

FINAL SUBMITTAL

**H. B. ROBINSON NUCLEAR PLANT
EXAM NO. 50-261/2000-301**

MAY 3, 2000

FINAL RO WRITTEN EXAM

**U.S. Nuclear Regulatory Commission
Site-Specific
Written Examination**

Applicant Information

Name: ANSWER KEY	Region: II
Date:	Facility/Unit: H.B. ROBINSON
License Level: RO	Reactor Type: WESTINGHOUSE
Start Time:	Finish Time:

Instructions

Use the answer sheets provided to document your answers. Staple this cover sheet on top of the answer sheets. The passing grade requires a final grade of at least 80.00 percent. Examination papers will be collected five hours after the examination starts.

Applicant Certification

All work done on this examination is my own. I have neither given nor received aid.

_____ **Applicant's Signature**

Results

Examination Value _____ Points

Applicant's Score _____ Points

Applicant's Grade _____ Percent

Question: 1

Given the following conditions:

- The plant is operating at 100% power.
- An electrical fault occurs which results in a loss of power to Instrument Bus 3.

Which ONE (1) of the following describes the impact that the loss of Instrument Bus 3 has on the automatic operation of the Engineered Safeguards Features (ESF) Actuation System?

	TRAIN 'A' ESF LOADS	TRAIN 'B' ESF LOADS
a.	Capable of being automatically started by sequencer	Capable of being automatically started by sequencer
b.	Capable of being automatically started by sequencer	NOT capable of being automatically started by sequencer
c.	NOT capable of being automatically started by sequencer	Capable of being automatically started by sequencer
d.	NOT capable of being automatically started by sequencer	NOT capable of being automatically started by sequencer

Answer:

b.	Capable of being automatically started by sequencer	NOT capable of being automatically started by sequencer
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Question: 2

Given the following conditions:

- A Reactor startup is in progress.
- Service Water pressure in **BOTH** headers decreases and stabilizes at 25 psig.

Assuming **NO** operator action, cooling flow is lost to the ...

- a. Component Cooling Water Heat Exchangers.
- b. Turbine Oil Coolers.
- c. Instrument Air Compressors 'A' and 'B'.
- d. Steam Driven Auxiliary Feedwater Pump.

Answer:

- b. Turbine Oil Coolers.

Question: 3

Given the following plant conditions:

- Unit 2 is at 30% power.
- A plant shutdown is in progress.
- Intermediate Range channel N-35 fails HIGH.
- The LEVEL TRIP switch on N-35 is in NORMAL.

Assuming **NO** operator actions regarding the failed Intermediate Range channel, a reactor trip ...

- a. should have already occurred.
- b. will occur as power is reduced below 25%.
- c. will occur as power is reduced below 20%.
- d. will occur as power is reduced below 10%.

Answer:

- d. will occur as power is reduced below 10%.

Question: 4

Given the following conditions:

- A Reactor Trip and SI has occurred.
- RCS activity is normal.

Which ONE (1) of the following would be an **EXPECTED** indication that a tube leak has subsequently occurred in S/G 'A'?

- a. Pressurizer pressure increasing
- b. R-19A, SG Blowdown Radiation Monitor, increasing
- c. R-31A, Main Steamline Monitor, in alarm
- d. S/G 'A' level increasing

Answer:

- d. S/G 'A' level increasing

Question: 5

Given the following conditions:

- An automatic CV Spray actuation has occurred.
- CV Spray Pump 'A' trips and will **NOT** restart.
- The operator closes SI-880A and SI-880B, CV Spray Pump 'A' Discharge Valves.

Closing SI-880A and SI-880B ensures that if the check valve upstream of either SI-880 valve fails ...

- a. gas binding of the CV spray pump is prevented **AND** containment integrity is maintained.
- b. containment integrity is maintained **AND** the RWST does **NOT** become contaminated.
- c. the RWST does **NOT** become contaminated **AND** a LOCA outside containment does **NOT** occur.
- d. gas binding of the CV spray pump is prevented **AND** a LOCA outside containment does **NOT** occur.

Answer:

- a. gas binding of the CV spray pump is prevented **AND** containment integrity is maintained.

Question: 6

Given the following conditions:

- Reactor Power at 100%
- Control Room Area Radiation monitor R-1 alarms.

Control Room Ventilation ...

- a. must be manually aligned for Emergency Pressurization Mode.
- b. must be manually aligned for Emergency Recirculation Mode.
- c. automatically aligns for Emergency Pressurization Mode.
- d. automatically aligns for Emergency Recirculation Mode.

Answer:

- c. automatically aligns for Emergency Pressurization Mode.

Question: 7

Given the following conditions:

- Reactor power is 85%.
- Control Rod Bank 'D' Demand is at 195 steps.
- IRPI indication for Bank D Control Rods are as follows:

BANK 'D' ROD	IRPI POSITION
D-8	123"
M-8	121"
H-4	120"
H-8	110"
H-12	122"

Design power peaking and Shutdown Margin Limits ...

- a. are met under these conditions.
- b. will be met if Control Rod H-8 is withdrawn to 115".
- c. will be met if power is reduced below 80%.
- d. will be met if Control Rod D-8 is inserted to 120".

Answer:

- b. will be met if Control Rod H-8 is withdrawn to 115".

Question: 8

Which ONE (1) of the following describes the effect of the given signals on an in-progress Containment Purge?

	CONTAINMENT HIGH RADIATION SIGNAL (R-11/12)	MANUAL SAFETY INJECTION SIGNAL	MANUAL CONTAINMENT SPRAY SIGNAL
a.	Secured	Secured	NO effect
b.	Secured	NO effect	Secured
c.	NO effect	Secured	Secured
d.	Secured	Secured	Secured

Answer:

d.	Secured	Secured	Secured
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Question: 9

After resetting Safety Injection, to reset IVSW the operator must depress ...

- a. IVSW RESET **ONLY**.
- b. CONT VENT ISOL RESET and IVSW RESET.
- c. PHASE B RESET and IVSW RESET.
- d. PHASE A RESET and IVSW RESET.

Answer:

- d. PHASE A RESET and IVSW RESET.

Question: 10

Given the following conditions:

- The plant is operating at 100% power.
- A determination has been made that a primary-to-secondary leak of 0.06 gpm exists.

Which ONE (1) of the following would **NOT** be an indication of which S/G is leaking?

- a. Steam Generator Blowdown Radiation Monitors (R-19A/B/C)
- b. Steamline Radiation Monitors (R-31A/B/C)
- c. Steam Generator Levels
- d. Chemistry analysis of Steam Generators

Answer:

- c. Steam Generator Levels

Question: 11

Which ONE (1) of the following identifies the Instrument Buses normally supplied by Inverters 'A' and 'B'?

	Inverter A	Inverter B
a.	IB 1	IB 2
b.	IB 2	IB 1
c.	IB 2	IB 3
d.	IB 3	IB 2

Answer:

c.	IB 2	IB 3
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Question: 12

Given the following conditions:

- The unit is in Cold Shutdown.
- RCPs "A" and "C" are running.
- A Hydrogen Peroxide (H_2O_2) addition is being performed for crud burst cleanup.

Which ONE (1) of the following will be the result if TCV-143, VCT/DEMIN DIVERSION VALVE, is MANUALLY placed in the VCT position?

- a. RCS boron concentration will decrease
- b. H_2 levels in the RCS will increase
- c. Activity levels in the Seal Injection Filters will increase
- d. The RC filter will be required to be changed out LESS frequently

Answer:

- c. Activity levels in the Seal Injection Filters will increase

Question: 13

Given the following conditions:

- A large break LOCA occurred at 1400.
- The SSO declared a Site Area Emergency at 1410.

