above 2.2 psig.
- c. is blowing down but only with the 'A' & 'C' valves
- d. is blowing down with all four valves.

All Questions Key

Details for Question Number: 15

Answer: d

References:

ADS Reference Text (Rev 3); pg 12

Provided References:

None

Explanation:

The drywell Hi-pressure signal seals-in and, when coupled with the existing low water level, causes the 105 second timer to actuate.

Comments:

Objective: O-RO-03-04-09 EO 4.a

K/A: 218000K302

10CFR Ref: 41.7

Exam Level: RO

Importance: 4.5

Tier: 2 **Group** 1

Question Source: New

Difficulty Level: 3.0

Cognitive Level: Comprehension-Analysis

All Questions Key

Question Number: 16

Reactor pressure is 25 psig with Shutdown Cooling just placed in service when a loss of D-4 occurs. This will result in a failure of _____ (1) _____ to isolate on a valid Group III isolation signal. In order to continue to have this valve open, PNPS 5.3.11, "Loss of Essential DC Bus D-16 or D-4 and D-36" requires _____ (2) _____.

- a. (1) MO-1001-47
(2) General Manager Plant Operations
- b. (1) MO-1001-50
(2) General Manager Plant Operations
- c. (1) MO-1001-47
(2) Maneuvering the plant to cold shutdown
- d. (1) MO-1001-50
(2) Maneuvering the plant to cold shutdown

All Questions Key

Details for Question Number: 16

Answer: d

References:

5.3.11, Loss of Essential Bus D16 or D4 and D36 (Rev 33); pg 7 of 20

Provided References:

None

Explanation:

Loss of D-4 results in the failure of the MO-1001-50 valve to auto close on an Group III PCIS signal. Plant procedures allow the valve to continue to be open provided the plant is maneuvered to cold shutdown conditions.

Comments:

Objective: O-RO-02-08-10 EO 12.k

K/A: 223002A202

Question Source: New

10CFR Ref: 41.5

Difficulty Level: 3.0

Exam Level: RO

Cognitive Level: Comprehension-Analysis

Importance: 2.9

Tier: 2 **Group** 1

All Questions Key

Question Number: 17

Reactor pressure exceeds the reactor scram setpoint and continues to rise. You note that the 4A Safety Valve lifts before any of the other safety or safety/relief valves. You also note that drywell pressure rapidly rises when the 4A Safety Valve lifts.

The fact that the 4A Safety Valve lifted first was _____(1)_____.

The fact that drywell pressure rose rapidly when 4A Safety Valve lifted was ____ (2)_____.

- a. (1) a proper system response since this valve has a lower setpoint than any safety or safety/relief valve.
(2) NOT a proper system response and may be due to a stuck open drywell-torus vacuum breaker.
- b. (1) NOT a proper system response since this valve has a higher setpoint than the safety/relief valves.
(2) NOT a proper system response and may be due to a stuck open drywell-torus vacuum breaker.
- c. (1) a proper system response since this valve has a lower setpoint than any safety or safety/relief valve.
(2) a proper system response since this valve discharges to the drywell.
- d. (1) NOT a proper system response since this valve has a higher setpoint than the safety/relief valves.
(2) a proper system response since this valve discharges to the drywell.

All Questions Key

Details for Question Number: 17

Answer: d

References:

Technical Specification 3.6.D.1
Main Steam Reference Text (Rev 2); pg 12

Provided References:

Technical Specifications

Explanation:

Safety valve setpoints are 1240 psig. Safety Relief Valves are 1095-1115.

Safety valves discharge to the drywell.

Comments:

Objective: O-RO-02-04-01 EO 22

K/A: 239002K109

Question Source: New

10CFR Ref: 41.2

Difficulty Level: 3.0

Exam Level: RO

Cognitive Level: Comprehension-Analysis

Importance: 4.0

Tier: 2 **Group** 1

All Questions Key

Question Number: 18

During operation at 100% power with Feed Water Level Controllers in Automatic 3-element control, a single steam line flow channel fails to zero D/P.

Which ONE of the following describes the proper system response?

- a. The total steam flow signal increases, a feed flow/steam flow mismatch is produced which increases RPV level.
- b. The total steam flow signal decreases, a feed flow/steam flow mismatch is produced which decreases RPV level.
- c. The total steam flow signal increases, a feed flow/steam flow mismatch is produced which decreases RPV level.
- d. The total steam flow signal decreases, a feed flow/steam flow mismatch is produced which increases RPV level.

All Questions Key

Details for Question Number: 18

Answer: b

References:

FWLC Reference Text (Rev 3); pgs 27-28 of 50

Provided References:

None

Explanation:

Loss of one steam flow detector will result in indicated steam flow being less than actual. FWLC will then see feed flow as greater than steam flow and will anticipate a level change and close the FRVs, lowering level.

Comments:

PNPS 2002 SRO Exam

Objective: O-RO-02-04-10 EO 26

K/A: 259002K501

Question Source: Bank

10CFR Ref: 41.5

Difficulty Level: 2.5

Exam Level: RO

Cognitive Level: Comprehension-Analysis

Importance: 3.1

Tier: 2 **Group** 1

All Questions Key

Question Number: 19

Which of the following is NOT a path from the torus to the suction of the SBT system?

- a. Normal Exhaust line through AO-5041A & B
- b. Purge Exhaust line through AO-5042A & B
- c. Through the Combustible Gas Control (CAD) Valves
- d. Through the Direct Torus Vent Line

All Questions Key

Details for Question Number: 19

Answer: d

References:

PCAC Reference Text (Rev 4); pg 17

Provided References:

None

Explanation:

The Direct Torus Vent Line ties into the exhaust of the SBT system, not the suction.

Comments:

Objective: O-RO-02-08-02 EO 19

K/A: 261000K103

Question Source: New

10CFR Ref: 41.2

Difficulty Level: 2.0

Exam Level: RO

Cognitive Level: Memory - Fundamental

Importance: 2.9

Tier: 2 **Group:** 1

All Questions Key

Question Number:20

With regard to switchboards A5 & A6, the AC Electrical Distribution system is designed to allow paralleling between which of the following AC sources?

- a. SUT, SDT, & EDG
- b. UAT, SDT, & EDG
- c. UAT, SUT, & EDG
- d. UAT, SUT, & SDT

All Questions Key

Details for Question Number: 20

Answer: c

References:

Emergency AC Distribution Reference Text (Rev 6); pgs 11
PNPS 2.2.5, 23 kV Shutdown Transformer (Rev 15); pg 6 of 12

Provided References:

None

Explanation:

There is no way to parallel the SDT with any other source; the SDT is placed on a bus via dead bus transfer.

Comments:

Objective: O-RO-02-09-08 EO 9

K/A: 262001K405

Question Source: New

10CFR Ref: 41.7

Difficulty Level: 2.0

Exam Level: RO

Cognitive Level: Memory - Fundamental

Importance: 3.4

Tier: 2 **Group:** 1

All Questions Key

Question Number: 21

With the plant operating at rated conditions, a reactor scram occurs. If the auto transfer switches for all (6) 4160- VAC buses are in the OFF position , the status of the 4160 VAC buses 1 minute after the scram signal will be:

- a. A1, A2, A3, A4 are de-energized; A5 & A6 are energized from the EDGs.
- b. A1, A2, A3, A4 are de-energized; A5 & A6 are energized from the SDT.
- c. A1, A2, A3, A4 are de-energized; A5 & A6 are energized from the SUT
- d. A1, A2, A3, A4, A5 , A6 are all de-energized.

All Questions Key

Details for Question Number: 21

Answer: b

References:

4160 Reference Text (Rev 4); pg 26
2.2.8, Standby AC Power System System (Diesel Generators) (Rev 78); pg 22
2.2.5, 23KV Shutdown Transformer (Rev 15); pg 6

Provided References:

None

Explanation:

In all cases, A-1 – A-4 will be de-energized since the only 2 power supplies for them are the UAT and SUT. The SUT will only pick up A-5 & A-6 if the Auto Transfer Switches are in ON. The EDGs won't pick up A-5 & A-6 because they will only start on accident conditions which are not present. After 12 seconds, the SDT will supply the A-5 & A-6.

Comments:

TADS # 5544

Objective: O-RO-02-01-05 EO 10

K/A: 262001A401

Question Source: Bank

10CFR Ref: 41.7

Difficulty Level: 3.0

Exam Level: RO

Cognitive Level: Comprehension-Analysis

Importance: 3.4

Tier: 2 **Group:** 1

All Questions Key

Question Number: 22

The plant is operating at power when a loss of B-6 occurs. Which ONE of the following describes the effect on panel Y-2?

- a. Y-2 will be de-energized until B-6 is repowered.
- b. Y-2 will be de-energized until manual action is taken to start the Vital MG Set DC Motor.
- c. The Vital MG Set DC Motor will automatically energize and maintain the Vital MG Set running and powering Y-2.
- d. Y-12 will switch Y-2 to B-15.

All Questions Key

Details for Question Number: 22

Answer: c

References:

5.3.32, Loss of B6 (Rev 10); pg 2 of 11

Provided References:

None

Explanation:

The Vital MG set DC motor cannot start the MG set but can keep it running. No manual action is necessary. Y-12 only transfers Y-2 if the Vital MG set is not available.

Comments:

PNPS 2002 SRO Exam - Question 73

Objective: O-RO-02-01-07 EO 5.a

K/A: 262002K401

Question Source: Bank

10CFR Ref: 41.7

Difficulty Level: 3.0

Exam Level: RO

Cognitive Level: Memory - Fundamental

Importance: 3.1

Tier: 2 **Group** 1

All Questions Key

Question Number: 23

A loss of D-6 causes a reactor scram. When the A505 Breaker opens, a lockout of Bus A-5 occurs. Which one of the following will be true?

- a. B-6 will be without power
- b. Outboard MSIVs will be closed
- c. B-6 will be on B-2
- d. Inboard MSIVs will be closed

All Questions Key

Details for Question Number: 23

Answer: a

References:

5.3.13, Loss of Essential DC Bus D6 (Rev 21); Attachment 1

Provided References:

None

Explanation:

D-6 supplies power to (among other things) MSIVs and position indication, B6 breaker control, and the Auxiliary Oil pumps for the Recirc MGs. When D-6 is lost, B6 breaker control power is lost so the swbd will not transfer to the alternate supply – thus B-6 will be without power.

Distractor #1 & 3 – D-6 powers the **inboard** MSIV logic, but even then, the AC supply will prevent either set of MSIVs from closing.

Distractor #2 – As stated above, B-6 will be without power.

Comments:

TADS # 5775

Objective: O-RO-02-01-06 EO 6

K/A: 263000K101

Question Source: Bank

10CFR Ref: 41.2

Difficulty Level: 3.0

Exam Level: RO

Cognitive Level: Memory - Fundamental

Importance: 3.3

Tier: 2 **Group:** 1

All Questions Key

Question Number: 24

During the execution of EOP-01 following a reactor scram, 125 VDC bus D-6 is lost due to a hard ground on the bus. Reactor water level is + 50". Which of the following systems / components would be available to establish pressure control?

- a. HPCI in pressure control mode
- b. RCIC in pressure control mode
- c. Main Turbine Bypass valves
- d. SRVs

All Questions Key

Details for Question Number: 24

Answer: d

References:

EOP-01, RPV Control
2.2.14, 125V DC Battery Systems (Rev 46); pg 156

Provided References:

EOP-01 w/o entry conditions

Explanation:

Turbine Bypass Valves will be unusable due to the loss of D-6, which causes a loss of power to the MHC system & the Bypass Opening Jack Motor. EOP-01, RPV Control step P-5 refers the operator to Table D for alternate pressure control systems. HPCI & RCIC will be tripped due to the high reactor water level and thus not available for immediate use (would have to bypass interlocks)

Comments:

Modified - TADS # 6147

Objective: O-RO-02-04-01 EO 21.n

K/A: 263000A201

Question Source: Bank Modified

10CFR Ref: 41.5

Difficulty Level: 4.0

Exam Level: RO

Cognitive Level: Comprehension-Analysis

Importance: 2.8

Tier: 2 **Group** 1

All Questions Key

Question Number: 25

In accordance with PNPS 2.4.16, "Distribution Alignment Electrical System Malfunctions", the field of the 'A' diesel generator can be locally flashed during a loss of the 'A' 125 VDC Bus D-4 by:

- a. placing all four switches in the 'A' EDG's alternate shutdown panel to the "LOCAL" position.
- b. placing two car batteries in series and connecting them inside EDG 'A' local panel C101.
- c. depressing the local start pushbutton on C103.
- d. placing the voltage regulator in MANUAL on panel C103.

All Questions Key

Details for Question Number: 25

Answer: b

References:

2.4.16, Distribution Alignment Electrical System Malfunctions (Rev 27), Attachment 3

Provided References:

None

Explanation:

Per the procedure, two 12 volt car batteries are connect in series to the terminals in the C101 panel for 'A' EDG.

Distracters are all valid possibilities because they are all actual equipment involved in operating the EDGs.

Comments:

TADS # 2909

Objective: O-RO-02-09-06 EO 26

K/A: 264000K609

10CFR Ref: 41.7

Exam Level: RO

Importance: 3.3

Tier: 2 **Group** 1

Question Source: Bank

Difficulty Level: 2.5

Cognitive Level: Memory - Fundamental

All Questions Key

Question Number: 26

The K-110 air compressor is the “lead” compressor, K-111 is “lag”. Plant heating units in the Reactor Building have been disabled due to a rupture of the Plant Heating system. The internal Reactor Building temperature is slowly lowering due to a cold winter day.

As temperature in the air system lowers, the absolute change in pressure will be:

- a. directly proportional to the change in absolute temperature. This will result in K-110 air compressor starting at 102 psig.
- b. directly proportional to the square of the change in absolute temperature. This will result in the K-110 air compressor starting at 102 psig.
- c. directly proportional to the change in absolute temperature. This will result in the K-110 air compressor starting at 108 psig.
- d. directly proportional to the square of the change in absolute temperature. This will result in the K-110 air compressor starting at 108 psig.

All Questions Key

Details for Question Number: 26

Answer: a

References:

PNPS 2.2.36, Instrument Air Systems (Rev 51); pgs 6-9

Provided References:

None

Explanation:

Pressure changes directly proportional with temperature and the lead compressor will start at 102 psig.

