

U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Reports No. 50-266/OL-95-01(DRS); 50-301/OL-95-01(DRS)

Docket Nos. 50-266; 50-301

Licenses No. DPR-24; DPR-27

Licensee: Wisconsin Electric Power Company
231 West Michigan Street - P379
Milwaukee, WI 53201

Facility Name: Point Beach Nuclear Plant

Examination Administered At: Point Beach Nuclear Plant

Examination Conducted: Week of October 2, 1995

Chief Examiner: T. Burdick
for C. Osterholtz

10/16/95
Date

Approved By: T. Burdick
T. Burdick, Chief
Operator Licensing Branch

10/16/95
Date

Examination Summary

Examination administered week of October 2, 1995 (Reports No. 50-266/OL 95-01(DRS); 50-301/OL-95-01(DRS))

A written examination and operating test were given to one senior reactor operator (SRO) upgrade applicant. An exit meeting was conducted on October 4, 1995, with plant management.

Results: The SRO upgrade applicant passed the examination.

The following is a summary of licensee strengths and weaknesses noted during performance of this examination:

Strengths

- Written examination pre-review (Section 3).

Weaknesses

- Procedure discrepancies (Section 5).

REPORT DETAILS

1. Examiners

C. Osterholtz, RIII, Chief Examiner

2. Persons Contacted

Licensee Representatives

*G. Maxfield, Plant Manager
*A. Cayia, Production Manager
*F. Cerovac, Operations Training Coordinator
*C. Gray, Assistant to the Operations Manager
*K. Grote, Operations Training
*M. Koudelka, Reg Services Specialist
*J. Reisenbuechler, Operations Manager
*D. Schoon, Regulatory Manager
*R. Seizert, Training Manager

U. S. Nuclear Regulatory Commission (NRC)

T. Kobetz, Senior Resident Inspector
T. McMurtray, Resident Inspector

*Present at the staff exit meeting on October 4, 1995.

3. Written Examination Review

Licensee representatives reviewed the written examination prior to administration and appropriate changes were incorporated into the examinations. Following examination administration the facility received a copy of the SRO examination and answer key for review.

The pre-administration review was considered thorough and effective, as evidenced by no post examination comments.

4. Training

The licensee training staff provided the NRC excellent support during validation of simulator scenarios and job performance measures.

5. Procedures

During the course of the dynamic simulator examination, the following procedure discrepancy was identified:

- Two procedures used during the operating test directed the operator to an incorrect reference. Procedure OP-7a, "Placing Residual Heat Removal System in Operation", and

procedure IT-01, "High Head Safety Injection Pumps (Monthly)", directed the operator to check valve data in the Operations Standing Orders. Valve data had been removed from the Operations Standing Orders during the summer of 1994 and placed in their own reference book, "Pump and Valve IST Acceptance Criteria".

6. Simulator Fidelity

No simulator discrepancies were identified during the course of the examination.

7. Exit Meeting

An exit meeting with the Point Beach Nuclear Plant training staff was held on October 4, 1995. Section 2 of this report lists those who attended the meeting. The strengths and weaknesses noted in this report were discussed during the exit meeting.

U. S. NUCLEAR REGULATORY COMMISSION
SITE SPECIFIC EXAMINATION
SENIOR OPERATOR LICENSE
REGION 3

CANDIDATE'S NAME: MASTER EXAMINATION
FACILITY: Point Beach 1 & 2
REACTOR TYPE: PWR-WEC2
DATE ADMINISTERED: 10 02 95
--/--/--

INSTRUCTIONS TO CANDIDATE:

Use the answer sheets provided to document your answers. Staple this cover sheet on top of the answer sheets. Points for each question are indicated in parentheses after the question. The passing grade requires a final grade of at least 80%. Examination papers will be picked up four (4) hours after the examination starts.