Which ONE (1) of the following is the **LATEST** time to complete the associated action?

	REQUIRED ACTION	LATEST TIME TO COMPLETE ACTION
a.	Activate ERDS	1610
b.	Notify State and County Warning Points	1425
c.	Notify NRC	1425
d.	Notify INPO	1500

Answer:

b.	Notify State and County Warning Points	1425
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Question: 14

Given the following conditions:

- The plant is operating at 100% power.
- RCP "B" #1 Seal Leakoff goes offscale high (greater than 6 gpm).
- RCP "A" and RCP "C" #1 Seal Leakoffs go off scale low.

Which ONE (1) of the following describes the major actions to be taken?

- a. Reduce Reactor power to < 40%, then stop RCP "B"
- b. Reduce Reactor power to < 10%, then stop RCPs "A" and "C"
- c. Trip the Reactor, then stop RCP "B"
- d. Trip the Reactor, then stop RCPs "A" and "C".

Answer:

- c. Trip the Reactor, then stop RCP "B"

Question: 15

While performing OST-012, "Power Range Calorimetric During Power Operation (Manual) Daily," Which ONE (1) of the following will result in ACTUAL power being **HIGHER THAN** INDICATED power?

- a. S/G Blowdown was secured prior to starting the data collection.
- b. MDAFW Pump 'A' is operating with flow being delivered to a S/G.
- c. Indicated feedwater temperature used was lower than actual.
- d. Indicated feedwater flow used was higher than actual.

Answer:

- b. MDAFW Pump 'A' is operating with flow being delivered to a S/G.

Question: 16

Given the following conditions:

- Unit 2 is operating at 100% power.
- CST level is 29% (40,000 gallons available).
- EDG "A" is out of service.
- RWST level is 89% (293,000 gallons available).
- SI Accumulator pressure is 612 psig.

Which ONE (1) of the following must be restored within one (1) hour, in accordance with Technical Specifications?

- a. CST level
- b. EDG "A"
- c. RWST level
- d. SI Accumulator pressure

Answer:

- c. RWST level

Question: 17

Given the following conditions:

- Unit 2 is operating at 20% power.
- System Engineering notifies the Control Room that a generic issue requires declaring ALL AFW pumps inoperable.

In accordance with Technical Specifications, which ONE (1) of the following describes the IMMEDIATE ACTIONS and the UNIT STATUS required?

	IMMEDIATE ACTIONS	UNIT STATUS
a.	Initiate action to restore at least one (1) AFW Pump	Maintain in MODE 1
b.	Initiate action to restore at least two (2) AFW Pumps	Place in MODE 2
c.	Initiate action to restore at least one (1) AFW Pump	Place in MODE 3
d.	Initiate action to restore at least two (2) AFW Pumps	Place in MODE 4

Answer:

a.	Initiate action to restore at least one (1) AFW Pump	Maintain in MODE 1
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Question: 18

Which ONE (1) of the following provides the indication you would expect to see if **NO** ground was present while checking for DC Bus grounds using Battery Charger "A-1"?

- a. Ground Detection voltmeter reads 65 volts
- b. DC Output voltmeter reads 65 volts
- c. Ground detection light illuminated
- d. Ground fault relay flag indicates reset

Answer:

- b. DC Output voltmeter reads 65 volts

Question: 19

Given the following conditions:

- The plant is operating at 85% power 30 days following completion of a Refueling Outage.
- AFD is -2 with a target of -1 .
- Rod Control is in AUTO when rods begin stepping out for **NO** apparent reason.
- The operator places Rod Control in MAN and rod motion stops.
- Rods step out 4 steps before Rod Control is placed in MAN.
- The operator manually inserts the rods 4 steps.

Which ONE (1) of the following describes the reason for manually inserting rods 4 steps?

- a. Ensure ΔT is maintained below the $OT_{\Delta T}$ trip setpoint
- b. Ensure power is maintained below the High Flux trip setpoint
- c. Restore Tave to program
- d. Restore AFD within the target band

Answer:

- c. Restore Tave to program

Question: 20

A Design Basis LOCA has occurred.

Which ONE (1) of the following describes the **MINIMUM** combination of equipment that will ensure Containment does **NOT** exceed design limits?

	CONTAINMENT SPRAY PUMPS	CONTAINMENT FAN COOLERS
a.	Pumps 'A' and 'B'	None
b.	Pump 'A'	Fan Cooler HVH-1
c.	Pumps 'A' and 'B'	Fan Coolers HVH-1 and HVH-2
d.	None	Fan Coolers HVH-1, HVH-2, and HVH-3

Answer:

a.	Pumps 'A' and 'B'	None
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Question: 21

Given the following conditions:

- The plant has tripped following a loss of offsite power.
- RCS pressure is 1850 psig and stable.
- S/G pressures are 1030 psig and stable.
- Subcooling indicates 27 °F and stable.
- CETs indicate 599 °F and stable.
- RCS hot leg temperatures indicate 597 °F and stable.
- RCS cold leg temperatures indicate 550 °F and stable.

Which ONE (1) of the following describes which Natural Circulation parameter is **NOT** met and the action to take to establish Natural Circulation?

	NC PARAMETER NOT MET	ACTION TO ESTABLISH NC
a.	RCS T-cold	Open S/G PORVs
b.	RCS T-cold	Open Steam Dumps
c.	RCS Subcooling	Open S/G PORVs
d.	RCS Subcooling	Open Steam Dumps

Answer:

c.	RCS Subcooling	Open S/G PORVs
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Question: 22

Given the following conditions:

- The unit is operating at 90% power.
- Control Bank "D" rods are at 180 steps.
- Indicated Axial Flux Difference is approaching its lower limit of -4%.

Which ONE (1) of the following operator-induced changes in plant parameters will cause AFD to be restored to the target value?

	BORON CONCENTRATION	ROD POSITION	REACTOR POWER
a.	Decrease	NO Change	Increase
b.	Increase	Withdraw Rods	NO Change
c.	NO Change	Insert Rods	Decrease
d.	NO Change	NO Change	Increase

Answer:

b.	Increase	Withdraw Rods	NO Change
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Question: 23

Which ONE (1) of the following would be an **ACCEPTABLE** work schedule for an operator providing shift relief **WITHOUT** requiring any special authorization?

	MAY 6, 2000	MAY 7, 2000
a.	0700-2400	OFF
b.	0700-1900	0500-1500
c.	0700-2100	0300-0700
d.	0700-2100	0700-1900

Answer:

b.	0700-1900	0500-1500
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Question: 24

Given the following conditions:

- A Monitor Tank has developed a large leak.
- Maintenance personnel are entering the area in an attempt to repair the leak.
- An RNP Maintenance person has accumulated a total dose of 1000 mRem this year.
- The general dose rate in the area is 500 mRem/hour.

What is the **MAXIMUM** time this Maintenance person can stay in the area without exceeding his annual administrative dose limit, assuming **NO** extensions are given?

- a. 1 hour
- b. 2 hours
- c. 6 hours
- d. 8 hours

Answer:

- b. 2 hours

Question: 25

Given the following conditions:

- The plant is in Mode 2 at 4% power.
- "A" and "B" battery chargers are in service.
- "A-1" and "B-1" battery chargers are in standby.
- "B" DC Bus voltage decreases to 120 volts.

Which ONE (1) of the following provides the DC distribution system indication and response, if any, to the above conditions?