Comments:

Objective: O-RO-02-02-04 EO 5

K/A: 300000A302

Question Source: New

10CFR Ref: 41.7

Difficulty Level: 2.5

Exam Level: RO

Cognitive Level: Comprehension-Analysis

Importance: 2.9

Tier: 2 **Group:** 1

All Questions Key

Question Number: 27

RBCCW pumps C & F are running and all other RBCCW pumps are available. The RBCCW LOOP A HDR DISCH LO alarm annunciates, followed shortly by the automatic start of an additional 'A' loop pump.

The pump start timer commenced at ____ (1) ____ and the ____ (2) ____ started after a time delay of ____ (3) ____.

- a. (1) 40 psig
(2) A pump
(3) 20 seconds
- b. (1) 40 psig
(2) B pump
(3) 40 seconds
- c. (1) 56 psig
(2) A pump
(3) 30 seconds
- d. (1) 56 psig
(2) B pump
(3) 60 seconds

All Questions Key

Details for Question Number: 27

Answer: c

References:

PNPS 2.2.30, RBCCW System (Rev 52); pg 15 of 90

Provided References:

None

Explanation:

The pump auto-start feature starts timing when pressure < 60 psig. The A pump is the first one to start since it has the shortest time delay (30 seconds).

40 psig is the Low Pressure start setpoint for TBCCW. 20 seconds and 40 seconds are the time delays for start of A and B TBCCW Pumps respectively.

Comments:

Objective: O-RO-02-02-06 EO 14

K/A: 400000A301

Question Source: New

10CFR Ref: 41.7

Difficulty Level: 2.5

Exam Level: RO

Cognitive Level: Memory - Fundamental

Importance: 3.0

Tier: 2 **Group:** 1

All Questions Key

Question Number: 28

While moving a fuel bundle from the reactor vessel to the spent fuel pool, the electrical power supply is lost to the main hoist motor. The fuel bundle is presently hanging one foot above the top of the fuel storage rack

Under these conditions:

- a. the main hoist motor will automatically swap to its Alternate Power Supply.
- b. the main hoist motor must be manually swapped to its Alternate Power Supply.
- c. the main hoist motor will be without power and must be operated using a handwheel in order to place the fuel bundle in a safe position.
- d. the main hoist motor will be without power. The bundle must be left in its current location until electrical power is restored.

All Questions Key

Details for Question Number: 28

Answer: c

References:

2.2.75, Fuel Handling and Servicing Equipment (Rev 45), Section 7.1.4

Provided References:

None

Explanation:

Answer is per procedure.

Comments:

TADS # 2324

Objective: O-NL-03-011-03 EO 3.c

K/A: 234000A203

Question Source: Bank Modified

10CFR Ref: 41.5

Difficulty Level: 3.5

Exam Level: RO

Cognitive Level: Memory - Fundamental

Importance: 2.8

Tier: 2 **Group:** 2

All Questions Key

Question Number: 29

Technical Specifications require the MSIVs to close in _____.

- a. 1 to 3 seconds
- b. 3 to 5 seconds
- c. 5 to 10 seconds
- d. 7 to 12 seconds

All Questions Key

Details for Question Number: 29

Answer: b

References:

Main Steam Reference Text (Rev 2); pg 17

Provided References:

None

Explanation:

Technical specifications require the valves to close within 3 to 5 seconds following an initiation signal. This time limit is set to meet the MSIV safety objectives.

Technical Specification section 3.13 requires testing of MSIVs per the IST program. The IST program sets the requirements for 3-5 second closure time.

Comments:

Modified - TADS # 3623

Objective: O-RO-02-04-01 EO 24

K/A: 239001G2222

Question Source: Bank Modified

10CFR Ref: 43.2

Difficulty Level: 3.0

Exam Level: RO

Cognitive Level: Memory - Fundamental

Importance: 3.4

Tier: 2 **Group:** 2

All Questions Key

Question Number: 30

You are conducting an emergency trip valve test on the main turbine per PNPS 8.A.9-1, "Turbine Test Weekly". After you position the switch to TRIP and check the lights, you move it to RESET as required. You do not leave it in RESET long enough before taking the switch to LOCKOUT and pushing down on the switch, returning it to normal. Which of the following describes the proper response of the plant to this manipulation?

- a. The turbine overspeed trip function is now disabled, although no annunciation warns the operator of this condition.
- b. The turbine overspeed function will still operate normally because the controls at the Front Standard are in their normal positions.
- c. The turbine will immediately trip because the Emergency Trip Oil (ETO) header becomes depressurized
- d. The turbine will immediately overspeed and trip.

All Questions Key

Details for Question Number: 30

Answer: c

References:

8.A.9-1, Turbine Test Weekly (Rev 27); pgs 46 - 47
MHC Reference Text (Rev 3); pgs 10-11

Provided References:

None

Explanation:

Not clearing the trip condition prior to restoring the switch to its normal position will immediately drain the ETO, causing the Steam Admission valves to close and the turbine to trip immediately.

Comments:

Modified - TADS # 175

Objective: O-RO-02-05-04 EO 23

K/A: 241000A312

Question Source: Bank Modified

10CFR Ref: 41.7

Difficulty Level: 3.0

Exam Level: RO

Cognitive Level: Comprehension-Analysis

Importance: 2.9

Tier: 2 **Group:** 2

All Questions Key

Question Number: 31

While taking the 'C' Condensate pump switch to START, you observe the red light above the pump start switch flicker on and then off (and the green light flicker off and then on), followed by a "CONDENSATE PUMP C OVERLOAD" alarm annunciation.

These indications could be caused by closing the condensate pump breaker with:

- a. the pump seized.
- b. the pump rotor sheared.
- c. the pump suction valve closed.
- d. the pump discharge valve closed.

All Questions Key

Details for Question Number: 31

Answer: a

References:

O-RO-01-04-04, Pumps (Rev 3); pg 38

O-RO-01-04-05, Motors and Generators (Rev 3); pgs 49-50

Provided References:

None

Explanation:

A pump that has a seized bearing or shaft will try to develop sufficient torque to overcome the seizing, thus drawing excessive current and tripping the breaker on high current. This will give the operator the OVERLOAD alarm.

Comments:

Objective: O-RO-02-04-02 EO 9.a

K/A: 256000A407

Question Source: New

10CFR Ref: 41.7

Difficulty Level: 3.0

Exam Level: RO

Cognitive Level: Comprehension-Analysis

Importance: 2.9

Tier: 2 **Group:** 2

All Questions Key

Question Number: 32

The following conditions exist:

- A leak exists in the 'A' RHR pump suction line
- Level in 'A' RHR quad is 2" and slowly rising
- Reactor water level is -40" and rising slowly with RCIC injecting.
- RBIS has initiated
- No other leaks have been identified
- All radiation levels are normal

Based on these conditions, you would be required:

- a. to maintain the Reactor Building ventilation in an isolated condition.
- b. to maintain ventilation in an isolated condition until you can restore and maintain reactor water level $> +12''$.
- c. to reset RBIS. This would require bypassing interlocks at panels C915 and C917.
- d. to reset RBIS. This would require bypassing interlocks in the Cable Spreading Room at panels C941/C942

All Questions Key

Details for Question Number: 32

Answer: d

References:

EOP-04, Secondary Conainment Control
5.3.21, Bypassing Selected Interlocks (Rev 18); Attachment 13

Provided References:

EOP-04 w/o entry conditions

Explanation:

Per EOP-04, Secondary Containment Control override, RBIS can be reset if RBIS has isolated, Refuel Exhaust rad levels are < 16mR/hr, no primary system is discharging into secondary containment, and no high rad levels exist in the RB. Since water level is < 12", there is a RBIS initiation signal present that would have to be bypassed per 5.3.21, Bypassing Selected Interlocks. This would be accomplished from the Cable Spreading Room.

Comments:

Objective: O-RO-03-04-06 EO11.b

K/A: 290001G2130

Question Source: New

10CFR Ref: 41.7

Difficulty Level: 3.5

Exam Level: RO

Cognitive Level: Comprehension-Analysis

Importance: 3.9

Tier: 2 **Group:** 2

All Questions Key

Question Number: 33

The TIP system 4-way connector allows _____ (1) _____ for the purpose of _____ (2) _____.

- a. (1) each TIP detector to be admitted to a central TIP tube
(2) calibration.
- b. (1) each TIP detector to be admitted to any TIP tube
(2) calibration.
- c. (1) each TIP detector to be admitted to a central TIP tube
(2) redundancy
- d. (1) each TIP detector to be admitted to any TIP tube
(2) redundancy.

All Questions Key

Details for Question Number: 33

Answer: a

References:

TIP Reference Text (Rev 1); pg 13

Provided References:

None

Explanation:

The 4-way connector allows each of the 4 TIP detectors to enter a central TIP tube for cross – calibration between the detectors. Each of the other TIP tubes can only be accessed by a specific TIP detector.

Comments:

Modified - TADS 5838

Objective: O-RO-02-07-08 EO 2,j

K/A: 290002K119

10CFR Ref: 41.2

Exam Level: RO

Importance: 2.5

Tier: 2 **Group** 2

Question Source: Bank Modified

Difficulty Level: 2.0

Cognitive Level: Memory - Fundamental

All Questions Key

Question Number: 34

A male Mechanical Maintenance person is being sent out on a job in a High Radiation Area. The dose rate in the area of the job is 300 mRem/hr. The job is not part of an emergency situation and is expected to take 2 hours. The person's exposure history to date for the year is 1800 mRem.

Which of the following is a true statement?

- a. The operator will not exceed either his administrative limit or his federal limit during the course of the job.
- b. The operator will exceed his administrative limit during the course of the job if his limit is not extended. The federal level will not be exceeded.
- c. The operator has already exceeded his administrative limit, and must have the limit extended. The federal limit will not be exceeded.
- d. The operator will exceed both his administrative limit and his federal limit during the course of the job.

All Questions Key

Details for Question Number: 34

Answer: b

References:

1.3.114, Conduct of Radiological Operations (Rev 16); pgs 17-18

Provided References:

None

Explanation:

The administrative Dose Control Level at Pilgrim Station is 2 Rem/year, the federal limit is 5 Rem/year. Since the dose over the course of the job is 600mRem (300mRem/hr * 2 hrs), the exposure history to date will be 2400mRem (2.4Rem) at the end of the job. Thus the admin limit is exceeded, and the federal is not.

Comments:

INPO Bank # 774

Objective: O-NL-05-02-01 EO 8, 12

K/A: G234

Question Source: Bank Modified

10CFR Ref: 45.10

Difficulty Level: 2.5

Exam Level: RO

Cognitive Level: Memory - Fundamental

Importance: 2.5

Tier: 3 **Group**

All Questions Key

Question Number: 35

A major LOCA is in progress which has resulted in fuel cladding damage. The vessel is depressurized and all RHR and Core Spray pumps are just able to maintain RPV level at the top of the active fuel. CHRMS readings for both the torus and drywell are beginning to rise significantly. There is a leak of unknown origin in the CRD quad. CRD quad level is 3" and rising slowly.

The proper configuration of the Reactor Building floor drain sump pumps for this condition is:

- a. running in AUTO.
- b. running in MANUAL without regard to the source of the leak.
- c. running in MANUAL as long as the water is not from a primary system
- d. not running and breaker open.

All Questions Key

Details for Question Number: 35

Answer: d

References:

O-RO-03-04-06 (Rev 4); pg IG-12

Provided References:

None

Explanation:

The basis of this action in the override of EOP-04, Secondary Containment Control is: If the Rx building sumps could be contaminated, opening the breakers for the RX building sump pumps will preclude pumping highly contaminated water outside the secondary containment.

Comments:

Modified - TADS # 6626

Objective: O-RO-03-04-06 EO 11.b

K/A: G2310

Question Source: Bank Modified

10CFR Ref: 43.4

Difficulty Level: 3.5

Exam Level: RO

Cognitive Level: Comprehension-Analysis

Importance: 2.9

Tier: 3 **Group**

All Questions Key

Question Number: 36

EOP-02 has been entered due to an RPS electrical failure. EOP-02 has you verify recirculation runback to minimum prior to tripping the recirculation pumps. The reason for this is to prevent:

- a. MSIV closure.
- b. a turbine trip.
- c. a RFP trip.
- d. a rapid pressure increase which may lift a relief valve.

All Questions Key

Details for Question Number: 36

Answer: b

References:

O-RO-03-04-04 (Rev 5); pgs IG 57-59

Provided References:

None

Explanation:

In order to effect a rapid power reduction, if the turbine is on-line, the recirculation pumps are run back to minimum speed. This increases the void production in the core, which increases the slowing down length of the neutrons, increases the probability of resonance capture and thereby adds negative reactivity to shutdown the reactor. If the recirc pumps are tripped from too high of a speed, a turbine trip could occur.

Comments:

TADS # 5597

Objective: O-RO-03-04-04 EO 17

K/A: G2418

10CFR Ref: 41.10

Exam Level: RO

Importance: 2.7

Tier: 3 **Group**

Question Source: Bank

Difficulty Level: 2.5

Cognitive Level: Comprehension-Analysis

All Questions Key

Question Number: 37

Given the following conditions:

- A severe reactor pressure regulator malfunction occurs.
- You depress the manual scram pushbuttons, place the mode switch in shutdown, and initiate ARI.
- The C905 Group Scram Logic lights are still lit.
- The Blue Scram Lights on the full core display are all extinguished.
- The SPVAH PRESSURE LO alarm has NOT come in.

You have only one operator available outside the Main Control Room and have a choice between having this operator vent the scram air header or vent CRD overpiston areas.

In accordance with PNPS 5.3.23, "Alternate Rod Insertion, you would have the operator vent:

- a. the overpiston area of CRDs since the plant conditions indicate a hydraulic ATWS.
- b. the overpiston area of CRDs since the plant conditions indicate an electrical ATWS.
- c. the scram air header since the plant conditions indicate a hydraulic ATWS.
- d. the scram air header since the plant conditions indicate an electrical ATWS.