<u>TEST VALUE</u>	<u>CANDIDATE'S SCORE</u>	<u>%</u>	
<u>100.00</u>	<u> </u>	<u> </u> %	TOTALS
	<u>FINAL GRADE</u>		

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

Candidate's Signature

NRC RULES AND GUIDELINES FOR LICENSE EXAMINATIONS

During the administration of this examination the following rules apply:

1. Cheating on the examination means an automatic denial of your application and could result in more severe penalties.
2. After the examination has been completed, you must sign the statement on the cover sheet indicating that the work is your own and you have not received or given assistance in completing the examination. This must be done after you complete the examination.
3. Restroom trips are to be limited and only one applicant at a time may leave. You must avoid all contacts with anyone outside the examination room to avoid even the appearance or possibility of cheating.
4. Use black ink or dark pencil ONLY to facilitate legible reproductions.
5. Print your name in the blank provided in the upper right-hand corner of the examination cover sheet and the answer sheet.
6. Mark your answers on the answer sheet provided.
7. The point value for each question is one (1) point.
8. No partial credit will be given.
9. If the intent of a question is unclear, ask questions of the examiner only.
10. When turning in your examination, assemble the completed examination with examination questions, examination aids and answer sheets. In addition, turn in all scrap paper.
11. Only the answer sheet will be graded. Scrap paper will be disposed of immediately following the examination.
12. To pass the examination, you must achieve a grade of 80% or greater.
13. There is a time limit of four (4) hours for completion of the examination.
14. When you are done and have turned in your examination, leave the examination area (EXAMINER WILL DEFINE THE AREA). If you are found in this area while the examination is still in progress, your license may be denied or revoked.

$$f = ma$$

$$v = s/t$$

$$\text{Cycle efficiency} = (\text{Net work out})/(\text{Energy in})$$

$$w = mg$$

$$s = v_0 t + 1/2 at^2$$

$$E = mc^2$$

$$KE = 1/2 mv^2$$

$$a = (v_f - v_0)/t$$

$$A = \lambda N$$

$$A = A_0 e^{-\lambda t}$$

$$PE = mgh$$

$$v_f = v_0 + at$$

$$w = e/t$$

$$\lambda = \ln 2 / t_{1/2} = 0.693 / t_{1/2}$$

$$W = v \Delta P$$

$$A = \frac{\pi D^2}{4}$$

$$t_{1/2}^{\text{eff}} = \frac{[(t_{1/2})(t_b)]}{[(t_{1/2}) + (t_b)]}$$

$$\Delta E = 931 \Delta m$$

$$\dot{m} = V_{av} A \rho$$

$$I = I_0 e^{-\mu x}$$

$$\dot{Q} = mCp \Delta t$$

$$\dot{Q} = UA \Delta T$$

$$Pwr = W_f \Delta h$$

$$I = I_0 e^{-\mu x}$$

$$I = I_0 10^{-x/TVL}$$

$$TVL = 1.3/\mu$$

$$HVL = -0.693/\mu$$

$$P = P_0 10^{\text{SUR}(t)}$$

$$P = P_0 e^{\tau/T}$$

$$SUR = 26.06/T$$

$$SCR = S/(1 - K_{\text{eff}})$$

$$CR_x = S/(1 - K_{\text{eff},x})$$

$$CR_1(1 - K_{\text{eff}1}) = CR_2(1 - K_{\text{eff}2})$$

$$SUR = 26\rho/\Sigma^* + (\beta - \rho)/T$$

$$T = (\Sigma^*/\rho) + [(\beta - \rho)/\bar{\lambda}_0]$$

$$T = \Sigma/(\rho - \beta)$$

$$T = (\beta - \rho)/(\bar{\lambda}_0)$$

$$\rho = (K_{\text{eff}} - 1)/K_{\text{eff}} = \Delta K_{\text{eff}}/K_{\text{eff}}$$

$$M = 1/(1 - K_{\text{eff}}) = CR_1/CR_0$$

$$M = (1 - K_{\text{eff}0})/(1 - K_{\text{eff}1})$$

$$SDM = (1 - K_{\text{eff}})/K_{\text{eff}}$$

$$\Sigma^* = 10^{-4} \text{ seconds}$$

$$\bar{\lambda} = 0.1 \text{ seconds}^{-1}$$

$$\rho = [(\Sigma^*/(T K_{\text{eff}}))] + [\bar{\beta}_{\text{eff}}/(1 + \bar{\lambda}T)]$$

$$P = (\Sigma \Phi V)/(3 \times 10^{10})$$

$$I = \sigma N$$

$$I_1 d_1 = I_2 d_2$$

$$I_1 d_1^2 = I_2 d_2^2$$

$$R/hr = (0.5 \text{ CE})/d^2 (\text{meters})$$

$$R/hr = 6 \text{ CE}/d^2 (\text{feet})$$

Miscellaneous Conversions

$$1 \text{ kg} = 2.21 \text{ lbs}$$

$$1 \text{ in.} = 2.54 \text{ cm}$$

$$^{\circ}\text{F} = 9/5^{\circ}\text{C} + 32$$

$$^{\circ}\text{C} = 5/9 (^{\circ}\text{F} - 32)$$

QUESTION: 001 (1.00)

Which of the following describes the effect if the Spray Valve Bypass is inadvertently closed during steady state power operations?