- a. APP-036-D3, BATT A/B LO VOLT, alarms **AND** Battery charger "B-1" automatically starts
- b. APP-036-D2, BATT CHARGER B/B-1 TROUBLE, alarms **AND** Battery charger "B" automatically trips
- c. APP-036-D2, BATT CHARGER B/B-1 TROUBLE, alarms **AND** Inverter "B" automatically trips
- d. APP-036-D3, BATT A/B LO VOLT, alarms, but **NO** automatic actions occur

Answer:

- d. APP-036-D3, BATT A/B LO VOLT, alarms, but **NO** automatic actions occur

Question: 26

Given the following conditions:

- Reactor Power is 60%.
- After being within the target band for the previous 38 days, a power reduction has occurred.
- Axial Flux Difference (AFD) has been outside the target band for the past seventy (70) minutes.

Which ONE (1) of the following identifies the number of penalty points accumulated and the proper response?

- a. 35 penalty points have been accumulated. There are **NO** restrictions on power level.
- b. 70 penalty points have been accumulated. Power must be maintained below 90%.
- c. 35 penalty points have been accumulated. Power must be maintained $< 60\%$.
- d. 70 penalty points have been accumulated. Power must be reduced below 50%.

Answer:

- d. 70 penalty points have been accumulated. Power must be reduced below 50%.

Question: 27

With the exception of SI-866A and B, Hot Leg Injection Valves, all motor operated valves in the Safety Injection system numbered with a suffix of "A" or "C" are powered from ...

- a. MCC-5.
- b. MCC-6.
- c. MCC-9.
- d. MCC-10.

Answer:

- a. MCC-5.

Question: 28

FRP-S.2, "Response to Loss of Core Shutdown," restores the core to a shutdown condition by adding negative reactivity by ...

- a. borating the RCS.
- b. tripping S/D Bank "A" rods.
- c. depressurizing to inject the SI accumulators.
- d. allowing the RCS to heatup.

Answer:

- a. borating the RCS.

Question: 29

Given the following conditions:

- A small break LOCA has occurred.
- All RCPs are stopped.
- RVLIS full range is indicating 35%.
- Subcooling is 0 °F.

The **MINIMUM** CET temperature at which an Inadequate Core Cooling condition would be determined to exist is ...

- a. 600 °F.
- b. 650 °F.
- c. 700 °F.
- d. 1200 °F.

Answer:

- c. 700 °F.

Question: 30

Which ONE (1) of the following states a function of HVE-3 and HVE-4, CV IODINE RMVL FANS?

- a. Provides cooling to the reactor vessel insulation surface and for the primary concrete shielding
- b. Provides for the prevention of stratification of hot air in the containment dome
- c. Provides purging of the containment vessel
- d. Provides pressure and vacuum relief for the containment vessel

Answer:

- b. Provides for the prevention of stratification of hot air in the containment dome

Question: 31

Given the following conditions:

- The plant is in MODE 1.
- CV Temperature is 111 °F.
- CV Sump level is 4.5 inches.
- CV Pressure is 0.4 psig.
- R-7, Incore Room Monitor, has a valid high alarm.

Which ONE (1) of the following is occurring?

- a. Steam Generator tube leak
- b. CV Pressure Relief has been commenced
- c. Incore Flux Mapping has been commenced
- d. RCS Drain Valve packing leak

Answer:

- c. Incore Flux Mapping has been commenced

Question: 32

Which ONE (1) of the following states the **MINIMUM** assured Emergency Diesel Engine starts available from the Emergency Diesel Starting Air System when at normal system air pressure?

- a. 2
- b. 3
- c. 5
- d. 8

Answer:

- d. 8

Question: 33

Given the following conditions:

- The plant is operating at 18% power.
- All RCPs are running.

Which ONE (1) of the following will occur if RCP 'A' trips due to an undervoltage condition on its supply bus?

- Reactor trips on Low Flow
- Reactor trips on RCP Breaker Trip
- Reactor trips on RCP Bus UV
- Reactor remains critical

Answer:

- Reactor remains critical

Question: 34

Given the following conditions:

- A plant cooldown is in progress in accordance with GP-007, "Plant Cooldown From Hot Shutdown to Cold Shutdown."
- RCS pressure has been reduced below 2000 psig.
- SI has been blocked by placing the PZR PRESS/HI STM LINE Δ P Block/Unblock switch momentarily in the BLOCK position.
- During a stop in the RCS depressurization, RCS pressure increases to 2040 psig.

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

- a. Block the SI signals again, prior to decreasing RCS pressure below 2000 psig.
- b. Continue with the RCS depressurization since the SI block signals "seal-in."
- c. Block the SI signals again, after decreasing RCS pressure below 2000 psig.
- d. Continue with the RCS depressurization since the SI automatic unblock occurs at 2235 psig.

Answer:

- c. Block the SI signals again, after decreasing RCS pressure below 2000 psig.

Question: 35

Given the following conditions:

- The unit is at 100% power.
- CCW Heat Exchanger outlet temperature is 106°F and increasing slowly.
- Lake Robinson temperature is 91°F.
- Service Water System pressure is 48 psig.
- The highest reading RCP Motor bearing temperature is 180°F and increasing slowly.

Which ONE (1) of the following describes the appropriate response?

- a. Start standby SW pump
- b. Trip the Reactor and stop the RCPs
- c. Reduce heat loads on CCW system
- d. Start standby CCW Pump

Answer:

- c. Reduce heat loads on CCW system

Question: 36

Given the following conditions:

- A Natural Circulation Cooldown is in progress.
- Channel 1 of the ICCM System is out-of-service.
- An ERROR code on Channel 2 of the ICCM System, is received, indicating that **ALL** CET inputs are **BAD**.

Subcooling can still be determined by the Channel 2 Subcooling Margin Monitor using ...

- a. loop cold leg temperatures and pressurizer pressure.
- b. loop hot leg temperatures and pressurizer pressure.
- c. loop cold leg temperatures and wide range RCS pressure.
- d. loop hot leg temperatures and wide range RCS pressure.

Answer:

- d. loop hot leg temperatures and wide range RCS pressure.

Question: 37

Given the following plant conditions:

RHR is in service.

RCP "A" is operating.

RCPs "B" and "C" are secured.

RCP "A" #1 Seal Leakoff temperature is approaching the alarm setpoint.

Which ONE (1) of the following conditions would prohibit opening CVC-307, PRI SEAL BYP ISO?

- a.
 - RCS pressure is 290 psig
 - RCS temperature is 215 °F.
 - RHR HX discharge temperature is 208 °F.
- b.
 - CVC-303A, RCP "A" #1 Seal Leakoff valve is open
 - CVC-303B, RCP "B" #1 Seal Leakoff valve is closed
 - CVC-303C, RCP "C" #1 Seal Leakoff valve is closed
- c.
 - RCP "A" #1 seal leakoff flow rate is 0.8 gpm
 - RCP "B" #1 seal leakoff flow rate is 0 gpm
 - RCP "C" #1 seal leakoff flow rate is 0 gpm
- d.
 - Seal injection flow rate to RCP "A" is 11 gpm
 - Seal injection flow rate to RCP "B" is 8 gpm
 - Seal injection flow rate to RCP "C" is 7 gpm

Answer:

- b.
 - CVC-303A, RCP "A" #1 Seal Leakoff valve is open
 - CVC-303B, RCP "B" #1 Seal Leakoff valve is closed
 - CVC-303C, RCP "C" #1 Seal Leakoff valve is closed

Question: 38

Given the following conditions:

- The crew is performing EPP-012, "Post-SGTR Cooldown Using Backfill."
- RCS and Ruptured S/G pressures are both 845 psig .
- Pressurizer liquid temperature is 480 °F.
- The crew fails to raise pressurizer liquid temperature to saturation for the ruptured S/G pressure (527 °F) prior to attempting to depressurize the RCS.

Which ONE (1) of the following describes the response of the plant when the Pressurizer Spray Valve is opened?