All Questions Key

Details for Question Number: 37

Answer: d

References:

PNPS 5.3.23, Alternate Rod Insertion (Rev 21); pgs 6, 9 of 25

Provided References:

None

Explanation:

The given indications should tell the operator that an electrical ATWS exists (see PNPS 5.3.23 page 6.) Venting the SPVAH header is effective against an electrical ATWS. While venting overpiston area would still insert the control rods, it would take much longer (would have to be done 145 times, once per HCU.) Additionally, based on the conditions given, PNPS 5.3.23 would diagnose this as an electrical ATWS and would direct venting the SPVAH header.

Comments:

Objective: O-RO-03-04-04 EO 24

K/A: G2423

Question Source: New

10CFR Ref: 43.5

Difficulty Level: 4.0

Exam Level: RO

Cognitive Level: Comprehension-Analysis

Importance: 2.8

Tier: 3 **Group**

All Questions Key

Question Number: 38

EOP-27, Emergency RPV Depressurization Failure-To-Scram is in progress. You are at the P-12 “stop-sign” awaiting pressure to drop below 75 psig with 4 SRVs open. One of the SRVs then fails closed. Torus air space pressure is 0 psig.

Under these conditions you would enter EOP-27 at step P-4:

- a. immediately.
- b. after reactor pressure has lowered to 75 psig.
- c. after steps P-12 through P-17 of EOP-27 are complete.
- d. only if you determine that pressure will not drop below 75 psig with 3 SRVs open.

All Questions Key

Details for Question Number: 38

Answer: a

References:

O-RO-03-04-02 (Rev 6); IG-33

Provided References:

None

Explanation:

Per the EOP usage lesson: When an override is applicable to a series of steps, the operator must consider the override continuously while executing those steps to which it is applicable and take the specified override action any time the contingent conditions exist while executing those steps.

Comments:

Objective: O-RO-03-04-02 EO 7

K/A: G2419

10CFR Ref: 41.10

Exam Level: RO

Importance: 2.7

Tier: 3 **Group**

Question Source: New

Difficulty Level: 2.5

Cognitive Level: Comprehension-Analysis

All Questions Key

Question Number: 39

An APRM downscale alarm has come in and APRM 'A' indicates downscale on the 905 panel. The BOP operator is sent to the APRM cabinet to investigate. While attempting to check LPRM inputs, the BOP operator inadvertently positions the APRM 'A' mode switch to the POWER position.

This action will cause:

- a. Panel 937 alarms only
- b. Panel 937 alarms and C905 alarms only.
- c. Panel 937 alarms and C905 alarms, rod block.
- d. Panel 937 alarms and C905 alarms, rod block and ½ scram.

All Questions Key

Details for Question Number: 39

Answer: c

References:

APRM Reference Text (Rev 3); pg 12

Provided References:

None

Explanation:

An inop trip is generated when an APRM module's mode switch on panel 937 is not in OPERATE. An inop trip generates both a scram signal and a rod block signal, illuminates a red hi-hi trip/inop light on 905 and white inop light on panel 937.

Comments:

Objective: O-RO-02-07-04 EO 9

K/A: 215005A102

10CFR Ref: 41.5

Exam Level: RO

Importance: 3.9

Tier: 2 **Group** 1

Question Source: New

Difficulty Level: 3.0

Cognitive Level: Memory - Fundamental

All Questions Key

Question Number: 40

During a low water level condition, RCIC has failed to initiate automatically. The CRS has directed you to start RCIC manually. You are operating FIC -1340-1 to control Turbine RPM which is currently indicating 1300 RPM. At this speed, which of the following is a concern with regard to RCIC operation?

- a. Inadequate cooling flow to the lube oil cooler.
- b. Inadequate cooling flow to the barometric condenser.
- c. Insufficient oil pressure to the control system and bearings.
- d. Water hammer in the exhaust line.

All Questions Key

Details for Question Number: 40

Answer: d

References:

2.2.22.5, RCIC Injection and Pressure Control (Rev 10) ; pg 10

Provided References:

None

Explanation:

RCIC turbine should not be run below 2000 RPM since intermittent exhaust flow will cause water hammer in the exhaust line. The only other precaution is to avoid running the turbine below 1000 RPM to ensure adequate oil pressure to the control oil system and bearing lubrication.

Comments:

Objective: O-RO-02-09-04 EO 7

K/A: 217000K506

Question Source: New

10CFR Ref: 41.5

Difficulty Level: 2.5

Exam Level: RO

Cognitive Level: Comprehension-Analysis

Importance: 2.7

Tier: 2 **Group:** 1

All Questions Key

Question Number: 41

While withdrawing a control rod during approach to criticality, an RMCS timer malfunction alarm is received and the red timer malfunction light on C905 energizes.

This would cause ____ (1) _____. Other than scrambling the reactor, movement of control rods under these conditions ____ (2) _____.

- a. (1) the rod select relays to deselect the selected rod as indicated by the white select light on the full core display de-energizing.
(2) is possible only using the EMERGENCY IN switch.
- b. (1) the rod select relays to deselect the selected rod as indicated by the white select light on the full core display de-energizing.
(2) would require that the timer malfunction be repaired.
- c. (1) a control rod withdraw block alarm to come in and the white rod out permissive light to de-energize.
(2) is possible only using the EMERGENCY IN switch.
- d. (1) a control rod withdraw block alarm to come in and the white rod out permissive light to de-energize.
(2) would require that the timer malfunction be repaired.

All Questions Key

Details for Question Number: 41

Answer: b

References:

ARP C905L (Rev 20), C-4

Provided References:

None

Explanation:

The timer malfunction will cause the white select light on the full core display to de-energize, you will be unable to select any control rod. Rod motion cannot be performed (other than by scram) if the timer is malfunctioning, therefore it must be repaired.

Comments:

November 2000 NRC Exam #68

Objective: O-RO-06-02-08 EO 5

K/A: 201002A201

10CFR Ref: 41.5

Exam Level: RO

Importance: 2.7

Tier: 2 **Group 2**

Question Source: Bank Modified

Difficulty Level: 3.5

Cognitive Level: Comprehension-Analysis

All Questions Key

Question Number: 42

Consider the following situations:

	<u>Situation 1</u>	<u>Situation 2</u>
Reactor power:	82%	72%
'A' Recirc pump speed:	55%	36%
'B' Recirc pump speed:	42%	50%

When would an LCO entry be required per Technical Specifications?

- a. Neither situation
- b. Situation 1 only
- c. Situation 2 only
- d. Both situations

All Questions Key

Details for Question Number: 42

Answer: b

References:

Tech specs 3.6.F.1

Provided References:

Tech Specs

Explanation:

Per Tech Specs, pump speeds shall be maintained within 10% of each other when power level is greater than 80% and within 15% of each other when power level is less than or equal to 80%. Situation 1 is greater than 80%, but the mismatch is 13% so LCO entry is required. Situation 2 is less than 80%, but mismatch is only 14% percent so LCO entry is not required.

Comments:

Objective: O-RO--2-06-02 EO 39

K/A: 202002G2133

Question Source: New

10CFR Ref: 43.2

Difficulty Level: 3.0

Exam Level: RO

Cognitive Level: Memory - Fundamental

Importance: 3.4

Tier: 2 **Group:** 2

All Questions Key

Question Number: 43

The reactor is initially operating at 92% power. A control rod in a high power region of the core is selected and withdrawn. While withdrawing the rod, a RBM HI rod block is received.

The rod block initiated at ____ (1) _____. In order to continue withdrawing this rod, you are required to verify that MCPR is \geq ____ (2) _____.

- a. (1) 110% of reference level
(2) 1.41
- b. (1) 110% of reference level
(2) 1.72
- c. (1) 115% of reference level
(2) 1.41
- d. (1) 115% of reference level
(2) 1.72

All Questions Key

Details for Question Number: 43

Answer: a

References:

RBM Reference Text (Rev 5); pg 16
Tech Spec Table 3.2.C-1

Provided References:

Tech Specs

Explanation:

Since reactor power > 82%, the trip setting is 110% of reference level. RBM operability is required in the RUN mode in the presence of a limiting rod pattern with reactor power greater than the RBM low power setpoint. A limiting rod pattern exists when MCPR < 1.41 for reactor power \geq 90%.

Comments:

Objective: O-RO-02-07-05 EO 11
O-RO-02-07-05 EO 14

K/A: 215002A201

Question Source: New

10CFR Ref: 41.5

Difficulty Level: 3.0

Exam Level: RO

Cognitive Level: Memory - Fundamental

Importance: 3.3

Tier: 2 **Group:** 2

All Questions Key

Question Number: 44

The plant is depressurizing due to a leak. Both Reactor Recirc Pumps are tripped. All available makeup to the RPV is being used and indicated level is remaining constant. Pressure has decreased from 950 psig to 550 psig.

Since indicated level on the fuel zone level instrument has remained constant during this transient, actual level in the vessel would ____ (1) ____ . If indicated level is now $-70''$, actual level at the current pressure is ____ (2) ____ .

- a. (1) rise
(2) -19
- b. (1) lower
(2) +7
- c. (1) rise
(2) +7
- d. (1) lower
(2) -19

All Questions Key

Details for Question Number: 44

Answer: d

References:

2.2.80, Reactor Vessel Level, Temperature and Internal Pressure Instrumentation (Rev 37), Attachment 8

Provided References:

Density Compensator - Operator Aid

Explanation:

As the temperature / pressure of the vessel water inventory lowers, the density of the water in the vessel will increase, thus actual water level will lower. Using the compensator correctly will give a current level of -19”.

Comments:

Objective: O-RO-02-06-01 EO 5.I

K/A: 216000A211

Question Source: New

10CFR Ref: 41.5

Difficulty Level: 3.0

Exam Level: RO

Cognitive Level: Comprehension-Analysis

Importance: 3.2

Tier: 2 **Group 2**

All Questions Key

Question Number: 45

480 VAC bus B-17 has been lost due to an electrical fault. Which RHR loop(s) can be aligned for torus cooling from the Main Control Room?

- a. Neither 'A' nor 'B' is available.
- b. 'A' loop is available.
- c. 'B' loop is available.
- d. Both 'A' and 'B' loops are available.

All Questions Key

Details for Question Number: 45

Answer: c

References:

RHR Reference Text (Rev 7), pg 66

Provided References:

None

Explanation:

B-17 causes a loss of power to the 34A and 36A valves, preventing the ability to remotely operate these valves for the 'A' torus cooling lineup.

Comments:

Objective: O-RO-02-09-01 EO 15.a

K/A: 219000K201

Question Source: New

10CFR Ref: 41.7

Difficulty Level: 2.5

Exam Level: RO

Cognitive Level: Memory - Fundamental

Importance: 2.5

Tier: 2 **Group:** 2

All Questions Key

Question Number: 46

WHICH ONE (1) of the following defines the purpose of the stabilizing valves in the CRD Hydraulic System?

- a. Provide a path from the cooling water header to the exhaust header to return excess cooling water.
- b. Direct drive water to the CRD and exhaust water from the CRD to produce rod motion.
- c. Maintain hydraulic system flow and therefore drive water header pressure constant during rod motion.
- d. Control drive water pressure at 260 psig above reactor pressure under normal system flow conditions.

All Questions Key

Details for Question Number: 46

Answer: c

References:

CRDH Reference Text (Rev 2); pg 16

Provided References:

None

Explanation:

When an individual HCU is to be operated, the applicable HCU valves open and the stabilizing valve closes. The system flow that was going through the stabilizing valve now flows through the HCU to the CRDM. The drive water flow will remain constant as total system flow has not changed.

Comments:

INPO # 6980

Objective: O-RO-02-06-11 EO 2.1

K/A: 201001K402

10CFR Ref: 41.7

Exam Level: RO

Importance: 2.6

Tier: 2 **Group:** 2

Question Source: Bank

Difficulty Level: 3.0

Cognitive Level: Memory - Fundamental

All Questions Key

Question Number: 47

During the performance of a procedure with place-keeping blanks at the end of each step, you have come to a step that does not need to be done and will not affect the outcome of the procedure. How are you required to handle this situation per 1.3.34, Conduct of Operations?

- a. The blank shall be left blank. No supervisor approval is required.
- b. The blank shall be left blank. CRS/SM shall approve the omission by initialing the step.
- c. The blank shall be marked 'N/P'. No supervisor approval is required.
- d. The step shall be marked 'N/P'. CRS/SM shall approve the omission by initialing the step.

All Questions Key

Details for Question Number: 47

Answer: d

References:

1.3.34, Conduct of Operations (Rev 84); pg 46

Provided References:

None

Explanation:

1.3.34, Conduct of Operations states that if it is inappropriate to perform a specified step, the step may be omitted or “not performed” and be marked as “N/P” provided the CRS/SM concur with the decision and initial the step, and the outcome of the procedure is not affected.

Comments:

Objective: O-RO-06-06-01 EO 62

K/A: G2118

Question Source: New

10CFR Ref: 45.12

Difficulty Level: 2.5

Exam Level: RO

Cognitive Level: Memory - Fundamental

Importance: 2.9

Tier: 3 **Group**

All Questions Key

Question Number: 48

The plant is operating at 100% power when a loss of bus A5 occurs.

In accordance with PNPS 2.4.151, "Loss of Electrical Bus A-5", which ONE of the following is an immediate action of this condition?

- a. Commence a normal plant shutdown.
- b. Verify started or start the 'B' TBCCW pump.
- c. Place steam tunnel cooling in service as necessary to maintain steam tunnel below 170 degrees.
- d. Reduce reactor power using 'B' recirc pump as necessary to control steam tunnel temperature.

All Questions Key

Details for Question Number: 48

Answer: b

References:

2.4.151, Loss of Electrical Bus A5 (Rev 4); pg 3

Provided References:

None

Explanation:

Verifying started or starting the 'B' TBCCW pump is an immediate action of 2.4.151, Loss of A5

Comments:

Objective: None Identified

K/A: G2120

10CFR Ref: 41.10

Exam Level: RO

Importance: 4.3

Tier: 3 **Group**

Question Source: New

Difficulty Level: 2.5

Cognitive Level: Memory - Fundamental

All Questions Key

Question Number: 49

RHR has been placed in Torus cooling and is expected to be in service for 24 hours.

Assuming all other required systems are determined to be operable, this requires a ____ (1) ____ LCO entry for LPCI. Information about actions required if the LCO Required Action Time is not met can be found in the ____ (2) ____.