- a. Boron concentration in the RCS would increase.
- b. Spray nozzle thermal stress would increase.
- c. Pressurizer level would decrease.
- d. Boron concentration in the RCS would decrease.

QUESTION: 002 (1.00)

Your Duty Technical Advisor suffers a fatal heart attack at 8:00 PM on a clear summer evening. How long may reactor operations continue before a replacement is required?

- a. 1 HR
- b. 2 HR
- c. until shift turnover
- d. indefinitely

QUESTION: 003 (1.00)

During the performance of EOP-0, "Reactor Trip or Safety Injection", RCP trip criteria is exceeded and RCP's are ordered tripped. Which of the following describes the basis for this action?

- a. To minimize the effects of RCS cooldown in the event of a major steamline break to reduce the effects of pressurized thermal shock.
- b. To limit the rate of RCS depressurization in the event of a large break LOCA and reduce the amount of voiding in the core.
- c. To limit the RCS mass loss through a small break leading to a more severe core uncover if RCP's were tripped some time later.
- d. To ensure natural circulation flow requirements are met in the event of a total loss of heat sink.

QUESTION: 004 (1.00)

The following plant conditions exist:

Reactor/Turbine trip occurred.
Transition out of EOP-0 has been accomplished.
Both Steam Generator pressures are decreasing uncontrollably.
Operator dispatched to shut the MSIV's locally.
Cooldown rate: 150 Deg F per hour.
Narrow range SG levels: both at 5%.

What operator action(s) is(are) required to minimize the RCS cooldown?

- a. Maintain a minimum total of 200 gpm feed flow until at least one steam generator level is greater than 10% narrow range.
- b. Control feed flow to maintain narrow range levels less than 50%.
- c. Stop the turbine-driven AFW pump by tripping the overspeed trip device.
- d. Decrease feed flow to 50 gpm into each steam generator.

QUESTION: 005 (1.00)

With the reactor at 8% power, an electrical perturbation lowers grid frequency to 58 Hz for 5 seconds. This will result in which of the following breaker alignments for RCP A and the Reactor Trip Breakers? (Assume no operator action)

	RCP A BREAKER	REACTOR TRIP BREAKERS
a.	open	open
b.	closed	open
c.	open	closed
d.	closed	closed

QUESTION: 006 (1.00)

With a normal plant line-up at 100% power, which of the following represents the proper sequence of events if pressurizer pressure slowly increases continuously from normal operating pressure?

1. Reactor trip
 2. PZR Safety opens
 3. PZR proportional heaters off
 4. PZR power operated relief opens
 5. PZR spray begins
- a. 5 - 3 - 1 - 4 - 2
- b. 3 - 5 - 4 - 1 - 2
- c. 3 - 5 - 1 - 2 - 4
- d. 5 - 3 - 2 - 4 - 1

QUESTION: 007 (1.00)

The following plant conditions exist:

Steam generator A steam flow: 0.0005 E6 lbm/hr
Steam generator B steam flow: 0.6 E6 lbm/hr
Steam generator A level: 70%
Steam generator B level: 10%
Turbine driven AFW pump: running
Motor driven AFW pumps: running
Tave: 516 Deg F
Containment pressure: 5 psig
SI: actuated

If no operator action has been taken, which of the following indicates the status of the main steam isolation valves?

	MSIV A	MSIV B
a.	open	open
b.	open	shut
c.	shut	open
d.	shut	shut

QUESTION: 008 (1.00)

During a normal transfer of feedwater control from the bypass feedwater flow control valves to the main feedwater flow control valves, the following plant conditions exist:

Tave: 552 Deg F
Reactor power: 15%
RCS pressure: 1985 psig
A steam generator level: 43%
B steam generator level: 40%
Main feedwater flow control valves: open
Bypass feedwater flow control valves: open

Which of the following would be the resultant position of the main feedwater flow control valves and the bypass feedwater flow control valves immediately following a reactor trip? (assume no operator action.)