	PRESSURIZER LEVEL	RUPTURED SG LEVEL	REACTOR VESSEL LEVEL
a.	Decreases	NO Change	Decreases
b.	Increases	Decreases	NO Change
c.	Decreases	Increases	NO Change
d.	Increases	NO Change	Decreases

Answer:

b.	Increases	Decreases	NO Change
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Question: 39

Which ONE (1) of the following push buttons located on an RMS rate meter drawer in the Control Room can be depressed to verify the operability of the RMS drawer **AND** the rate meter?

- a. CHECK SOURCE
- b. CKT TEST
- c. ALARM/RESET
- d. FAIL

Answer:

- a. CHECK SOURCE

Question: 40

Given the following conditions:

- The plant is operating at 100% power.
- PZR level is 54% and increasing.
- RCS pressure is 2160 psig and decreasing.
- APP-003-B3, PRT HI TEMP, is in alarm.
- APP-003-C3, PRT HI PRESS, is in alarm.
- APP-003-D3, PRT HI/LO LVL, is in alarm.
- APP-003-E6, PZR PORV LN HI TEMP, is in alarm.
- APP-003-F6, PZR SAFETY VLV LINE HI TEMP, is in alarm.
- APP-003-D6, PZR PORV/SAFETY VALVE OPEN, is in alarm.

Which ONE (1) of the following describes the immediate action(s) to be taken?

- a. Verify CLOSED both PZR PORV(s)
- b. CLOSE CVC-303A,B, and C, RCP 'A', 'B', and 'C' SEAL LEAKOFF valves
- c. CLOSE CVC-381, SEAL WTR RTRN ISO valve
- d. Trip the reactor and follow PATH-1

Answer:

- a. Verify CLOSED both PZR PORV(s)

Question: 41

Given the following conditions:

- Pressurizer Heater Control Group is ON.
- Pressurizer Heater Backup Group 'A' is in AUTO.
- Pressurizer Heater Backup Group 'B' is in AUTO.
- Pressurizer Level transmitter LT-459 fails LOW.

Assuming **NO** operator actions, which **ONE** (1) of the following describes the status of the Pressurizer Heaters?

	Control Group	Backup Group 'A'	Backup Group 'B'
a.	ON	OFF	ON
b.	ON	OFF	OFF
c.	OFF	ON	OFF
d.	OFF	OFF	OFF

Answer:

d.	OFF	OFF	OFF
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Question: 42

Given the following conditions:

- During a cooldown and depressurization, Pressurizer Pressure is at 1800 psig.
- All operator actions have been performed as directed by GP-007, "Plant Cooldown From Hot Shutdown to Cold Shutdown."

If PC-444J is operated in AUTO with the potentiometer set to 0.0 ...

- a. heaters will energize, raising pressure until the PORVs open at approximately 2335 psig.
- b. heaters will energize, raising pressure until the spray valves open at approximately 2260 psig.
- c. sprays will open, decreasing pressure until a low pressure SI occurs at approximately 1715 psig.
- d. sprays will open, decreasing pressure to approximately 1700 psig.

Answer:

- d. sprays will open, decreasing pressure to approximately 1700 psig.

Question: 43

Given the following conditions:

- The plant is operating at 80% power when Instrument Bus 3 is de-energized.
- While investigating the failure, an electrician inadvertently causes a loss of Instrument Bus 4.
- A reactor trip occurs .

Assuming **NO** operator actions, which **ONE (1)** of the following describes the response of Safety Injection, Phase A, Phase B, and Containment Spray?

	SAFETY INJECTION SIGNAL	PHASE A SIGNAL	PHASE B SIGNAL	CONTAINMENT SPRAY SIGNAL
a.	NOT Actuated	NOT Actuated	NOT Actuated	NOT Actuated
b.	Actuated	Actuated	Actuated	Actuated
c.	Actuated	Actuated	Actuated	NOT Actuated
d.	Actuated	Actuated	NOT Actuated	NOT Actuated

Answer:

d.	Actuated	Actuated	NOT Actuated	NOT Actuated
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Question: 44

Which ONE (1) of the following components, if Caution Tagged due to an abnormal condition, would require a Caution Cap be placed on the RTGB and a caution tag on the local control in accordance with OMM-001-9, "Equipment Tagging"?

- a. RHR-752A, RHR PUMP "A" SUCTION
- b. SI Pump "A"
- c. SI-855, ACCUMULATOR NITROGEN SUPPLY
- d. CCW Pump "A"

Answer:

- d. CCW Pump "A"

Question: 45

Given the following conditions:

- A reactor trip has occurred.
- PCV-1716, IA to Containment, has failed closed.

Pressurizer pressure is raised by using heaters and decreased by ...

- a. normal spray.
- b. PORVs.
- c. auxiliary spray.
- d. head vents.

Answer:

- b. PORVs.

Question: 46

Which ONE (1) of the following supplies power to the majority of the Process Radiation Monitors?

- a. Instrument Bus 1 & 6
- b. Instrument Bus 2 & 7
- c. Instrument Bus 3 & 8
- d. Instrument Bus 4 & 9

Answer:

- c. Instrument Bus 3 & 8

Question: 47

Given the following conditions:

- The crew is performing AOP-016, "Excessive Plant Leakage."
- APP-001-A5, RV FLNG LEAKOFF HI TEMP, is in alarm.
- TI-401, Reactor Vessel Leak Off Temp, is rising.

An increase in level should be noted in the ...

- a. Reactor Coolant Drain Tank (RCDT).
- b. Volume Control Tank (VCT).
- c. Containment Sump.
- d. Pressurizer Relief Tank (PRT).

Answer:

- a. Reactor Coolant Drain Tank (RCDT).

Question: 48

Given the following conditions:

- An accident has occurred which has caused Containment pressure to increase to 6.5 psig.
- Containment pressure has been decreased to 1.6 psig.
- Containment radiation levels are currently 75 R/hour and rising slowly.
- A step in the recovery procedure states:

"Control PZR Level between 22% [40%] and 72% [68%]."

Which ONE (1) of the following identifies the **MINIMUM** and **MAXIMUM** indicated pressurizer levels that are to be maintained **AND** the Containment parameter that this decision is based upon?

	MINIMUM	MAXIMUM	CONTAINMENT PARAMETER
a.	22%	72%	Pressure
b.	22%	72%	Radiation
c.	40%	68%	Pressure
d.	40%	68%	Radiation

Answer:

c.	40%	68%	Pressure
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Question: 49

Given the following conditions:

- The Reactor has just been taken critical following a trip at EOL.
- Power is currently 10^{-8} amps.
- The flange gasket on S/G 'A' PORV has failed.

Which ONE (1) of the following describes the response of RCS temperature and Reactor Power to this event?

	RCS TEMPERATURE	REACTOR POWER
a.	Decreases	Increases
b.	Decreases	NO Change
c.	Increases	Increases
d.	Increases	NO Change

Answer:

a.	Decreases	Increases
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Question: 50

AOP-022, "Loss of Service Water," provides actions to respond to SW pipe ruptures in all of the following locations **EXCEPT** the ...

- a. Auxiliary Building.
- b. Turbine Building.
- c. Intake Area.
- d. Containment.

Answer:

- d. Containment.

Question: 51

Which ONE (1) of the following is assumed to operate normally to ensure that the RCS Pressure Safety Limit is **NOT** exceeded during a complete loss of external load without a direct reactor trip?

- a. PZR PORVs
- b. PZR Spray Valves
- c. Main Steam Safety Valves
- d. Steam Dumps

Answer:

- c. Main Steam Safety Valves

Question: 52

During the performance of FRP-H.2, "Response To Steam Generator Overpressure", the operator is directed to verify that feedwater is isolated to the affected S/G.