- a. (1) 72 hours
(2) eSOMS LCOTR Log
- b. (1) 72 hours
(2) Pilgrim Station Morning Report
- c. (1) 7 day
(2) eSOMS LCOTR Log
- d. (1) 7 day
(2) Pilgrim Station Morning Report

All Questions Key

Details for Question Number: 49

Answer: c

References:

1.3.34.2, Limiting Conditions for Operation (Rev 12); pgs 8, 11
2.2.19, Residual Heat Removal (Rev 83); pg 30
TS 3.5.A

Provided References:

Tech Specs

Explanation:

Placing torus cooling in service requires a LPCI LCO which is a 7 day LCO which will be tracked in eSOMS.

Comments:

Objective: O-RO-06-01-01 EO 9

K/A: G2223

10CFR Ref: 43.2

Exam Level: RO

Importance: 2.6

Tier: 3 **Group**

Question Source: New

Difficulty Level: 3.0

Cognitive Level: Comprehension-Analysis

All Questions Key

Question Number: 50

In accordance with ENN-DC-136, "Temporary Alterations", all of the following are methods used for controlling Temporary Alterations EXCEPT

- a. Operations Dept. Standing Order
- b. Work Request
- c. Procedure
- d. Temporary Alteration Package

All Questions Key

Details for Question Number: 50

Answer: a

References:

ENN-DC-136, Temporary Alterations (Rev 6); pg 10

Provided References:

None

Explanation:

The Operations Department Standing Order is the only one given that is not allowable for tracking temporary alterations.

Comments:

Objective: O-RO-06-06-01 EO 34

K/A: G2211

Question Source: New

10CFR Ref: 43.3

Difficulty Level:

Exam Level: RO

Cognitive Level: Memory - Fundamental

Importance: 2.5

Tier: 3 **Group**

All Questions Key

Question Number: 51

You are starting the Recirculation system as directed by the startup procedure. After verifying pre-startup checks, you start the 'A' Recirc pump.

The field breaker will close ____ (1) ____ seconds after the drive motor breaker closes. When the field breaker closes, MG set speed will ____ (2) ____.

- a. (1) 4
(2) rise
- b. (1) 4
(2) lower
- c. (1) 9
(2) rise
- d. (1) 9
(2) lower

All Questions Key

Details for Question Number: 51

Answer: b

References:

Recirculation System Reference Text (Rev 5); pg 16
2.2.84, Reactor Recirculation System (Rev 74); pg 35

Provided References:

None

Explanation:

The pump initially starts at a high speed, and then lowers once the field is applied. 9 seconds is the time delay for the ATWS field breaker trip on low-low water level.

Comments:

Objective: O-RO-02-06-02 EO 17

K/A: G221

10CFR Ref: 45.1

Exam Level: RO

Importance: 3.7

Tier: 3 **Group**

Question Source: New

Difficulty Level: 3.0

Cognitive Level: Memory - Fundamental

All Questions Key

Question Number: 52

With the plant initially operating at approximately 100% power, the following parameter changes are noted:

- Net Mwe lowers from 685 to 630
- The Turbine Control Valves throttle closed
- Reactor pressure lowers from 1010 psig to 998 psig
- Core Plate d/p lowers from 12 psid to 10 psid
- Core Flow rises from 58 Mlbm/hr to 59 Mlbm/hr

These parameter changes are indicative of:

- a. inadvertent SRV opening.
- b. an upscale failure of a recirculation flow controller.
- c. jet pump failure.
- d. EPR failure.

All Questions Key

Details for Question Number: 52

Answer: c

References:

INPO OE from 1/9/02
2.4.23, Rev 13, Page 2 of 5

Provided References:

None

Explanation:

Increasing core flow and lowering power would only be caused by a failed jet pump. This data set is derived roughly from Quad Cities jet pump failure data from January 2002.

Comments:

Objective: O-RO-02-06-02 EO 31.a and 35.a

K/A: 295001A205

Question Source: New

10CFR Ref: 41.10

Difficulty Level: 3.0

Exam Level: RO

Cognitive Level: Comprehension-Analysis

Importance: 3.1

Tier: 1 **Group:** 1

All Questions Key

Question Number: 53

Given the following conditions:

- A Loss of Off-Site Power, a design basis LOCA and a lockout of Bus A-5 occur simultaneously.
- Drywell pressure rises to 25 psig.
- Reactor pressure has lowered to 50 psig.

The EOPs required to be entered are _____(1)_____. You are directed to verify automatic initiations and isolations. _____(2)_____ will be injecting to the RPV.

- a. (1) EOP-01 only
(2) HPCI, RCIC, 2 RHR Pumps and 1 Core Spray Pump
- b. (1) EOP-01 only
(2) 2 RHR Pumps and 1 Core Spray Pump only
- c. (1) EOP-01 and EOP-03 only
(2) HPCI, RCIC, 2 RHR Pumps and 1 Core Spray Pump
- d. (1) EOP-01 and EOP-03 only
(2) 2 RHR Pumps and 1 Core Spray Pump only

All Questions Key

Details for Question Number: 53

Answer: d

References:

EOP-01 and EOP-01 entry conditions
TS Table 3.2.C

Provided References:

EOP-01 and EOP-03 minus entry conditions
TS

Explanation:

With reactor pressure at 50 psig, RCIC and HPCI would be isolated. With drywell pressure of 25 psig, EOP-01 and EOP-03 would have their entry condition satisfied.

Comments:

Objective: O-RO-03-04-03 EO 2

K/A: 295003G2401

Question Source: New

10CFR Ref: 41.10

Difficulty Level: 3.0

Exam Level: RO

Cognitive Level: Comprehension-Analysis

Importance: 4.3

Tier: 1 **Group:** 1

All Questions Key

Question Number: 54

A loss of bus D-4 occurs. Which ONE of the following describes the effect on the 'A' Core Spray Pump?

If running, the 'A' Core Spray Pump _____(1)_____ and if not running, the pump _____(2)_____.

- a. (1) will trip
(2) cannot be started from the Control Room
- b. (1) cannot be tripped from the Control Room
(2) cannot be started from the Control Room but will auto start if a start signal is generated
- c. (1) cannot be tripped from the Control Room
(2) will not respond to an auto start signal but can be manually started from the Control Room
- d. (1) cannot be tripped from the Control Room
(2) will not respond to an auto start signal and cannot be started from the Control Room

All Questions Key

Details for Question Number: 54

Answer: d

References:

5.3.11, Loss of Essential DC Bus D16 or D4 and D36, (Rev 33); pg 3 of 20

Provided References:

None

Explanation:

A loss of D-4 will cause the 'A' ECCS pumps to fail to start and to keep running if currently running.

Comments:

Objective: O-RO-02-09-02 EO 7.f

K/A: 295004A103

10CFR Ref: 41.7

Exam Level: RO

Importance: 3.4

Tier: 1 **Group:** 1

Question Source: New

Difficulty Level: 3.0

Cognitive Level: Memory - Fundamental

All Questions Key

Question Number: 55

Given the following conditions:

- A manual reactor scram is inserted.
- The 'B' Backup Scram Valve fails to energize.
- The 'A' Backup Scram Valve operates normally.

Under these conditions, the Main Turbine _____(1)_____ automatically trip. The Backup Scram Valves _____(2)_____ depressurize the scram air header.

- a. (1) will
(2) will
- b. (1) will
(2) will not
- c. (1) will not
(2) will
- d. (1) will not
(2) will not

All Questions Key

Details for Question Number: 55

Answer: a

References:

RPS Ref Text (Rev 2); pg 11 of 40

Provided References:

None

Explanation:

The 'A' Backup Scram Valve operates a contact to start a 30 second timer which will then trip the turbine. Due to a check valve in the line, either Backup Scram Valve energizing will depressurize the scram air header.

Comments:

Objective: O-RO-02-07-07 EO 3.f

K/A: 295005K201

Question Source: New

10CFR Ref: 41.7

Difficulty Level: 3.0

Exam Level: RO

Cognitive Level: Comprehension-Analysis

Importance: 3.8

Tier: 1 **Group:** 1

All Questions Key

Question Number: 56

The plant has been operating at 100% power for the past year. A half scram is in effect on RPS Channel B when APRM 'A' spikes high causing a full scram.

Approximately 10 seconds after the scram, decay heat will be approximately ____ (1) ____ of full power. This heat will be removed via the ____ (2) ____.

- a. (1) 7%
(2) SRVs
- b. (1) 7%
(2) Bypass Valves
- c. (1) 14%
(2) SRVs
- d. (1) 14%
(2) Bypass Valves

All Questions Key

Details for Question Number: 56

Answer: b

References:

O-RO-01-02-08 (Rev 3); pg 29 of 34

Provided References:

None

Explanation:

Power level will be approximately 7% 8-10 seconds after a scram. SRV lift points will not be approached. Bypass valves will remove this heat.

Comments:

Objective: O-RO-01-02-08 EO 31.1 and 31.c

K/A: 295006K101

Question Source: New

10CFR Ref: 41.8

Difficulty Level: 3.0

Exam Level: RO

Cognitive Level: Comprehension-Analysis

Importance: 3.7

Tier: 1 **Group:** 1

All Questions Key

Question Number: 57

Given the following conditions:

- A fire requires evacuation of the Control Room
- PNPS 2.4.143, "Shutdown From Outside the Control Room" is in progress
- RCIC is being operated from the ASP in level control
- RHR is being operated from the ASP in torus cooling
- Torus air space pressure increases from 0 psig to 1 psig.

This would cause an increase in the suction pressure of the _____ (1) _____. Torus pressure _____ (2) _____ be read in the plant with normally installed instruments.

- a. (1) RHR pump that is in torus cooling
(2) can
- b. (1) RHR pump that is in torus cooling
(2) cannot
- c. (1) RCIC pump
(2) can
- d. (1) RCIC pump
(2) cannot

All Questions Key

Details for Question Number: 57

Answer: b

References:

2.4.143, Shutdown From Outside Control Room (Rev 29); pg 25 of 106
Primary Containment Reference Text (Rev 2); pg 18 of 38

Provided References:

None

Explanation:

RHR pumps but not RCIC will be taking a suction from the suppression pool. Torus pressure can be read with a temporary guage which can be installed but no in plant installed instruments read torus pressure.

Comments:

Objective: O-RO-02-08-01 EO 10

K/A: 295016A207

Question Source: New

10CFR Ref: 41.10

Difficulty Level: 2.5

Exam Level: RO

Cognitive Level: Comprehension-Analysis

Importance: 3.2

Tier: 1 **Group:** 1

All Questions Key

Question Number: 58

The plant is operating at power when a leak occurs on the cooling water line to the 'A' CRD Pump Oil Cooler. The operator is directed to attempt to isolate this leak from the Main Control Room.

The operator will:

- a. not be able to isolate this leak from the Main Control Room since there are no valves that can be operated from the Main Control Room that will perform this function.
- b. can isolate the leak by closing the 'A' RBCCW loop Non-essential block valves which will also isolate flow to the 'A' Fuel Pool Cooling Heat Exchanger.
- c. can isolate the leak by closing the 'B' RBCCW loop Non-essential block valves which will also isolate flow to the 'B' Fuel Pool Cooling Heat Exchanger.
- d. can isolate the leak by closing the 'B' RBCCW loop Non-essential block valves which will also isolate flow to the HPCI Area Cooling Coils.

All Questions Key

Details for Question Number: 58

Answer: c

References:

2.4.42, Loss of RBCCW (Rev 22), Attachment 2

Provided References:

None

Explanation:

Both CRD pump oil coolers are off the B loop of RBCCW non-essential loop which also supplies the B Fuel Pool Cooling HX.

Comments:

Objective: O-RO-02-02-06 EO 2

K/A: 295018K201

Question Source: New

10CFR Ref: 41.7

Difficulty Level: 3.5

Exam Level: RO

Cognitive Level: Comprehension-Analysis

Importance: 3.3

Tier: 1 **Group:** 1

All Questions Key

Question Number: 59

Given the following conditions:

- The plant is depressurized with coolant temperature at 150 degrees F.
- MO-1001-50 Valve (Shutdown Cooling Suction) fails closed and cannot be opened by any means.
- Both Reactor Recirc Pumps are tagged out.

Under these conditions, PNPS 2.4.25, "Loss of Shutdown Cooling" requires reactor water level be:

- a. maintained below the Group I isolation setpoint to ensure that Bypass Valves are available for use in the event that the plant becomes pressurized.
- b. maintained below the HPCI Hi Level trip point to ensure that HPCI is available for use in the event that the plant becomes pressurized.
- c. raised above +60 inches to promote natural circulation.
- d. raised above +60 inches in preparation for initiating cooling by feed and bleed.

All Questions Key

Details for Question Number: 59

Answer: c

References:

PNPS 2.4.25, Loss of Shutdown Cooling (Rev 23); pg 4 of 10

Provided References:

None

Explanation:

Per PNPS 2.4.25, Loss of Shutdown Cooling if forced the reactor is NOT pressurized or if no heat sink is available, you must raise level above +60 inches in order to promote natural circulation or start a recirc pump to promote natural circulation.

Comments:

Objective: O-RO-02-09-01 TO 19

K/A: 295021K104

10CFR Ref: 41.8

Exam Level: RO

Importance: 3.6

Tier: 1 **Group** 1

Question Source: New

Difficulty Level: 3.0

Cognitive Level: Comprehension-Analysis

All Questions Key

Question Number: 60

Given the following conditions:

- The plant is in a refueling outage with a fuel move in progress.
- The 'A' Refuel Floor Radiation Monitor has failed downscale. No actions have been taken to address this failure.
- At time 0000 a fuel bundle is dropped and radiation levels on the refuel floor start to slowly rise.
- At time 0005 the B Refuel Floor Radiation Monitor reaches its Hi Trip Setpoint.
- At time 0010 the C Refuel Floor Radiation Monitor reaches its Hi Trip Setpoint.
- At time 0015 the D Refuel Floor Radiation Monitor reaches its Hi Trip Setpoint.

Under these conditions, an automatic start of SBTG due to Hi Refuel Floor Radiation levels:

- a. is effectively disabled due to the 'A' Refuel Floor Radiation Monitor being failed downscale.
- b. will occur at time 0005.
- c. will occur at time 0010.
- d. will occur at time 0015.