	Main	Bypass
a.	open	open
b.	open	shut
c.	shut	open
d.	shut	shut

QUESTION: 009 (1.00)

The Unit 1 reactor is at 8% power following a startup when a pressurizer spray valve fails open depressurizing the RCS. Which of the following signals would be the first to trip the reactor?

- Pressurizer low pressure reactor trip
- Pressurizer low pressure safety injection
- OT Delta T reactor trip
- Pressurizer high level reactor trip

QUESTION: 010 (1.00)

Which of the following areas is protected by a wet pipe sprinkler system?

- a. Main generator transformer X01.
- b. Computer and computer equipment rooms.
- c. Hydrogen seal oil package.
- d. No. 3 warehouse.

QUESTION: 011 (1.00)

A turbine trip from 100% has occurred without a reactor trip. Which of the following components is analyzed in the FSAR to mitigate a pressure rise in the RCS?

- a. PZR code safety valves.
- b. PZR pressure control spray valves.
- c. PZR power operated relief valves.
- d. PZR level control system surge volume.

QUESTION: 012 (1.00)

With Unit 1 operating normally at 100% power, two out of four OT Delta T channels rise to within 3 degrees of the trip setpoint for 100 seconds. How much will turbine load be reduced?

- a. 10%
- b. 15%
- c. 20%
- d. 25%

QUESTION: 013 (1.00)

A safety injection and containment isolation occur while excess letdown is in service. With no operator action, what is the subsequent letdown flowpath?

- a. Flow continues to the VCT.
- b. Flow is diverted to the RCDT on the containment isolation signal.
- c. Flow is to the PRT via the #1 RCP seal return relief.
- d. Flow is completely stopped due to the safety injection signal.

QUESTION: 014 (1.00)

Consider the following critical safety function status tree red paths:

- 1. Containment
- 2. Core Cooling
- 3. Heat Sink
- 4. Primary Integrity

Which of the following lists these status trees in DESCENDING order of priority?

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

QUESTION: 015 (1.00)

While operating at 98% power, a reactor trip and safety injection occur due to RCS pressure decreasing. The SRO directs the operators in the performance of EOP-0, "Reactor Trip or Safety Injection", and at Step 35 correctly goes to EOP-1, "Loss of Reactor or Secondary Coolant". EOP-1 Step 2 Action is "Check if SG's are not faulted". EOP-0 Step 33 is "Check if SG's are not faulted".

What is the basis for the EOP-1 action "Check if SG's are not faulted" after just having performed the identical action step in EOP-0?

- a. Provides consistency in EOP troubleshooting methodology.
- b. To provide a substantive link between EOP-0 and EOP-1.
- c. Alert the operator to a possible misdiagnosis.
- d. In case EOP-1 is entered from a procedure other than EOP-0.

QUESTION: 016 (1.00)

The following plant conditions exist:

- Loss of offsite power
- GO2 out of service
- GO1 running at rated load
- Normal fuel oil transfer pumps NOT available
- GO1 base and day tanks filled to capacity

Of the following, Which is the MAXIMUM amount of time available to emergency fill the day tank prior to GO1 running out of fuel?

- a. 2 hours
- b. 4 hours
- c. 8 hours
- d. 16 hours

QUESTION: 017 (1.00)

Under which of the following conditions may the RCP's be started even though the RCP's may be damaged as a result of starting the pump?

- a. When responding to a steam generator tube rupture in accordance with EOP-3, "Steam Generator Tube Rupture"..
- b. When responding to a loss of secondary heat sink in accordance with CSP-H.1, "Response to Loss of Secondary Heat Sink".
- c. When responding to inadequate core cooling in accordance with CSP-C.1, "Response to Adequate Core Cooling".
- d. When responding to voids in the reactor vessel in accordance with CSP-I.3, "Response to Voids in Reactor Vessel".

QUESTION: 018 (1.00)

Which of the following sets of nuclear instrumentation readings indicates that the compensating voltage for the Intermediate Range channel NI-35 detector has been set to a value LOWER than required?

- a. - NI-31 and 32 -- 1.0 E+5 cps
- NI-35 -- 2.0 E-11 amps
- b. - NI-35 -- 3.0 E-6 amps
- NI-36 -- 8.0 E-7 amps
- c. - NI-31 and 32 -- 3.0 E+4 cps
- NI-35 -- 8.0 E-11 amps
- d. - NI-35 -- Offscale low
- NI-36 -- 5.0 E-11 amps

QUESTION: 019 (1.00)

The following plant conditions exist:

-- T hot	- 591 degrees F
-- T cold	- 567 degrees F
-- T avg	- 579 degrees F
-- Pressurizer pressure	- 2155 psig
-- Steam pressure	- 910 psig

Which of the following is the approximate Subcooling Margin for the above plant conditions?