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

- a. With the S/G overpressurized, additional feedwater could cause excessive cooling of the RCS resulting in a Safety Injection
- b. With the S/G overpressurized, additional feedwater could cause excessive cooling of the S/G resulting in thermal shock
- c. Main Feedwater flow is a potential source of S/G overpressurization
- d. To protect the feedwater piping from exceeding design pressure

Answer:

- c. Main Feedwater flow is a potential source of S/G overpressurization

Question: 53

Given the following conditions:

- The Unit is at 100% power
- APP-001-F7, INST AIR HDR LO PRESS, has alarmed.
- AOP-017, LOSS OF INSTRUMENT AIR, is in use.
- Instrument air pressure currently reads 79 psig and slowly decreasing.

SA to IA cross connect ...

- a. valve, SA-5 will automatically OPEN to supply IA from SA through the IA aftercoolers and separators.
- b. bypass filter isolation valves, SA-220 & SA-221, will automatically OPEN to supply IA from SA through a filter.
- c. valve, SA-5 will be manually OPENED to supply IA from SA through the IA aftercoolers and separators.
- d. bypass filter isolation valves, SA-220 & SA-221, will be manually OPENED to supply IA from SA through a filter.

Answer:

- d. bypass filter isolation valves, SA-220 & SA-221, will be manually OPENED to supply IA from SA through a filter.

Question: 54

Approximately 11 hours after a Large Break LOCA it is necessary to switch from cold leg recirculation to hot leg recirculation to ...

- a. quench the boiling at the core exit and prevent boron precipitation.
- b. prevent sediment or loose pieces from inhibiting downcomer flow.
- c. prevent uneven heating and annealing of the thermal shield.
- d. meet the SI flow requirement due to the reduction in decay heat.

Answer:

- a. quench the boiling at the core exit and prevent boron precipitation.

Question: 55

Given the following conditions:

- A plant startup is in progress with reactor power at 8%.
- Power is lost to Instrument Bus 2.

A Reactor Trip occurs as a result of a ...

- a. SR High Flux Trip.
- b. IR High Flux Trip.
- c. PR High Flux - Low Setpoint Trip.
- d. Low RCS Loop Flow Trip.

Answer:

- b. IR High Flux Trip.

Question: 56

Which ONE (1) of the following is the reason the RCS is depressurized in FRP-P.1, "Response to Imminent Pressurized Thermal Shock"?

- a. Allow the accumulators to inject
- b. Reduce the subcooling margin
- c. Increase pressurizer level
- d. Increase safety injection flow

Answer:

- b. Reduce the subcooling margin

Question: 57

Given the following conditions:

- Plant load is being reduced because of high vibrations on Condensate Pump "A".
- The plant is currently at 48% power.
- Two Main Feedwater Pumps, two Condensate Pumps and a Heater Drain Tank Pump are in service.
- Condensate Pump "A" trips.

Which ONE (1) of the following describes the expected plant response?

- a. Both Main Feedwater Pumps will trip resulting in a Reactor trip due to low Steam Generator level
- b. One Main Feedwater Pump will trip but sufficient Feedwater flow exists to maintain Steam Generator level
- c. One Main Feedwater Pump will trip which will result in insufficient Feedwater flow to maintain Steam Generator level
- d. A Turbine runback will occur reducing steam flow to within the capacity of the available feedwater flow

Answer:

- b. One Main Feedwater Pump will trip but sufficient Feedwater flow exists to maintain Steam Generator level

Question: 58

Given the following conditions:

- Fuel movement in Containment is in progress.
- The CV Upender operator reports that CV humidity is 55%.

Which ONE (1) of the following describes the required control room response?

- a. Stop the CV purge **AND** terminate Refueling activities until humidity is < 50%
- b. Stop the CV purge **OR** terminate Refueling activities until humidity is < 50%
- c. Continue the CV purge, **BUT** terminate Refueling activities until humidity is < 50%
- d. Continue the CV purge **AND** Refueling activities since humidity is within limits

Answer:

- d. Continue the CV purge **AND** Refueling activities since humidity is within limits

Question: 59

Given the following conditions:

- The unit has been at 100% power for 10 days following a Refueling Outage.
- A turbine runback to 70% has just occurred.
- Control Bank D rods are at 90 steps.
- APP-005-E2, ROD CONT SYSTEM URGENT FAILURE, has alarmed.
- APP-005-B5, ROD BANKS A/B/C/D LO LIMIT, has alarmed.
- APP-005-C5, ROD BANKS A/B/C/D LO-LO LIMIT, has alarmed.
- The urgent failure condition **CANNOT** be cleared.

To clear the LO LIMIT and LO-LO LIMIT alarms reactor power must be limited to a **MAXIMUM** of approximately ...

- a. 54%.
- b. 59%.
- c. 63%.
- d. 70%.

Answer:

- c. 63%.

Question: 60

Given the following conditions:

- The plant is in MODE 6.
- A loss of RHR occurs with a loss of RCS inventory.
- Refueling Cavity level has dropped more than 29" below the operating deck.
- The cavity seal is **NOT** leaking.
- AOP-020, "Loss of Residual Heat Removal," has been entered.

Which ONE (1) of the following describes the preferred order of injection paths available to control the loss of level situation?

- a.
 1. Cold leg injection
 2. Hot leg injection
 3. Charging
- b.
 1. Charging
 2. Cold leg injection
 3. Hot leg injection
- c.
 1. Charging
 2. Cold leg injection
 3. RWST gravity feed
- d.
 1. Cold leg injection
 2. RWST gravity feed
 3. VCT overpressure

Answer:

- b.
 1. Charging
 2. Cold leg injection
 3. Hot leg injection

Question: 61

Which ONE (1) of the following describes a plant condition that would warrant entry into EPP-20, "LOCA OUTSIDE OF CONTAINMENT?"

- a. A LOCA and R-5, Spent Fuel Pit Area, in alarm
- b. A LOCA with **NO** increase in CV pressure or sump level and R-4, Charging Room, in alarm
- c. A LOCA with R-2, Containment, in alarm
- d. An RHR Pit Hi level alarm

Answer:

- b. A LOCA with **NO** increase in CV pressure or sump level and R-4, Charging Room, in alarm

Question: 62

Given the following plant conditions:

- The plant was initially in a normal 100% lineup.
- A loss of secondary steam load has occurred.
- The reactor did **NOT** automatically trip.

What is the effect of the transient on the following values, considering the change in RCS pressure **ONLY**?

	EFFECT OF RCS PRESSURE CHANGE ON OTΔT SETPOINT	EFFECT OF RCS PRESSURE CHANGE ON DNBR
a.	Decreases	Decreases
b.	Decreases	Increases
c.	Increases	Decreases
d.	Increases	Increases

Answer:

d.	Increases	Increases
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Question: 63

Given the following conditions:

- A natural circulation cooldown is in progress following a loss of offsite power and a fire in the south cable vault.
- RCS Pressure is being reduced to 1200 psig when PZR level rapidly increases from 25% to 78%.

The likely cause of this level increase is ...

- a. steam void formation in the RX vessel head.
- b. S/G PORV's failing shut with resulting heatup causing RCS liquid expansion.
- c. swell of PZR liquid due to opening of the Auxiliary Spray Valve to lower RCS pressure.
- d. swell of PZR liquid due to opening of a PZR PORV to lower RCS pressure.

Answer:

- a. steam void formation in the RX vessel head.

Question: 64

With only ONE (1) Main Feedwater Pump and TWO (2) Condensate Pumps in service, AOP-010, "Main Feedwater/Condensate Malfunctions", limit operations to a MAXIMUM ...