All Questions Key

Details for Question Number: 60

Answer: c

References:

PRM Ref Text (Rev 5); pg 30

Provided References:

None

Explanation:

The logic is such that a trip will occur if a) one channel in both trip system is upscale OR b) all 4 are downscale OR 3) both monitors in one channel are downscale and one monitor in the other channel is upscale

Comments:

Objective: O-RO-02-08-05 EO 10

K/A: 295023K203

10CFR Ref: 41.7

Exam Level: RO

Importance: 3.4

Tier: 1 **Group** 1

Question Source: New

Difficulty Level: 3.0

Cognitive Level: Comprehension-Analysis

All Questions Key

Question Number: 61

An air leak into the Main Condenser has resulted in the following:

- Increased Off Gas Flow
- Main Condenser Vacuum initially degrades but then stabilizes at a less desirable value.
- Hold up time in the 30 minutes Hold Up Volume is shortened.

Shortening the Hold up time reduces the effectiveness of the Hold Up Volume in performing its function of:

- a. allowing for decay of short-lived nuclides.
- b. allowing for decay of long-lived nuclides.
- c. preventing an explosive mixture by removing Oxygen
- d. preventing an explosive mixture by removing Hydrogen.

All Questions Key

Details for Question Number: 61

Answer: a

References:

AOG Reference Text (Rev 4); pg 15

Provided References:

None

Explanation:

The hold up volume allows for decay of short lived nuclides. Long lived nuclides are not held up long enough to significantly decay. The recombiners are the components which prevent a combustible mixture.

Comments:

Objective: O-RO-02-04-11 EO 3.g

K/A: 295002K104

10CFR Ref: 41.8

Exam Level: RO

Importance: 3.0

Tier: 1 **Group** 2

Question Source: New

Difficulty Level: 3.0

Cognitive Level: Memory - Fundamental

All Questions Key

Question Number: 62

An automatic reactor scram has occurred from power. WHICH ONE of the following describes the reason PNPS 2.1.6 directs placing the Mode Switch in SHUTDOWN as soon as possible?

- a. Allow verification of all rods in
- b. Provide a redundant automatic scram signal from APRM setdown.
- c. Allow draining the SDIVs.
- d. Prevent an inadvertent Group 1 isolation.

All Questions Key

Details for Question Number: 62

Answer: d

References:

2.1.6, Reactor Scram (Rev 53); pg 5

Provided References:

None

Explanation:

MSIVs close when the Mode Switch is in RUN and steam pressure is < 810 psig. Post scram, reactor pressure may initially drop below 810 psig due to cold feedwater injection..

Comments:

INPO #18247

Objective: O-RO-02-08-10 EO3

K/A: 295020AK201

10CFR Ref: 41.7

Exam Level: RO

Importance: 3.6

Tier: 1 **Group:** 2

Question Source: Bank

Difficulty Level: 3.0

Cognitive Level: Comprehension-Analysis

All Questions Key

Question Number: 63

Given the following conditions:

- The plant is operating at 90% power.
- SRVs are being tested.
- The 'A' Loop of RHR is in Torus Cooling.
- Torus temperature is 88 degrees F and continuing to rise.

The Shift Manager indicates that you are to operate Torus Cooling as necessary to maintain Torus temperature below 90 degrees F.

The reason the Shift Manager desires to maintain Torus temperature below 90 degrees F is that if torus temperature reaches 90 degrees F, you will be required to:

- a. begin continuously monitoring torus temperature and logging it every 5 minutes.
- b. terminate testing of SRVs.
- c. immediately commence a plant shutdown.
- d. immediately scram the reactor.

All Questions Key

Details for Question Number: 63

Answer: b

References:

TS 3.7.A.1

Provided References:

TS 3.7.A.1

Explanation:

Monitoring and logging torus temperature required when any heat is being added to torus.
Shutdown required if cannot restore to less than 80 degrees F within 24 hours.
Scram is required at 110 degrees F.
Termination of testing is required at 90 degrees F.
No reference to Tech Specs are given in the question since the Tech Specs are a provided reference.

Comments:

Objective: O-RO-02-08-01 EO 14.k

K/A: 295013K301

10CFR Ref: 41.5

Exam Level: RO

Importance: 3.6

Tier: 1 **Group** 2

Question Source: New

Difficulty Level: 3.0

Cognitive Level: Comprehension-Analysis

All Questions Key

Question Number: 64

Given the following conditions:

- An ATWS occurs and power oscillations commence.
- Attempts to inject SBLC are unsuccessful.
- Pressure is swinging between 900 psig and 1380 psig.
- Reactor water level is currently -25 inches and lowering.
- Torus bulk water temperature is 115 degrees F and rising.

At the present time, the _____(1)_____ has been exceeded. The Normal Operating Torus Water Temperature LCO of _____(2)_____ has also been exceeded.

- a. (1) Reactor Steam Dome Safety Limit but NOT the Reactor Water Level Safety Limit
(2) 80 degrees F.
- b. (1) Reactor Steam Dome Safety Limit and the Reactor Water Level Safety Limit
(2) 80 degrees F.
- c. (1) Reactor Steam Dome Safety Limit but NOT the Reactor Water Level Safety Limit
(2) 110 degrees F.
- d. (1) Reactor Steam Dome Safety Limit and the Reactor Water Level Safety Limit
(2) 110 degrees F.

All Questions Key

Details for Question Number: 64

Answer: a

References:

TS Safety Limits
TS 3.7.A.1

Provided References:

TS (But Not Bases)

Explanation:

Since level is maintained above +12 inches above TAF, the Reactor Water Level Safety Limit is not exceeded. Since pressure exceeded 1345, the RPV Pressure Safety Limit is exceeded. The normal TS limit for Torus Temperature is 80 degrees F. The 110 degrees F number is based on the requirement to scram the reactor at this point.

Comments:

Objective: O-RO-06-01-02 EO 1

K/A: 295015G2222

Question Source: New

10CFR Ref: 43.2

Difficulty Level: 3.5

Exam Level: RO

Cognitive Level: Comprehension-Analysis

Importance: 3.4

Tier: 1 **Group:** 2

All Questions Key

Question Number: 65

Following a major earthquake, the following conditions exist:

- Drywell pressure is 11 psig and rising
- Reactor pressure is 300 psig and lowering
- Reactor level is +20" and steady
- 'A' Core Spray is injecting
- RHR Pump A is not injecting but has been placed in torus cooling using the LPCI Override Switch
- RHR Pump B is not injecting but has been placed in torus spray using the LPCI Override Switch

Another tremor then occurs, causing the 'A' Core Spray pump to trip and reactor water level to rapidly lower to -200 inches. The RHR system will realign to:

- a. start injecting and secure spray/cooling.
- b. start injecting and maintain spray/cooling.
- c. maintain not injecting and secure spray/cooling.
- d. maintain not injecting and maintain spray/cooling .

All Questions Key

Details for Question Number: 65

Answer: c

References:

RHR Reference Text (Rev 7); pg 59

Provided References:

None

Explanation:

Once overridden, the containment cooling valves will not close automatically until 2/3 core coverage is reached. The injection valves will only open automatically when the LPCI initiation signal is first received.

Comments:

Objective: O-RO-02-09-01 EO14

K/A: 203000A305

10CFR Ref: 41.7

Exam Level: RO

Importance: 4.4

Tier: 2 **Group** 1

Question Source: New

Difficulty Level: 3.5

Cognitive Level: Comprehension-Analysis

All Questions Key

Question Number: 66

At time 0000 the following conditions exists:

- MO-1001-7D RHR Pump D Torus Suction Valve is closed.
- MO-1001-43D RHR Pump D Shutdown Cooling Suction Valve is open.

At time 0005 an operator starts to locally open the MO-1001-7D.

At time 0015 the MO-1001-7D reaches full open.

The MO-1001-43D will start to close at:

- a. 0005 in order to prevent overpressurizing the torus from the reactor.
- b. 0015 in order to prevent overpressurizing the torus from the reactor.
- c. 0005 in order to prevent draining the reactor to the torus.
- d. 0015 in order to prevent draining the reactor to the torus.

All Questions Key

Details for Question Number: 66

Answer: c

References:

2.2.19.1 RHR System - Shutdown Cooling Mode of Operation (Rev 9); pg 14 of 137

Provided References:

None

Explanation:

If the MO-1001-7D is not full closed the MO-1001-43D will receive a close signal. This is designed to prevent draining the RPV to the torus.

Comments:

Objective: O-RO-02-09-01 EO 14

K/A: 205000G2128

10CFR Ref: 41.7

Exam Level: RO

Importance: 3.2

Tier: 2 **Group** 1

Question Source: New

Difficulty Level: 3.5

Cognitive Level: Comprehension-Analysis

All Questions Key

Question Number: 67

Following a loss of off-site power HPCI initiated on low reactor water level then tripped on high reactor water level.

Current plant conditions are:

- Reactor level is 18 inches and steady
- HPCI Initiation Seal In White Light is LIT
- HPCI High Water Level White Light is LIT
- HPCI TURB TRIP alarm is sealed in

If drywell pressure then rises to 2.2 psig, the HPCI Turbine Trip will:

- a. reset. HPCI will initiate and inject to the reactor with no operator action.
- b. reset. HPCI will initiate but will not inject to the reactor until the MO-2301-8 HPCI Injection Valve is manually opened.
- c. NOT reset. HPCI will inject if the operator resets the High Water Level Trip.
- d. NOT reset. HPCI will inject only if the operator BOTH opens the MO-2301-8, "HPCI Injection Valve" manually AND resets the High Water Level Trip.

All Questions Key

Details for Question Number: 67

Answer: c

References:

P&ID M1J16-10 sheet 3 of 10

Provided References:

None

Explanation:

HPCI High Level Turbine Trip will seal in until Level reaches the Low Level initiation setpoint (-46 inches). While the turbine is tripped on High Reactor Water Level, the High Drywell Pressure HPCI initiation is effectively disabled. Once the operator manually resets (via pushbutton) the High Level trip, HPCI will commence injection on the High Drywell pressure signal.

Comments:

TADS 3158

Objective: O-RO-02-09-03 EO 4

K/A: 206000A108

Question Source: Bank

10CFR Ref: 41.5

Difficulty Level: 3.5

Exam Level: RO

Cognitive Level: Comprehension-Analysis

Importance: 4.1

Tier: 2 **Group:** 1

All Questions Key

Question Number: 68

Which one of the following describes the immediate response of the HPCI system to a complete loss of 125VDC? Assume HPCI was in a normal standby lineup prior to the loss.

- a. HPCI will auto-initiate. Initiation logic is de-energized to function.
- b. HPCI will NOT auto-initiate, but the steam line isolation valves will close. Isolation logic is de-energized to function.
- c. HPCI will NOT auto-initiate and the steam line isolation valves will not close. Both initiation and isolation logic is energized to function.
- d. HPCI will attempt to initiate but the steam line isolation valves will close. Isolation logic is de-energized to function.

All Questions Key

Details for Question Number: 68

Answer: c

References:

HPCI Reference Text (Rev 6), Figures 11 & 12

Provided References:

None

Explanation:

Per electrical prints, both circuits have seal-ins; therefore, they must be energized to function.

Comments:

TADS 6668

Objective: O-RO-02-09-03 EO 25.I

K/A: 206000K203

Question Source: Bank

10CFR Ref: 41.7

Difficulty Level: 2.5

Exam Level: RO

Cognitive Level: Memory - Fundamental

Importance: 2.8

Tier: 2 **Group:** 1

All Questions Key

Question Number: 69

ADS has initiated due to a loss of coolant accident. The following conditions exist:

- Reactor Pressure: 900 psig
- Drywell Pressure: 12 psig
- RPV Level: -60 inches
- 'A' Core Spray pump is injecting; all other low pressure ECCS pumps are secured
- All 4 SRVs are open due to the ADS actuation

An operator mistakenly trips the 'A' Core Spray pump. The proper response of the ADS system is:

- a. the ADS blowdown will continue.
- b. all 4 SRVs will close and remain closed indefinitely.
- c. all 4 SRVs will close, but will immediately reopen.
- d. all 4 SRVs will close then reopen after a two minute delay.

All Questions Key

Details for Question Number: 69

Answer: a

References:

ADS Reference Text (Rev 3); pg 23

Provided References:

None

Explanation:

Any one pump running (RHR or Core Spray) will keep both ADS logics energized and all SRVs open. The blowdown is a seal-in circuit, so even if the pumps trip off, the blowdown will continue.

Comments:

Objective: O-RO-02-09-05 EO 3

K/A: 209001K302

10CFR Ref: 41.7

Exam Level: RO

Importance: 3.8

Tier: 2 **Group** 1

Question Source: New

Difficulty Level: 2.5

Cognitive Level: Memory - Fundamental

All Questions Key

Question Number: 70

The high pressure sensing line for the core plate D/P instrumentation has a fitting leak of 10 gpm. An ATWS event occurs and SLC is started.

The SLC system will inject:

- a. all boron into the RPV above the core plate.
- b. all boron into the RPV below the core plate.
- c. some boron into the RPV above the core plate, the rest outside the RPV.
- d. some boron into the RPV below the core plate, the rest outside the RPV.

All Questions Key

Details for Question Number: 70

Answer: d

References:

SLC Reference Text (Rev 2), Figure 8

Provided References:

None

Explanation:

Comments:

Objective: O-RO-02-06-06 EO 2.I

K/A: 211000K102

Question Source: Bank

10CFR Ref: 41.2

Difficulty Level: 3.0

Exam Level: RO

Cognitive Level: Comprehension-Analysis

Importance: 2.7

Tier: 2 **Group** 1

All Questions Key

Question Number: 71

The plant is in an ATWS. Both Standby Liquid Control pumps are out of service. Which of the following is an approved means of alternate boron injection?

- a. Add sodium pentaborate to the SLC Test Tank and align test tank to HPCI.
- b. Add sodium pentaborate to the SLC Test Tank and inject with condensate and feedwater systems.
- c. Connect the SLC tank to CRD pump suction and inject with a CRD pump.
- d. Connect the SLC tank to the RWCU demineralizer precoat tank and inject with RWCU pump.