- a. 56 degrees
- b. 68 degrees
- c. 80 degrees
- d. 92 degrees

QUESTION: 020 (1.00)

Which of the following describes the applicability of EOP-0, "Reactor Trip or Safety Injection", with the reactor subcritical at 480 Deg F?

- a. EOP-0 cannot be used in this plant condition. Therefore, procedure EOP-0.0, "Rediagnosis", should be used.
- b. EOP-0 cannot be used in this plant condition. Abnormal Operating Procedures (AOP's) should be used.
- c. EOP-0 can be used in this plant condition only if so directed by the Critical Safety Function Status Trees.
- d. EOP-0 can be used in this plant condition since the RHR system is not providing decay heat removal.

QUESTION: 021 (1.00)

Given the following conditions:

- A 21 year old male radiation worker.
- A current NRC Form 5 on file for the worker.
- He has received 47.0 rem to the skin of the whole body this year (SDE-WB)
- His current Annual Total Effective Dose Equivalent (TEDE) dose is 0.

According to 10CFR20, what is the MAXIMUM amount of Total Effective Dose Equivalent (TEDE) he can receive for the remainder of the year?

- a. 1.25 rem.
- b. 3.0 rem.
- c. 5.0 rem.
- d. 15.0 rem.

QUESTION: 022 (1.00)

Given the following conditions:

- A General Emergency has been declared.
- A radioactive release is occurring from the Auxiliary Building.
- A Radiochemist has injured her leg and cannot exit the Auxiliary Building.

Choose the requirements for an emergency worker to assist the radiochemist.

- a. The worker must be a male and have his dose limited to 75 rem whole body.
- b. The worker can be male or female and have his or her dose limited to 25 rem whole body.
- c. The worker must be a volunteer and have their dose limited to 75 rem whole body.
- d. The worker can be male or female and his or her exposure should not exceed quarterly exposure limits.

QUESTION: 023 (1.00)

The reactor is operating normally at 100% power when a "PRT PRESS HIGH TEMP HI LEVEL HI OR LO" alarm is activated on the control board. The pressurizer PORV's and safety valves have been verified shut. The following indications for the PRT are read:

PRT PRESS: 9 PSIG

PRT TEMP: 100 Deg. F.

PRT LEVEL: 74%

Which of the following would cause this alarm condition?

- a. PRT level too low; could compromise ability to condense steam if PZR safeties lift.
- b. PRT level too high; could compromise PRT's design capacity if PZR safeties lift.
- c. PRT pressure too high; too much nitrogen has been added to the tank.
- d. PRT temperature too high; indicative of backleakage from the reactor coolant system.

QUESTION: 024 (1.00)

While operating at 80% power, the generator output breaker opens without a turbine trip. This causes turbine speed to increase at a rate of 1 rpm per second. If this continues, what is the MINIMUM time that will elapse before the mechanical overspeed trip device actuates?

- a. 60 seconds
- b. 75 seconds
- c. 90 seconds
- d. 100 seconds

QUESTION: 025 (1.00)

Radioprotective salt, potassium iodide (KI), may be administered to personnel in emergency situations to...

- a. absorb radioactive iodine that might otherwise be absorbed by the thyroid gland.
- b. cause a high rate of internal ionizations in the thyroid to reduce the effect of ionizations from externally absorbed radioactive iodine.
- c. saturate iodine concentration in the thyroid to prevent accumulation of radioactive iodine in the thyroid gland.
- d. act as an internal shield for the thyroid by reflecting externally produced radioactive iodine through equal mass collisions.

QUESTION: 026 (1.00)

EOP-3, "Steam Generator Tube Rupture", requires the operator to keep feeding a ruptured steam generator until level is greater than 8%. What is the basis for this action?

- a. Minimize thermal shock to the feed ring.
- b. Maintain an RCS heat sink.
- c. Prevent depressurization of the ruptured steam generator.
- d. Eliminate steam generator thermal stratification.

QUESTION: 027 (1.00)

With the reactor critical in the source range, one reactor coolant pump is accidentally tripped. Assuming all systems operate as designed, is it allowable to re-start the tripped pump?