- a. First Stage Turbine Pressure of 400 psig.
- b. Reactor Power level of 50%.
- c. Reactor Power level of 60%.
- d. Condensate Header Pressure of 560 psig.

Answer:

- c. Reactor Power level of 60%.

Question: 65

Given the following conditions:

- The plant is operating at 60% power.
- Rod control is in AUTO.
- RCS boron concentration is 150 ppm
- Control rod H-6 drops and is sensed by Power Range NI N-42 only.

Assuming **NO** operator actions, which ONE (1) of the following describes the effect on the plant?

- a. Tave increases due to a dropped rod turbine runback, but rods **CANNOT** respond in AUTO
- b. Tave increases due to a dropped rod turbine runback, and rods step inward
- c. Tave decreases due to a dropped rod with **NO** turbine runback, but rods **CANNOT** respond in AUTO
- d. Tave decreases due to a dropped rod with **NO** turbine runback, and rods step outward

Answer:

- b. Tave increases due to a dropped rod turbine runback, and rods step inward

Question: 66

Given the following plant conditions:

- Ten (10) hours ago, 2 rods in SD Bank "A" dropped into the core.
- The Reactor was manually tripped.
- Repairs to SD Bank "A" are expected to be completed in four (4) hours.
- Estimated Critical Condition RCS boron concentration is 770 ppm.
- Mode 3 SDM is 890 ppm boron.
- Present RCS boron concentration is 830 ppm.

Which ONE (1) of the following describes the actions required for the given conditions?

- a. Dilute to 770 ppm with all rods inserted
- b. Dilute to 770 ppm and withdraw SD Bank "B"
- c. Maintain 830 ppm and withdraw SD Bank "B"
- d. Borate to 890 ppm with all rods inserted

Answer:

- d. Borate to 890 ppm with all rods inserted

Question: 67

Given the following conditions:

- A large steam break has occurred inside containment.
- Phase A and Phase B isolation signals have occurred.
- Pressurizer Relief Tank level and pressure are increasing.

Which ONE (1) of the following relief valves could cause these changes in the PRT under these conditions?

- a. CVC-382, RCP Seal Return Relief
- b. CVC-203A, Letdown Line Relief
- c. CC-722A, RCP "A" Thermal Barrier HX CCW Discharge Relief
- d. SI-858A, SI Accumulator "A" Relief

Answer:

- a. CVC-382, RCP Seal Return Relief

Question: 68

Given the following conditions AND the attached ERFIS trend for RCS Pressure:

- A Reactor Trip and Safety Injection have occurred.
- As directed by PATH-1, a transition has been made to EPP-8, "Post LOCA Cooldown and Depressurization."
- One (1) RCP is running.
- Two (2) Charging Pumps are running.
- One (1) SI Pump is running.
- Both RHR Pumps were secured at 13:04.
- RCS Temperature is 300 °F.
- RCS Subcooling is 109 °F.
- Required subcooling is 158 °F.

Which ONE (1) of the following actions should be taken, in accordance with EPP-8?

- a. Start the RHR Pumps
- b. Start the third Charging Pump
- c. Energize Pressurizer Heaters
- d. Stop the SI Pump

Answer:

- a. Start the RHR Pumps

Question: 69

Which ONE (1) of the following describes how protection channels are separated from control channels?

- a. Separate transmitters are always used for control and protection signals
- b. An isolation amplifier is used to prevent signal interaction when a single transmitter provides control and protection functions
- c. Separate cable runs from the transmitters are used to prevent signal interaction when a single transmitter provides control and protection functions
- d. A selector switch is used to prevent signal interaction when a single transmitter provides control and protection functions

Answer:

- b. An isolation amplifier is used to prevent signal interaction when a single transmitter provides control and protection functions

Question: 70

Given the following conditions:

- A Loss of Offsite Power has occurred.
- EPP-1, "Loss of All AC Power," has been entered due to neither EDG running.
- The operator depresses the Safety Injection push buttons and EDG 'A' starts and closes on the bus.

After completion of the bus loading, what is the expected status of the following pumps?

	CHARGING PUMP 'B'	SAFETY INJECTION PUMP 'A'
a.	OFF	ON
b.	OFF	OFF
c.	ON	ON
d.	ON	OFF

Answer:

a.	OFF	ON
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Question: 71

Which ONE (1) of the following provides an Automatic Signal that will cause a complete Feedwater Isolation, closing the Feedwater Regulating Valves (FRVs), Feedwater Regulating Bypass Valves, and the Feedwater Block Valves?

- a. Reactor Trip coincident with Low Tave
- b. Safety Injection
- c. Hi-Hi Steam Generator Level
- d. High Steamline Differential Pressure on Channel IV

Answer:

- b. Safety Injection

Question: 72

A high radiation alarm on R-11, Containment Radiation, will ...

- a. actuate all containment isolation valves.
- b. actuate the Isolation Valve Seal Water System.
- c. close the containment purge supply, purge exhaust and pressure relief isolation valves.
- d. close the Component Cooling Water containment isolation valves.

Answer:

- c. close the containment purge supply, purge exhaust and pressure relief isolation valves.

Question: 73

How will an inadvertent closure of CC-716A, CCW to RCP Isolation, affect CCW flow to the following components inside Containment?

	RCP MOTOR BEARING COOLERS	RCP THERMAL BARRIER HX	CONTROL ROD DRIVE COOLERS
a.	NOT Isolated	Isolated	Isolated
b.	Isolated	NOT Isolated	Isolated
c.	Isolated	Isolated	NOT Isolated
d.	Isolated	Isolated	Isolated

Answer:

d.	Isolated	Isolated	Isolated
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Question: 74

Assuming **NO** operator actions, what is the expected status of CCW Pump 'B' under each of the following conditions?

Assume CCW Pump 'B' is running prior to each of the events.

	LOSS OF OFFSITE POWER (EDG ENERGIZING BUS)	LOSS OF OFFSITE POWER CONCURRENT WITH SI (EDG ENERGIZING BUS)	SI (BUS ENERGIZED BY OFFSITE)
a.	ON	OFF	ON
b.	ON	OFF	OFF
c.	OFF	OFF	ON
d.	OFF	ON	OFF

Answer:

a.	ON	OFF	ON
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Question: 75

The following plant conditions exist for a large break (DBA) LOCA when the operators begin to implement EPP-15, "Loss of Emergency Coolant Recirculation":

- Both RHR Pumps are secured.
- One SI Pump is running and injecting at 400 gpm.
- Time after trip is 60 minutes
- SI **CANNOT** be terminated due to insufficient subcooling.

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

- a. Start an additional SI Pump
- b. Start one RHR Pump and ensure flow is at least 3000 gpm
- c. Throttle SI Pump injection flow to approximately 185 gpm
- d. Start both RHR Pumps and ensure flow is at least 3500 gpm

Answer:

- c. Throttle SI Pump injection flow to approximately 185 gpm

Question: 76

Which ONE (1) of the following identifies the **MINIMUM** and **MAXIMUM** Containment pressures permissible to allow continued power operations, in accordance with Technical Specifications?

	MINIMUM	MAXIMUM
a.	- 1.0 psig	+ 1.0 psig
b.	- 1.0 psig	+ 2.0 psig
c.	- 0.8 psig	+ 1.0 psig
d.	- 0.8 psig	+ 2.0 psig

Answer:

c.	- 0.8 psig	+ 1.0 psig
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Question: 77

Which ONE (1) of the following, in accordance with AOP-024, Loss of Instrument Bus, describes how AUTO control is restored to a control station when power is restored to the control station?