All Questions Key

Details for Question Number: 71

Answer: d

References:

5.3.20, Alternate Borate Injection (Rev 15), Section 2.1 - "Alternate Injection of SLC after Gravity Drain from SLC Storage Tank"

Provided References:

None

Explanation:

Of the 4 listed as answers, only the RWCU option is part of a procedure.

Comments:

Grand Gulf 1998 NRC Exam

Objective: O-RO-02-06-06 EO 15.d

K/A: 211000K301

Question Source: Bank

10CFR Ref: 41.7

Difficulty Level: 2.5

Exam Level: RO

Cognitive Level: Memory - Fundamental

Importance: 4.3

Tier: 2 **Group:** 1

All Questions Key

Question Number: 72

Given the following conditions:

- A plant shutdown is in progress.
- At 60% power, a relay that is used to bypass the Stop Valve Closure and Control Valve Fast Closure Scrams, the 5A-K9A relay, fails in its de-energized position.

Assuming the person assigned to check the status of relays on back panels during the shutdown fails to do so, how would a front panel operator become aware of this failure?

- a. The Turbine Stop Valve Not Full Open Scram Bypass and the Control Valve Fast Closure Scram Bypass alarms will come in as soon as the relay fails.
- b. The Turbine Stop Valve Not Full Open Scram Bypass and the Control Valve Fast Closure Scram Bypass alarms will not come in when Turbine First Stage Pressure drops below 108 psig.
- c. A half scram will occur when the turbine is tripped.
- d. A full scram will occur when the turbine is tripped.

All Questions Key

Details for Question Number: 72

Answer: c

References:

P&Ids M1N19-7 and 21-9
ARP-C905R Alarm E-4

Provided References:

None

Explanation:

These relays are normally de-energized so there would be no effect from it failing in the de-energized state at 60% power. Any of the relays energizing would give the alarms on C905R for the scrams being bypassed. If one relay is failed in the de-energized condition, a half scram on that side will occur when the stop valves go closed.

Comments:

Objective: O-RO-02-07-07 EO EO 22.h

K/A: 212000A109

Question Source: New

10CFR Ref: 41.5

Difficulty Level: 3.5

Exam Level: RO

Cognitive Level: Comprehension-Analysis

Importance: 2.7

Tier: 2 **Group:** 1

All Questions Key

Question Number: 73

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

Which ONE of the following describes the ability to monitor reactor power post scram on the IRMs?

- a. The IRM detectors will not be able to be inserted since the detector drive motors are powered from Panel Y-2.
- b. The IRM detectors will not be able to be inserted since the detector drive control relays are powered from Panel Y-2
- c. The ability to monitor IRM levels on C905 will be lost since the recorders are powered from Y-2. IRM levels can still be determined on back panels.
- d. All IRM indications will be lost since they are powered from Panel Y-2.

All Questions Key

Details for Question Number: 73

Answer: c

References:

PNPS 5.3.6, Loss of Vital AC (Y2) (Rev 18); pg 4 of 12

Provided References:

None

Explanation:

Y-2 powers the IRM recorders on C905. The detectors can still be driven in and can be read on back panels.

Comments:

Objective: O-RO-02-7-02 EO 13.a

K/A: 215003K304

Question Source: New

10CFR Ref: 41.7

Difficulty Level: 3.0

Exam Level: RO

Cognitive Level: Memory - Fundamental

Importance: 3.6

Tier: 2 **Group:** 1

All Questions Key

Question Number: 74

A reactor startup is in progress. Reactor power is 50/125 scale on IRM Range 2. IRM detectors A & D were bypassed during the outage and both have just failed downscale. The CRS directs that IRM A and D be bypassed.

Under these conditions, the remaining IRMs satisfy the operability requirements of:

- a. both RPS trip systems.
- b. RPS 'A' only.
- c. RPS 'B' only.
- d. neither RPS trip system.

All Questions Key

Details for Question Number: 74

Answer: a

References:

TS Table 3.1.1

Provided References:

TS Table 3.1.1

Explanation:

IRMs A, C, E, and G supply signals to RPS A. IRMs B, D, F, and H supply signals to RPS B. Each RPS trip system only requires 3 IRMs to be operable.

Comments:

Objective: O-RO-02-07-02 EO 15

K/A: 215003K604

10CFR Ref: 41.7

Exam Level: RO

Importance: 3.0

Tier: 2 **Group:** 1

Question Source: New

Difficulty Level: 3.0

Cognitive Level: Memory - Fundamental

All Questions Key

Question Number: 75

The 'A' SRM high voltage power supply is powered from:

- a. D-25
- b. D-26
- c. Y-1
- d. Y-2

All Questions Key

Details for Question Number: 75

Answer: a

References:

SRM Reference Text (Rev 1); pg 22

Provided References:

None

Explanation:

The 'A' & 'C' SRM detector high voltage power supplies are powered from D-25. All other distracters are power sources that supply other parts of the SRM system.

Comments:

Objective: O-RO-02-07-01 EO 8

K/A: 215004K201

Question Source: New

10CFR Ref: 41.7

Difficulty Level: 3.0

Exam Level: RO

Cognitive Level: Memory - Fundamental

Importance: 2.6

Tier: 2 **Group:** 1

All Questions Key

Question Number: 76

A partial loss of core flow has occurred. The plant is currently operating in the Monitored Region of the power-to-flow map. Per PNPS 2.2.160, Period Based Detection System, the minimum number of operable channels of PBDS is ____ (1) ____ and a reactor scram is required immediately ____ (2) ____.

- a. (1) 1
(2) if you do not have the minimum number operating
- b. (1) 2
(2) if you do not have the minimum number operating
- c. (1) 1
(2) if a validated Hi-Hi Decay Ratio alarm annunciates on an operable channel
- d. (1) 2
(2) if a validated Hi-Hi Decay Ratio alarm annunciates on an operable channel

All Questions Key

Details for Question Number: 76

Answer: c

References:

2.2.160, Period Based Detection System (Rev 4); pg 11

Provided References:

None

Explanation:

Per 2.2.160, Period Based Detection System (PBDS), the minimum number of operable channels is 1. When in the monitored region, the only time an operator is required to scram immediately is when a Hi-Hi Decay Ratio alarm comes in on an operable channel and it is validated.

Comments:

Objective: O-RO-02-07-10 EO 17a

K/A: 295001AA202

10CFR Ref: 43.5

Exam Level: SRO

Importance: 3.2

Tier: 1 **Group** 1

Question Source: New

Difficulty Level: 3.0

Cognitive Level: Comprehension-Analysis

All Questions Key

Question Number: 77

During rated power conditions, 125 VDC bus D-16 de-energizes. All other systems are aligned normally. Upon loss of D-16, 125 VDC panel D-6 will ____ (1) _____. If power cannot be restored to bus D-16, the plant must be placed in cold shutdown within ____ (2) _____.

- a. (1) immediately transfer to D-17
(2) 24 hours
- b. (1) transfer to D-17 after a time delay
(2) 24 hours
- c. (1) immediately transfer to D-17
(2) 7 days
- d. (1) transfer to D-17 after a time delay
(2) 7 days

All Questions Key

Details for Question Number: 77

Answer: a

References:

5.3.11 Loss of Essential DC Bus D16 or D4 and D36 (Rev 33); pgs 3, 6

Provided References:

None

Explanation:

Transfer to D-17 will be immediate. If power is lost to Bus D-16 and cannot be restored, A side ECCS and A EDG will be unavailable.

Comments:

PNPS 2002 SRO Exam - Question 2

Objective: O-RO-02-01-02 EO 6

K/A: 295004AA101

Question Source: Bank Modified

10CFR Ref: 43.5

Difficulty Level: 3.0

Exam Level: SRO

Cognitive Level: Comprehension-Analysis

Importance: 3.4

Tier: 1 **Group:** 1

All Questions Key

Question Number: 78

With the plant operating at 100% power, power is lost to B15 due to a fault.

After completing all immediate and subsequent actions of 2.4.42, Loss of RBCCW there _____(1)_____ flow in both loops of RBCCW. The most restrictive LCO for this condition requires the plant to be placed in cold shutdown within _____(2)_____ hours.

- a. (1) is not
(2) 72
- b. (1) is
(2) 72
- c. (1) is not
(2) 24
- d. (1) is
(2) 24

All Questions Key

Details for Question Number: 78

Answer: d

References:

Tech Specs; Section 3.5.B.3.C1
Tech Specs; pg B3.5-12
2.4.42, Rev 22, page 7 of 17

Provided References:

None

Explanation:

B-15 powers all loop 'A' RBCCW pumps, thus the loop is still intact, but inoperable due to loss of pumps.. The subsequent actions of 2.4.42, Loss of RBCCW call for the operators to cross-connect the 'A' and 'B' loops. Per Tech Specs, a RBCCW subsystem is inoperable if the cross-connect valves are open since a failure of one subsystem will affect the other. With 2 RBCCW subsystems inoperable, Cold Shutdown is required within 24 hrs.

Comments:

Objective: O-RO-06-01-03 EO 3

K/A: 295018AA204

10CFR Ref: 43.5

Exam Level: SRO

Importance: 2.9

Tier: 1 **Group** 1

Question Source: New

Difficulty Level: 3.5

Cognitive Level: Comprehension-Analysis

All Questions Key

Question Number: 79

Given the following sequence of events:

- 'A' RHR pump was placed in Shutdown Cooling at time 0000.
- Reactor water level dropped to +9 inches at 0005. When this occurred MO-1001-47 and MO-1001-50 valves auto closed.
- No other RHR auto or manual actions took place.
- Operators used feedwater to restore reactor water level to the normal band at 0010.
- Current reactor water temperature is 220 degrees F and slowly rising

Which ONE of the following statements describe whether systems/components responded properly to the level transient AND what actions will allow Shutdown Cooling to be restarted?

- a. The response was proper. The Group III isolation may be reset and Shutdown Cooling may be restarted.
- b. The response was proper. The Group III isolation must be bypassed before Shutdown Cooling may be restarted.
- c. The response was NOT proper. One containment isolation valve in line with the MO-1001-29A is required to be deactivated in the isolated condition and may only be reopened if an ORC approved procedure is obtained to allow opening it. The Group III isolation would be reset and Shutdown Cooling could be restarted.
- d. The response was NOT proper. One containment isolation valve in line with the MO-1001-29A is required to be deactivated in the isolated condition. There are no provisions to allow opening this valve by use of an ORC approved procedure. The deactivated containment isolation valve must remain in that state until the Group III isolation circuitry has been repaired following which Shutdown Cooling could then be restarted.

All Questions Key

Details for Question Number: 79

Answer: c

References:

2.2.19.1 RHR System - Shutdown Cooling Mode of Operation (Rev 9); pg 13
TS 3.7.A.2.b

Provided References:

Tech Specs

Explanation:

MO-1001-29A closes on high DW pressure and low Reactor water level, not on high reactor pressure.

TS allow reopening valves closed to compensate for an inoperable containment isolation valve provided it is directed by an ORC approved procedure.

Comments:

Objective: O-RO-02-09-01 EO 15.j

K/A: 295021AA102

Question Source: New

10CFR Ref: 43.3

Difficulty Level: 3.5

Exam Level: SRO

Cognitive Level: Comprehension-Analysis

Importance: 3.5

Tier: 1 **Group:** 1

All Questions Key

Question Number: 80

The Reactor Steam Dome Safety Limit allows exceeding the reactor vessel design pressure of _____(1)_____ by 10%.

If this safety limit is exceeded by 1 psig, _____(2)_____ will exceed this maximum transient pressure.

- a. (1) 1205 psig
(2) reactor vessel head
- b. (1) 1250psig
(2) reactor vessel head
- c. (1) 1205 psig
(2) the lowest elevation in the reactor coolant system
- d. (1) 1250psig
(2) the lowest elevation in the reactor coolant system

All Questions Key

Details for Question Number: 80

Answer: d

References:

Tech Specs; pg B2-4

Provided References:

None

Explanation:

Per Tech Specs, Reactor dome pressure shall be < or equal to 1325 at any time irradiated fuel is present in the vessel. This is based on a maximum pressure transient of 110% (1375 psig) of design pressure (1250 psig). The safety limit, as measured by the reactor steam dome pressure indicator, is equivalent to 1375 psig at the lowest elevation of the reactor coolant system.

The distracter of 1205 psig was obtained because $1205 * 110\% = 1325$.

Comments:

Objective: O-RO-06-01-02

K/A: 295007G2222

10CFR Ref: 43.2

Exam Level: SRO

Importance: 4.1

Tier: 1 **Group:** 2

Question Source: New

Difficulty Level: 3.0

Cognitive Level: Comprehension-Analysis

All Questions Key

Question Number: 81

The plant is at 920 psig and the mode switch has just been taken to RUN. A transient occurs which causes reactor pressure to lower to 800 psig and reactor water level to go off scale high on the Narrow Range Instruments on C905.

Under these conditions PNPS 1.3.34, Conduct of Operations, requires the operator to close or verify closed the MSIVs since they received an isolation signal on ____ (1) _____. This signal is designed to protect against ____ (2) _____.

- a. (1) +55 inches Reactor Water Level
(2) excessive plant depressurization due to failure of a pressure regulator
- b. (1) 810 psig Main Steam Line Pressure
(2) excessive plant depressurization due to failure of a pressure regulator
- c. (1) +55 inches Reactor Water Level
(2) water hammer in the HPCI turbine
- d. (1) 810 psig Main Steam Line Pressure
(2) water hammer in the HPCI turbine

All Questions Key

Details for Question Number: 81

Answer: b

References:

TS Table 3.2..A

TS Section 3.2 Bases

PNPS 1.3.34, Conduct of Operations, Rev 84, Page 57 of 118

Provided References:

Tech Specs

Explanation:

With the mode switch in RUN, the MSIVs should have gone closed at 810 psig Main Steam Line Pressure in order to protect against a failed pressure regulator.

If the mode switch were out of RUN, the MSIVs would have gone closed on a high reactor water level signal.

Comments:

Objective: O-RO-02-08-10 EO 3 and 4

K/A: 295008G222

Question Source: New

10CFR Ref: 43.5

Difficulty Level: 3.5

Exam Level: SRO

Cognitive Level: Comprehension-Analysis

Importance: 3.5

Tier: 1 Group 2

All Questions Key

Question Number: 82

The RHR system is in Shutdown Cooling (SDC) mode per 2.2.19.1, "RHR Shutdown Cooling Mode of Operation" with 'A' loop at 3500 GPM. The following conditions exist:

- Reactor water temperature is 180 degrees F
- Both Reactor Recirc Pumps are secured
- A tagging error has resulted in the MO-1001-18A, Minimum Flow Valve not being tagged in the closed position
- The 'B' loop has just been placed in Suppression Pool Cooling mode at 2000 GPM
- A low flow condition occurs in the 'A' loop, causing 'A' loop flow to be 1000 GPM

Which of the following describes the correct plant response / operator action, in accordance with PNPS 2.4.25, "Loss of Shutdown Cooling", if these conditions do not change?

- a. The MO-18A valve does not open and the pump must be tripped within 1 hour to prevent overheating the pump.
- b. The MO-18A valve does not open and the pump may be run indefinitely in this condition.
- c. The MO-18A valve opens and SDC eventually isolates. Temperature stratification is not a concern since the plant is below 212 degrees F.
- d. The MO-18A valve opens and SDC eventually isolates. Starting a Reactor Recirc Pump will prevent temperature stratification.

All Questions Key

Details for Question Number: 82

Answer: d

References:

2.2.19.1, RHR System - Shutdown Cooling Mode (Rev 9); pgs 12, 17
2.4.25, Loss of Shutdown Cooling (Rev 23), pg 4 of 10
RHR Ref Text Rev 7 pages 28-29

Provided References:

None

Explanation:

The min flow valve operates if (1) flow in both loops < 2500 GPM, (2) at least one pump is running in the respective loop, & (3) the 10 second timer has timed out. ("conditions do not change")

Per 2.4.25, Loss of Shutdown Cooling procedure, if reactor is not pressurized or heat sink is not available, you must either raise RPV level or establish force flow with a recirc pump

Comments:

Objective: O-RO-02-09-01 EO 14

K/A: 205000A212

10CFR Ref: 43.5

Exam Level: SRO

Importance: 3.0

Tier: 2 **Group:** 1

Question Source: New

Difficulty Level: 3.5

Cognitive Level: Comprehension-Analysis

All Questions Key

Question Number: 83

A transient results in the following conditions:

- A reactor scram with all rods inserting
- The RPV completely depressurizes
- Torus bottom pressure is 15 psig
- Torus water level is 30 inches
- Torus bulk water temperature is 150 degrees F
- RPV Level is being maintained steady at -160 inches with the 'A' Core Spray Pump which is the only source of injection.

Under these conditions the 'A' Core Spray Pump is violating its _____(1)_____. EOPs direct that _____(2)_____.

- a. (1) Vortex limit only
(2) the 'A' Core Spray Pump not be operated in violation of this limit. The 'A' Core Spray Pump must be shutdown and the Primary Containment must be flooded.
- b. (1) Vortex and NPSH limits
(2) the 'A' Core Spray Pump not be operated in violation of these limits. The 'A' Core Spray Pump must be shutdown and the Primary Containment must be flooded.
- c. (1) Vortex limit only
(2) the 'A' Core Spray Pump will be maintained in service without regard to exceeding this limit
- d. (1) Vortex and NPSH limit
(2) the 'A' Core Spray Pump will be maintained in service without regard to exceeding these limits

All Questions Key

Details for Question Number: 83

Answer: c

References:

EOP-11
EOP-01
EOP-03

Provided References:

EOP-11
EOP-01
EOP-03

Explanation:

EOP-01 Requires 3600 GPM flow from a core spray pump in order to avoid Primary Containment Flooding. Caution 2 only states that operation beyond NPSH and Vortex limits may result in equipment damage, does not prohibit their use.

The conditions given put you in the red region of Vortex but not NPSH..

Comments:

Objective: O-RO-03-04-02 EO 3.b

K/A: 209001A209

10CFR Ref: 43.5

Exam Level: SRO

Importance: 3.3

Tier: 2 **Group** 1

Question Source: New

Difficulty Level: 4.0

Cognitive Level: Comprehension-Analysis

All Questions Key

Question Number: 84

Given the following conditions:

- The plant is nearing the end of a refueling outage.
- As an SRO working in the Control Room Annex, you have been directed to ensure that the Containment Spray mode of RHR meets its Technical Specification LCO.

Which one of the following describes the Technical Specification operability requirements for the RHR pumps and Heat Exchangers to meet this LCO?

- a. All 4 RHR pumps and both RHR Exchangers must be OPERABLE.
- b. One RHR pump per loop and both RHR Heat Exchangers must be OPERABLE. The other two RHR pumps may be INOPERABLE.
- c. All 4 RHR pumps must be OPERABLE. Both RHR Heat Exchangers may be INOPERABLE.
- d. One RHR pump per loop must be OPERABLE. The other two RHR pumps and both RHR Heat Exchangers may be INOPERABLE.

All Questions Key

Details for Question Number: 84

Answer: b

References:

Tech Specs; pg 3.5- 8

Provided References:

None

Explanation:

Per Tech Spec, an RHR containment spray subsystem is OPERABLE when one of the pumps, the heat exchanger, and associated piping, valves, instrumentation, and controls are OPERABLE.

Comments:

PNPS 2002 SRO Exam - Question 91

Objective: O-RO-02-09-01 EO 22

K/A: 230000G2225

Question Source: Bank

10CFR Ref: 43.2

Difficulty Level: 3.5

Exam Level: SRO

Cognitive Level: Comprehension-Analysis

Importance: 3.7

Tier: 2 Group 2

All Questions Key

Question Number: 85

Given the following conditions:

- The plant was shutdown to perform maintenance on the Group VI isolation circuitry.
- Shutdown cooling is in service with reactor water temperature at 140 degrees F.
- The MO-1201-2 and MO-1201-5 valves are open with their auto closure capabilities disabled.
- Both drywell personnel airlock doors are open with interlocks defeated.
- A loss of shutdown cooling occurs and the RPV begins to heat up.
- One drywell personnel airlock door is then closed.
- The operator then closes the MO-1201-2 valve using the C904 control switch.

When primary temperature exceeds 212 degrees F, a violation of Technical Specifications:

- a. has not occurred since Primary Containment integrity had been met.
- b. has not occurred due to Primary Containment integrity not being required.
- c. has occurred only because no valves in the RWCU section line have been disabled.
- d. has occurred due to one personnel airlock door being open AND no valves in the RWCU suction line being disabled.

All Questions Key

Details for Question Number: 85

Answer: c

References:

Tech Spec 3.7.A.2.a
Tech Spec 3.7.A.2.b

Provided References:

None

Explanation:

Primary containment required when temperature exceeds 212 degrees F. Containment requires one personnel airlock to be closed and one valve in the line with inop PCIS valves to have one valve disabled in the closed position.

Comments:

PNPS 2002 SRO Exam - Question 7

Objective: O-RO-06-01-03 EO 3

K/A: G2122

Question Source: Bank

10CFR Ref: 43.2

Difficulty Level: 3.0

Exam Level: SRO

Cognitive Level: Comprehension-Analysis

Importance: 3.3

Tier: 3 **Group**

All Questions Key

Question Number: 86

Following the quarterly SBLC flow test for the 'A' SBLC pump, you receive a report that the results of the required concentration analysis are as follows:

- Tank Volume 4226 gallons
- % Sodium Pentaborate 8.32
- Tank Temperature 68 degrees F

Select the statement below that describes the actions required by the Technical Specifications:

- a. The plant must be placed in cold shutdown condition within 24 hours.
- b. If the isotopic enrichment of Boron-10 is above 54.4 atom percent then a shutdown can be avoided if the sodium pentaborate solution meets the original design criteria.
- c. Power operation may continue for the next 7 days provided that the 'B' SBLC pump passes the flow rate test immediately and daily thereafter.
- d. Restore concentration of boron in solution to within limits within 72 hours AND 10 days from discovery of failure to meet the LCO, or else place the plant in hot shutdown within 12 hours.

All Questions Key

Details for Question Number: 86

Answer: d

References:

T.S. 3.4.A
T.S. Figure 3.4-1

Provided References:

Tech Specs

Explanation:

Per Tech Spec 3.4.A: "With concentration of boron in solution now within limits but > 8%, restore concentration of boron in solution to within limits within 72 hours AND 10 days from discovery of failure to meet the LCO." If unable to meet the completion time, be in Hot Shutdown within 12 hours.

Comments:

TADS # 311

Objective: O-RO-02-06-06 EO 17

K/A: G2125

Question Source: Bank

10CFR Ref: 43.2

Difficulty Level: 3.0

Exam Level: SRO

Cognitive Level: Comprehension-Analysis

Importance: 3.1

Tier: 3 **Group**

All Questions Key

Question Number: 87

It is desired to remove the HPCI system from service for on line maintenance. Per Technical Specifications, power operation may continue for 14 days with HPCI out of service provided that ADS, RCIC, LPCI, and both Core Spray systems are ____ (1) ____.

In order to declare HPCI operable when it is returned to service, PNPS 2.2.21, "HPCI System" requires the MO-2301-9 valve to be ____ (2) ____.

- a. (1) demonstrated operable
(2) closed
- b. (1) verified operable
(2) open
- c. (1) demonstrated operable
(2) open
- d. (1) verified operable
(2) closed

All Questions Key

Details for Question Number: 87

Answer: b

References:

TS 3.5.C.2
2.2.21, HPCI System (Rev 64); pg 13 of 66

Provided References:

TS 3.5.C.2

Explanation:

Tech Spec requires that LPCI, ADS, RCIC and LPCI be operable. Since Tech Specs do not specify whether to demonstrate or to verify, the candidate must be familiar with the meaning of this specification.

Since MO-2301-9 is a passive safety related valve, it must be open in order to declare HPCI operable.

Comments:

NOTE: TS only required that they be operable, does not specify whether to demonstrate or verify operability.

Objective: O-RO-02-09-03 EO 27

K/A: G2221

Question Source: New

All Questions Key

Question Number: 88

Refueling operations are in progress with the reactor vessel head removed and a partial load of fuel is in the vessel. Shutdown margin check has been performed. Which one of the following is a core alteration?

- a. Driving in a Source Range Monitor
- b. Installing a control rod into an empty cell
- c. Inserting the Instrument Handling Tool below the top guide.
- d. Performing a friction test on a control rod in a loaded cell.

All Questions Key

Details for Question Number: 88

Answer: d

References:

Tech Specs Definitions

Provided References:

None

Explanation:

Per Tech Specs, a core alteration is the movement of any fuel, sources, or reactivity control components, within the reactor vessel with the vessel head removed and fuel in the vessel.

Exceptions are the movement of source range monitor, local power range monitors, intermediate range monitors, traversing incore probes, or special movable detectors, AND control rod movement provided there are no fuel assemblies in the associated core cell.

Comments:

INPO # 18015

Objective: O-RO-06-01-01 EO3.q

K/A: G2.2.27

10CFR Ref: 41.5

Exam Level: SRO

Importance: 3.5

Tier: 3 **Group**

Question Source: Bank

Difficulty Level: 3.0

Cognitive Level: Memory - Fundamental

All Questions Key

Question Number: 89

A leak in the drywell has caused containment pressure to rise such that torus bottom pressure is 16 psig and drywell pressure is 11 psig. You find that drywell spray is required and are attempting to determine drywell temperature when you find that the only available instrument reading drywell temperature is the Kaye Computer. See Attachment 2 of 2.1.27 for Drywell Temperature Data (attached).

Bulk drywell temperature is _____(1)_____ and you _____(2)_____ within the safe region of the Drywell Spray Initiation Limit Curve.

- a. (1) 300.5 degrees F
(2) are
- b. (1) 300.5 degrees F
(2) are not
- c. (1) 308 degrees F
(2) are
- d. (1) 308 degrees F
(2) are not

All Questions Key

Details for Question Number: 89

Answer: a

References:

2.1.27, Drywell Temperature Indication (Rev 6)
EOP-03
EOP-11

Provided References:

2.1.27, Rev 6; pg 11
DSIL curve of EOP-11

Explanation:

Comments:

Objective: O-RO-03-04-05 EO 12

K/A: 295024A202

Question Source: New

10CFR Ref: 43.5

Difficulty Level: 3.0

Exam Level: SRO

Cognitive Level: Comprehension-Analysis

Importance: 4.0

Tier: 1 **Group:** 1

All Questions Key

Question Number: 90

A plant startup is in progress with reactor power at 30%. Reactor pressure is being maintained on the EPR following an MPR failure.

In accordance with Attachment 2 of 2.4.37, "Turbine Control System Malfunctions", once pressure is determined to be under control, the reactor pressure setpoint shall be ____ (1) ____.

2.4.37 requires that power be reduced to less than 25% if the MPR is not restored within 24 hours unless an approved operability evaluation for this condition exists since you can not ensure that ____ (2) ____ will be maintained within specification during a transient.

- a. (1) adjusted to between 940 and 960 psig
(2) MCPR
- b. (1) adjusted to between 940 and 960 psig
(2) LHGR
- c. (1) adjusted to between 935 and 955 psig.
(2) MCPR
- d. (1) adjusted to between 935 and 955 psig.
(2) LHGR

All Questions Key

Details for Question Number: 90

Answer: a

References:

2.4.37, Turbine Control System Malfunctions (Rev 17); pgs 9 and 13

Provided References:

2.4.37, Attachment 2

Explanation:

Per the Attachment 2 of 2.4.37 which will be provided, the band for reactor pressure for 30% would be 940-960 psig. With only one pressure regulator in service, you cannot ensure that MCPR will be met during a transient.

Comments:

Objective: O-RO-02-05-04 EO 16

K/A: 295025A202

Question Source: New

10CFR Ref: 43.5

Difficulty Level: 3.5

Exam Level: SRO

Cognitive Level: Comprehension-Analysis

Importance: 4.2

Tier: 1 Group 1

All Questions Key

Question Number: 91

The following conditions exist:

- A DBA LOCA has occurred
- All available sources of water are needed to maintain reactor water level
- Torus Water Level is 165 inches and slowly rising
- Torus Water Temperature is 185 degrees F and slowly rising
- Reactor Pressure is 600 psig and stable
- Switchboard Y-3 is unavailable.
- You are in the process of putting torus cooling in service.