- a. The operator depresses AUTO when the MANUAL light is energized
- b. The operator depresses AUTO when the the AUTO light is energized
- c. The operator depresses AUTO immediately upon restoration of power
- d. **NO** actions are required since the control station automatically returns to AUTO

Answer:

- a. The operator depresses AUTO when the MANUAL light is energized

Question: 78

Given the following plant conditions:

- The unit is in MODE 4.
- RCS temperature is 325°F.
- "A" AFW pump is OOS for maintenance.
- "B" AFW pump is supplying S/Gs.
- A small AFW leak occurs between V2-16B, S/G "B" AFW Isolation valve, and V2-20A, AFW Header Section Isolation.
- The operator closes V2-16B and V2-20A to stop the leak.

Which ONE (1) of the following describes an outcome of this event?

- a. AFW flow from "B" AFW pump will be available to "B" and "C" S/Gs only
- b. AFW flow from "B" AFW pump will be available to "C" S/G only
- c. **NO** AFW flow from "B" AFW pump is available
- d. AFW flow from "B" AFW pump will be available to "A" and "C" S/Gs only

Answer:

- d. AFW flow from "B" AFW pump will be available to "A" and "C" S/Gs only

Question: 79

Given the following plant conditions:

- The plant was at 100% power.
- Following a LOCA, the plant has been placed in Cold Leg Recirculation.
- A security guard has fallen down the ladder into the RHR pump room and is in critical condition.
- High radiation levels exist in the RHR pump room.

Which ONE (1) of the following describes the H. B. Robinson Administrative Total Effective Dose Equivalent (TEDE) exposure limit for emergency workers who will be entering the area?

- a. 2 REM
- b. 5 REM
- c. 10 REM
- d. 25 REM

Answer:

- d. 25 REM

Question: 80

Given the following conditions:

- RCP 'B' has just been started for the 1st RCS venting run.
- Five (5) seconds after the RCP start, RCS pressure decreased to 230 psig and RCP 'B' #1 Seal ΔP decreased to 195 psid.

The RCP should be tripped ...

- a. if #1 Seal ΔP decreases to 190 psid.
- b. immediately due to inadequate #1 Seal ΔP .
- c. immediately due to inadequate RCS pressure.
- d. after running for an additional 25 seconds.

Answer:

- b. immediately due to inadequate #1 Seal ΔP .

Question: 81

Given the following plant conditions:

- Maintenance has been performed on the CCW system.
- All CCW pumps are secured.

Which ONE (1) of the following provides the correct method for the initial start of the first Component Cooling Water pump?

- a. Rack in the breaker and replace the pump's control power fuses
- b. Once the breaker has been racked in and the control power fuses replaced, place the RTGB control switch in the START position
- c. Rack in the breaker and replace the pump's control power fuses, place its RTGB switch in the STOP position, then release the switch and verify the pump starts
- d. Rack in the breaker, hold the RTGB switch in the STOP position and replace the pump's control power fuses, then place the control switch in the START position

Answer:

- d. Rack in the breaker, hold the RTGB switch in the STOP position and replace the pump's control power fuses, then place the control switch in the START position

Question: 82

In EPP-007, "SI Termination", which ONE (1) of the following are the bases for the SW pressure being >40 psig?

- a.
 - Prevent SW Pump runout, **AND**
 - Provide adequate backup to AFW Pump supply
- b.
 - Prevent SW Pump runout, **AND**
 - Provide adequate EDG cooling
- c.
 - Provide adequate EDG cooling, **AND**
 - Provide cooling to Turbine Building loads
- d.
 - Provide adequate backup to AFW Pump supply, **AND**
 - Provide cooling to Turbine Building loads

Answer:

- b.
 - Prevent SW Pump runout, **AND**
 - Provide adequate EDG cooling

Question: 83

Given the following plant conditions:

- The plant is shutdown for a refueling outage.
- Complete core off-load to the SFP is in progress.
- The SFP Fuel Handling RO reports that SFP water temperature is 153°F.

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

- a. Immediately stop the core off-load until the SFP temperature is decreased to < 125°F
- b. Commence transferring fuel assemblies back to the core
- c. Monitor SFP water temperature at least once per hour
- d. **NO** action is required since SFP temperature is within limits for plant conditions

Answer:

- b. Commence transferring fuel assemblies back to the core

Question: 84

Given the following conditions:

- Numerous alarms come in, indicating a Service Water pipe break.
- An operator reports that there is a large break in the SW line supplying the "B" Service Water Booster Pump.

Which ONE (1) of the following sections of AOP-022, "Loss of Service Water," should be addressed?

- a. Section A, North Service Water Header Upstream of Check Valve SW-541
- b. Section B, South Service Water Header Upstream of Check Valve SW-541
- c. Section C, North Service Water Header Downstream of Check Valve SW-541
- d. Section D, South Service Water Header Downstream of Check Valve SW-541

Answer:

- c. Section C, North Service Water Header Downstream of Check Valve SW-541

Question: 85

Given the following conditions:

- A batch release of Waste Condensate Tank 'E' is scheduled to be performed.
- The Waste Condensate Recirc Pump is out-of-service.

Waste Condensate Tank 'E' ...

- a. can be recirculated after transferring to Waste Condensate Tank 'C'.
- b. **CANNOT** be recirculated unless transferred to Waste Condensate Tank 'D'.
- c. can be recirculated using Waste Condensate Pump 'B'.
- d. **CANNOT** be recirculated until the Waste Condensate Recirc Pump is repaired.

Answer:

- d. **CANNOT** be recirculated until the Waste Condensate Recirc Pump is repaired.

Question: 86

Which ONE (1) of the following specifies the minimum requirement needed to classify a Control Rod as "on the bottom" of the core in accordance with OMM-022, Emergency Operating Procedures User's Guide?

- a. IRPI channel indicates < 12 inches
- b. IRPI channel indicates <20 steps
- c. Bank group counter indicates <20 steps
- d. Respective rod bottom light ILLUMINATED

Answer:

- a. IRPI channel indicates < 12 inches

Question: 87

Given the following conditions:

- Reactor power is at 40%.
- Rod Control is in MAN.
- TE-144, NON-REGEN HX OUTLET TEMP, has failed high.

Assuming **NO** operator actions, which ONE (1) of the following describes the change in RCS boron and RCS temperature?

	RCS BORON CONCENTRATION	RCS TEMPERATURE
a.	Increases	Increases
b.	Increases	Decreases
c.	Decreases	Increases
d.	Decreases	Decreases

Answer:

c.	Decreases	Increases
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Question: 88

Given the following conditions:

- A LOCA has occurred.
- The H₂ Recombiner is in service.
- Containment Temperature = 140°F
- Containment Pressure = 2.1 psig
- TISH-3, Heater outlet gas temperature = 845°F
- TIC-4, Reaction Chamber gas temperature = 1325°F
- TISH-6, Gas Return Wall Temperature = 225°F.

Which ONE (1) of the following identifies the approximate H₂ Recombiner hydrogen influent concentration?

- a. 3.4%
- b. 4.0%
- c. 4.4%
- d. 5.2%

Answer:

- b. 4.0%

Question: 89

Given the following conditions:

- Letdown flow is 45 gpm.
- Charging is in AUTO.
- VCT Makeup Control is in AUTO.
- VCT Level Control is selected to NORMAL in Hagan Rack #19.

Assuming **NO** operator action, if LT-115, VCT Level, fails HIGH Charging Pump suction will ...

- remain aligned to the VCT as VCT makeup operates continuously.
- remain aligned to the VCT as VCT makeup cycles between 20.2" and 24.4".
- shift to the RWST as the VCT empties.
- be lost as the VCT empties.

Answer:

- be lost as the VCT empties.

Question: 90

Given the following conditions:

- The S/G FRV's are in manual.
- When the unit OCB's are shut, approximately 35 MWe are picked up.