The torus water temperature ____ (1) ____ has power and is qualified for use as a Post Accident Monitor. Emergency Depressurization is ____ (2) ____.

- a. (1) recorder TRU-5021-01A on C170
(2) currently required without regard to any other plant conditions.
- b. (1) recorder TRU-5021-01A on C170
(2) required at this time only if you determine that you cannot lower torus water temperature below 180 degrees F
- c. (1) indicator TI -5022-1B on C903
(2) currently required without regard to any other plant conditions.
- d. (1) indicator TI -5022-1B on C903
(2) required at this time only if you determine that you cannot lower torus water temperature below 180 degrees F

All Questions Key

Details for Question Number: 91

Answer: c

References:

EOP-03

5.3.18, Loss of 120V AC Safeguard Buses Y3 and Y31 (Rev 18); pg 5

Provided References:

EOP-03

Explanation:

The loss of Y3 causes all instrumentation on C170 to lose power, as well as all 'A' channel Torus water indicators. The 'B' indicator on 903 will still be available and is a PAM instrument. At 600 psig Reactor pressure, the HCTL limit is reached at about 181 degrees in the torus. Once this temperature has been reach, Emergency Depressurization is required.

Comments:

Modified from 2002 PNPS NRC exam - Question 88

Objective: O-RO-03-04-05 EO 14a

K/A: 295026G243

Question Source: Bank Modified

10CFR Ref: 43.5

Difficulty Level: 3.0

Exam Level: SRO

Cognitive Level: Memory - Fundamental

Importance: 3.8

Tier: 1 **Group 1**

All Questions Key

Question Number: 92

The reactor is at 100% power. A fire has been discovered in the Cable Spreading Room and Halon is discharging.

Assume CRHEAFS is in a normal lineup. With regard to the fire, both 'A' and 'B' CRHEAFS trains ____ (1) _____. If one of the trains is found to be inoperable, ____ (2) ____ or the reactor shall be in cold shutdown within 36 hours.

- a. (1) will automatically start
(2) within 2 hours the other CRHEAFS train and both SBTG trains must be verified operable.
- b. (1) will automatically start
(2) within 2 hours the other CRHEAFS train must be verified operable and the EDG associated with the operable train shall be operable
- c. (1) will remain in standby
(2) within 2 hours the other CRHEAFS train and both SBTG trains must be verified operable.
- d. (1) will remain in standby
(2) within 2 hours the other CRHEAFS train must be verified operable and the EDG associated with the operable train shall be operable

All Questions Key

Details for Question Number: 92

Answer: b

References:

T.S. 3.7.B.2.c
PNPS 2.2.46, Rev 38, Page 10 of 43

Provided References:

Tech Specs

Explanation:

Only in the event of a fire in the Cable Spreading Room, as long as the VSF-103A and B control switches are in AUTO, both fans should start to draw outside air into the control room. Tech Specs require verifying the other side CRHEAF is operable and that the EDG associated with the operable train of CRHEAFS is operable to permit operating the reactor over the next 7 days.

The distracter of neither train starting is valid since the procedure states that CRHEAFS shall not be run in the event of a fire, except in the case of a fire in the CSR.

Comments:

Objective: O-RO-06-01-01 EO 9

K/A: 600000A105

Question Source: New

10CFR Ref: 43.2

Difficulty Level: 3.0

Exam Level: SRO

Cognitive Level: Comprehension-Analysis

Importance: 3.1

Tier: 1 **Group:** 1

All Questions Key

Question Number: 93

Following a seismic event and turbine trip:

- EOP-04 was entered due to high water level in the SE quad
- The NW and SE quads of the Reactor Building are now at 5.5 inches and 6 inches respectively and rising
- There are reports of piping cracks on the RHR pump suction lines
- Torus level is slowly lowering
- Efforts to isolate the leaks have not been successful

When the NW quad water level reaches 6 inches, Emergency Depressurization ____ (1) ____.

Normal cooldown rates ____ (2) ____.

- a. (1) will be required
(2) do NOT apply
- b. (1) will NOT be required
(2) do NOT apply
- c. (1) will be required
(2) apply
- d. (1) will NOT be required
(2) apply

All Questions Key

Details for Question Number: 93

Answer: d

References:

EOP-01
EOP-03
O-RO-03-04-06 (Rev 5); pg IG-19

Provided References:

EOP-01, EOP-03

Explanation:

Cooldown rates can be disregarded if Emergency Depressurization is required. Since there is no primary system discharging into containment, there is no need to Emergency Depressurize, thus normal cooldown rates apply.

Comments:

INPO # 11827

Objective: O-RO-03-04-06 EO4

K/A: 295036G246

10CFR Ref: 43.5

Exam Level: SRO

Importance: 4.0

Tier: 1 **Group 2**

Question Source: Bank

Difficulty Level: 3.0

Cognitive Level: Comprehension-Analysis

All Questions Key

Question Number: 94

Which of the following is the basis for the automatic initiation of SBT on a high secondary containment ventilation exhaust radiation level?

- a. Provides for the maintenance of a positive pressure in the secondary containment, therefore preventing any of the fission products released into the containment from being released into the environment.
- b. Provides for the cleanup of the secondary containment atmosphere, allowing personnel entry into the secondary containment during a DBA LOCA.
- c. Provides for the recirculation of the secondary containment atmosphere without exhausting air outside of containment.
- d. Provides for the filtration of the secondary containment atmosphere of radionuclides prior to their release into the environment, maintaining offsite releases within limits.

All Questions Key

Details for Question Number: 94

Answer: d

References:

Tech Spec Bases

Provided References:

None

Explanation:

The SBT system does not establish a positive pressure in the containment, does not allow for drywell entry during a DBA LOCA, nor does it recirculate air.

Comments:

Grand Gulf 1 1998 NRC

Objective: O-RO-06-01-03 EO 4

K/A: 295034EK302

10CFR Ref: 43.4

Exam Level: SRO

Importance: 4.1

Tier: 1 **Group** 2

Question Source: Bank

Difficulty Level: 2.5

Cognitive Level: Comprehension-Analysis

All Questions Key

Question Number: 95

The SBGT System is designed to reduce and hold Secondary Containment Pressure at _____(1)_____ inches of water atmospheric with only one SBGT Fan operating.

If one SBGT Train is inoperable with the plant at power and all other equipment operable, reactor operation may continue for a maximum of _____(2)_____, after which the reactor must be placed in Cold Shutdown within 36 hours.

- a. (1) -0.25
(2) 7 days
- b. (1) -0.25
(2) 72 hours
- c. (1) -0.50
(2) 7 days
- d. (1) -0.50
(2) 72 hours

All Questions Key

Details for Question Number: 95

Answer: a

References:

TS 3.7.B.1.c
FSAR page 5.3-3

Provided References:

TS 4.7.B.1.c

Explanation:

Per FSAR, page 5.3-3, one SBGT fan can reduce pressure and hold it at -0.25 inches of water.

If one train of SBGT is inop, TS 3.7.B.1.c allows 7 days maximum time to operate, at which time you must be in cold shutdown with 36 hours.

Comments:

Objective: O-RO-02-08-03 EO 1

K/A: 261000G2127

Question Source: New

10CFR Ref: 43.2

Difficulty Level: 3.5

Exam Level: SRO

Cognitive Level: Comprehension-Analysis

Importance: 2.9

Tier: 2 **Group:** 1

All Questions Key

Question Number: 96

In accordance with 2.2.8, “Standby AC Power Systems (Diesel Generators)”, which ONE of the following is the MINIMUM starting air system component status that is required to consider an EDG operable?

- a. An operable air compressor
- b. One air start receiver with pressure at least 225 psig
- c. Two air start receivers with pressure at least 225 psig
- d. Two air start receivers with pressure at least 235 psig

All Questions Key

Details for Question Number: 96

Answer: b

References:

2.2.8, Standby AC Power System (Diesel Generators) (Rev 78); pg 39

Provided References:

None

Explanation:

With one receiver isolated, the remaining receiver must be at least 225 psig in order to remain operable.

Comments:

Objective: O-RO-06-01-06 EO 10

K/A: 264000K601

Question Source: New

10CFR Ref: 43.2

Difficulty Level: 3.5

Exam Level: SRO

Cognitive Level: Memory - Fundamental

Importance: 3.9

Tier: 2 **Group:** 1

All Questions Key

Question Number: 97

The following conditions exist:

- An RFO is in progress; refueling is complete
- The fuel pool is isolated from the reactor basin and reactor basin draindown has commenced.
- The 'B' Fuel Pool Cooling heat exchanger has developed a major tube leak and is isolated.
- Fuel Pool Cooling temperature is 115 degrees F and rising

If the Fuel Pool temperature continues to rise, the nominal FSAR limit of ____ (1) ____ will be exceeded. To control Fuel Pool water temperature, Augmented Fuel Pool Cooling ____ (2) ____ may be used.

- a. (1) 140 degrees F
(2) With Shutdown Cooling
- b. (1) 140 degrees F
(2) Without Shutdown Cooling
- c. (1) 125 degrees F
(2) With Shutdown Cooling
- d. (1) 125 degrees F
(2) Without Shutdown Cooling

All Questions Key

Details for Question Number: 97

Answer: d

References:

2.2.85.2, Augmented Fuel Pool Cooling Mode 2 (Rev 9); pg 5
FSAR page 10.4-1

Provided References:

None

Explanation:

The FSAR limit is 125 degrees F. The limit on demineralizer operation is 140 degrees F. With the fuel pool gate installed, Augmented Fuel Pool Without Shutdown Cooling is the only lineup to provide additional cooling.

Comments:

The word "may" was retained in the question since there is no procedural requirement to control Fuel Pool temperature with Augmented Cooling.

Objective: O-NL-03-11-01 EO 4g

K/A: 233000A207

Question Source: New

10CFR Ref: 43.7

Difficulty Level: 3.5

Exam Level: SRO

Cognitive Level: Comprehension-Analysis

Importance: 3.2

Tier: 2 **Group:** 2

All Questions Key

Question Number: 98

A job is being planned in a high radiation area. Consideration is being given to installing temporary shielding and to using a special tool that will allow the job to be performed at a greater distance from the source, but will increase the time required to complete the job. The temporary shielding will require a total dose of 1R to install and remove.

The following estimates are available:

OPTION 1: The job can be performed in a field of 2.4 R/hr in one hour without temporary shielding and without the special tool.

OPTION 2: The job can be performed in a field of 500 mR/hr in one hour with temporary shielding and without the special tool.

OPTION 3: The job can be performed in a field of 600 mR/hr in two hours without temporary shielding and with the special tool.

OPTION 4: The job can be performed in a field of 120 mR/hr in two hours with temporary shielding and with the special tool.

The option that will maintain the station's dose as low as reasonably achievable (ALARA) is:

- a. OPTION 1
- b. OPTION 2
- c. OPTION 3
- d. OPTION 4

All Questions Key

Details for Question Number: 98

Answer: c

References:

GET C-GT-01-02-01 p SG-11&12

Provided References:

None

Explanation:

Point source calculation relative to personnel ALARA considerations under radiological conditions.

Comments:

Objective: GET C-GT-01-02-01 SG-3

K/A: G2.3.10

Question Source: Bank

10CFR Ref: 43.4

Difficulty Level: 3.0

Exam Level: SRO

Cognitive Level: Comprehension-Analysis

Importance: 3.3

Tier: 3 **Group**

All Questions Key

Question Number: 99

In accordance with EP-IP-200, "On-Call Emergency Director", which one of the following responsibilities may be delegated by the On-Call Emergency Director?

- a. Offsite protective action recommendations
- b. Classification of an emergency event
- c. Actual phone notification of the Nuclear Regulatory Commission.
- d. Specifying the access authorization requirements for the emergency conditions.

All Questions Key

Details for Question Number: 99

Answer: c

References:

EP-IP-200, On-Call Emergency Director (Rev 10); p.4-5

Provided References:

None

Explanation:

Guidance is given within the Emergency Plan regarding the responsibilities which may not be delegated by the Emergency Director or the On-Call Emergency Director.

Comments:

Objective: GET C-GT-01-01-27 EO 4

K/A: G2.4.40

Question Source: Bank

10CFR Ref: 43.5

Difficulty Level: 3.5

Exam Level: SRO

Cognitive Level: Memory - Fundamental

Importance: 4.0

Tier: 3 **Group**

All Questions Key

Question Number: 100

A steam leak in the steam tunnel has caused a Group I isolation and a reactor scram. All control rods fully insert. Following the reactor scram, the Scram Discharge Volume ruptures.

Plant conditions are as follows:

- | | |
|--------------------------------------|------------------|
| - PCIS Isolations | Group I only |
| - RWCU & RHR Piping Area -23 ft. EL. | 265°F, rising |
| - SW Quadrant | 3 inches, rising |
| - CRD Quadrant | 2 inches, rising |
| - Reactor Building Vent Exhaust | Hi-Hi Alarm |
| - Reactor Pressure | 900 psig |

Under these conditions:

- the scram should be bypassed and reset in accordance with PNPS 5.3.23, Alternate Rod Insertion, in order to terminate an uncontrolled release of radioactivity to the environment.
- the scram should be bypassed and reset in accordance with PNPS 5.3.23, Alternate Rod Insertion, based on the Scram Discharge Volume being a Primary System.
- Reactor Building Ventilation should be isolated and Standby Gas Treatment should be started in order to terminate an uncontrolled release of radioactivity to the environment.
- Reactor Building Ventilation should be isolated and Standby Gas Treatment should be started based on the Scram Discharge Volume being a Primary System.

All Questions Key

Details for Question Number: 100

Answer: c

References:

EOP-04
Emergency Procedure Guidelines

Provided References:

None

Explanation:

Nothing in the current conditions dictates a need to bypass and reset the scram. Per Emergency Procedure Guidelines, if secondary containment radiation level trip signal is exceeded, SBGT must be started in order to process the release and direct it towards an elevated release point.

Comments:

TADS bank # 5679

Objective: O-RO-03-04-06 EO6 (SRO only)

K/A: G2311

Question Source: Bank

10CFR Ref: 45.9

Difficulty Level: 4.0

Exam Level: SRO

Cognitive Level: Comprehension-Analysis

Importance: 3.2

Tier: 3 **Group**