Which ONE (1) of the following describes the initial S/G response and required operator action?

	SG NR LEVEL	OPERATOR ACTION
a.	Decrease	Decrease feed flow
b.	Decrease	Increase feed flow
c.	Increase	Decrease feed flow
d.	Increase	Increase feed flow

Answer:

d.	Increase	Increase feed flow
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Question: 91

A Fire Detection System actuation has caused a large amount of fire water to be sprayed into Containment.

Which ONE (1) of the following is the major concern with the fire water inside Containment?

- a. Flooding of safeguards equipment
- b. Degradation of the concrete structures
- c. Formation of hydrogen caused by the water interaction with Containment components
- d. Dilution of Containment sump water in the event of a LOCA

Answer:

- d. Dilution of Containment sump water in the event of a LOCA

Question: 92

Given the following plant conditions:

- A Liquid radwaste release is in progress.
- **NO** high radiation alarm is present.
- RCV-018, Liquid Radwaste Discharge valve, closes.

Which ONE (1) of the following could have caused the closure of RCV-018?

- a. Loss of control air to valve
- b. Loss of 118VAC supply to valve
- c. Actuation of a Phase "A" isolation
- d. High flow on YI-1076, Liquid Waste Flow Integrator

Answer:

- a. Loss of control air to valve

Question: 93

Given the following conditions:

- The plant is in MODE 5.
- Service Water flow is lost to the CCW heat exchangers.
- RCS temperature is increasing.
- Reports from the field indicate **NO** leaks in the Turbine Building, Auxiliary Building, or Intake.

Which ONE (1) of the following procedures would be used to mitigate this plant condition?

- a. AOP-018, Reactor Coolant Pump Abnormal Conditions
- b. AOP-020, Loss of Residual Heat Removal (Shutdown Cooling)
- c. AOP-022, Loss of Service Water
- d. AOP-033, Shutdown LOCA

Answer:

- b. AOP-020, Loss of Residual Heat Removal (Shutdown Cooling)

Question: 94

Given the following conditions:

- The plant is operating at 100% power.
- HIC-110, Boric Acid Tk 'A' Recirc, has failed closed.
- Maintenance reports that it will take them several days to get replacement parts to make repairs to the controller.

Which ONE (1) of the following statements is accurate if a blended flow to the VCT is required?

- a. Continued use of Boric Acid Tank 'A' is acceptable since the recirculation flow only serves as a backup to heat tracing.
- b. Continued use of Boric Acid Tank 'A' is **NOT** acceptable since recirculation flow is required for Boric Acid Tank Pump "A" operability.
- c. Boric Acid Tank 'B' should be used since representative boric acid concentration samples from Boric Acid Tank 'A' **CANNOT** be obtained.
- d. Boric Acid Tank 'B' must be used since the boric acid line to the blender is located downstream of the recirculation valve.

Answer:

- c. Boric Acid Tank 'B' should be used since representative boric acid concentration samples from Boric Acid Tank 'A' **CANNOT** be obtained.

Question: 95

Given the following conditions:

- The plant was initially at 50% power.
- A grid disturbance resulted in a load rejection of 120 MWe.
- The Steam Dumps have **NOT** actuated.
- The Operator verifies that the STEAM DUMP CONTROL switch is in the ON position.
- The Operator places the STEAM DUMP MODE switch to the STEAM PRESS.
- The Operator FAILS to place the STEAM HEADER PRESS controller PC-464B in MAN.

Which ONE (1) of the following describes the effect on plant operations?

- a. The Steam Dumps will **NOT** open for any plant condition
- b. The Steam Dumps will open to match Tave with Tref
- c. The Steam Dumps will open to control Steam Pressure at 1020 psig
- d. The Steam Dumps will open to control Steam Pressure at 1005 psig

Answer:

- c. The Steam Dumps will open to control Steam Pressure at 1020 psig

Question: 96

Given the following conditions:

- A reactor trip signal has occurred, but the reactor failed to trip.
- A transition has been made to FRP-S.1, "Response to Nuclear Power Generation/ATWS."
- When the operator attempts to Emergency Borate, neither Boric Acid Pump will start.

Which ONE (1) of the following Charging Pump suctions should be established to provide boric acid to the RCS?

- a. From the RWST by opening LCV-115B, EMERG MU TO CHG SUCT, or locally opening CVC-358, RWST TO CHARGING PUMP SUCTION
- b. Directly off the BAT by opening MOV-350, BA TO CHARGING PMP SUCT
- c. Directly off the BAT by locally opening CVC-356, BA BLENDER BYPASS TO CHARGING PUMP HDR VENT
- d. Through the Blender by opening FCV-113A, BORIC ACID FLOW, and FCV-113B, BLENDED MU TO CHG SUCT

Answer:

- a. From the RWST by opening LCV-115B, EMERG MU TO CHG SUCT, or locally opening CVC-358, RWST TO CHARGING PUMP SUCTION

Question: 97

Given the following conditions:

- A loss of offsite power has occurred.
- The unit tripped from 70% power.
- Demand signal on the Steam Dump pressure controller is at 50%.
- The operator transfers the Steam Dump Mode switch from Tavg Mode to Steam Press Mode.

Which ONE (1) of the following describes the response of the Steam Dump System?

- a. **ONLY** Bank 1 Steam Dump Valves open
- b. **ONLY** Bank 1 AND Bank 2 Steam Dump Valves open
- c. **ONLY** S/G PORVs are opened by the Steam Dump System
- d. **ONLY** the S/G PORVs open, due to pressure rising to 1035 psig

Answer:

- d. **ONLY** the S/G PORVs open, due to pressure rising to 1035 psig

Question: 98

A fire has occurred inside a Locked High Radiation Area (LHRA).

Which ONE (1) of the following identifies the MINIMUM required authorization for the Fire Brigade to enter this area **AND** the MINIMUM expected radiation levels in the area?

	AUTHORIZATION REQUIRED	RADIATION LEVELS
a.	On-Call Manager	> 500 Rad/hr
b.	On-Call Manager	> 1000 mRem/hr
c.	SSO	> 500 Rad/hr
d.	SSO	> 1000 mRem/hr

Answer:

d.	SSO	> 1000 mRem/hr
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Question: 99

Given the following conditions:

- Waste Gas Decay Tank #2 is being released to the Plant Vent.
- R-14, Plant Vent Monitor, reaches the HIGH alarm setpoint.

Which ONE (1) of the following actions automatically occur?

- a. HVE-2A/B, Auxiliary Building Exhaust Fans, trip
- b. RCV-014, Gas Release Valve, closes
- c. WD-1630, Waste Gas Decay Tank 'B' Supply to CVCS HUT, opens
- d. HVS-2 and HVE-14, Lower Fuel Building Supply and Exhaust Fans, trip

Answer:

- b. RCV-014, Gas Release Valve, closes

Question: 100

Given the following plant conditions:

- The plant was operating at 100% power.
- A turbine runback has occurred.
- The following annunciators are illuminated:
 - APP-005-A3, PR DROP ROD ROD STOP
 - APP-005-B5, ROD BANKS A/B/C/D LO LIMIT
 - APP-005-C3, PR CHANNEL DEV
 - APP-005-C5, ROD BANKS A/B/C/D LO-LO LIMIT
 - APP-005-F2, ROD BOTTOM ROD DROP

Which ONE (1) of the following procedures should be used to mitigate this plant transient?

- a. AOP-001, Malfunction of Reactor Control System
- b. AOP-015, Secondary Load Rejection or Turbine Runback
- c. AOP-024, Loss of Instrument Buses
- d. AOP-025, RTGB Instrument Failures

Answer:

- a. AOP-001, Malfunction of Reactor Control System