- a. Yes, provided rod insertion limits are satisfied.
- b. No, to prevent reactivity addition to the core.
- c. Yes, since power is not in the power range.
- d. No, to prevent unwanted pressure transients while critical.

QUESTION: 028 (1.00)

The RCP anti-reverse rotation device prevents which of the following when a second RCP is started?

- a. Check valve slam.
- b. RCP motor overheating.
- c. RCP impeller damage.
- d. RCP seal damage.

QUESTION: 029 (1.00)

With the plant operating normally at 100% power, the plant duty chemist informs the control room that the hydrogen concentration in the VCT gas space is 100%. You should...

- a. reduce power to <50%.
- b. perform a normal shutdown.
- c. vent the VCT.
- d. continue operating at 100% power.

QUESTION: 030 (1.00)

While fuel motion is in progress, a maintenance package is submitted which would result in two power range channels being de-energized. Having two power range channels de-energized...

- a. IS NOT allowable because this will leave only one source range channel energized.
- b. IS allowable because the reactor is shutdown, and therefore no power range indication is necessary.
- c. IS NOT allowable because this will leave no source range channels energized.
- d. IS allowable provided P-10 bistables are tripped per applicable I & C procedure.

QUESTION: 031 (1.00)

Which of the following describes how normal independent verification for a manually operated throttle valve (position is listed in number of turns) is performed?

- a. Fully close the valve, counting the number of turns required for closure, then re-open the valve to its proper position.
- b. Move the valve slightly in the closed direction and then return it to its original position.
- c. Verify the process parameters and that the system status is normal for the plant conditions.
- d. Compare visual observation of stem or indicator position with the required position.

QUESTION: 032 (1.00)

Which of the following operational parameters discriminates between a steamline rupture inside containment and a small break LOCA?

- a. RCS temperature.
- b. RCS pressure.
- c. Containment temperature.
- d. Containment pressure.

QUESTION: 033 (1.00)

Which of the following will be the FIRST to provide design cooling flow to the RCS following a design base LOCA?

- a. Charging pumps.
- b. SI pumps.
- c. RHR pumps.
- d. Accumulators.

QUESTION: 034 (1.00)

The plant has been in an ATWS event, and emergency boration is in progress. Which of the following is a criteria that MUST be satisfied prior to returning to the procedure and step from which you entered?

- a. Reactor trip breakers open.
- b. Power range less than 5%.
- c. Source range detectors energized.
- d. IR has zero start-up rate.

QUESTION: 035 (1.00)

Of the following, which is the MINIMUM number of operators needed to ensure that BOTH fire brigade manning AND safe shutdown manning requirements are satisfied?

- a. 5
- b. 7
- c. 9
- d. 11

QUESTION: 036 (1.00)

The following plant conditions exist:

Reactor power:	70%
Rod control:	automatic
Letdown flow:	40 GPM
Letdown gas stripper:	ONLINE

TCV-130 (letdown temperature controller) fails from 20% throttled open to full closed due to a temperature sensor failing low.

Which of the following describes the plant response to this event?

- a. TCV-145 (letdown temperature divert valve) opens, bypassing flow around the demineralizers.
- b. Letdown flow increases due to decreasing backpressure.
- c. Control rods step in due to increasing RCS temperature.
- d. RCS temperature will increase requiring boration to restore temperature.

QUESTION: 037 (1.00)

The RHR to letdown connection (HCV-133) ties into the letdown line...

- a. outside containment.
- b. between the containment penetration and the letdown orifices.
- c. between the letdown orifices and the regenerative heat exchanger.
- d. upstream of the regenerative heat exchanger.

QUESTION: 038 (1.00)

A reactor startup is in progress with the reactor critical in the source range.

Choose the response of the Reactor Protection System for an instrument power fuse failure or a control power fuse failure on source range channel NI-31.

	INSTRUMENT FUSE		CONTROL FUSE
a.	No Trip	No Trip
b.	Reactor Trip	No Trip
c.	No Trip	Reactor Trip
d.	Reactor Trip	Reactor Trip

QUESTION: 039 (1.00)

Which of the following represents the proper order of preference for borating the RCS per AOP-6E, "Alternate Boration/Loss of Shutdown Margin".

- a. Emergency Boration Valve, CVCS and Blender, Align RWST to Charging.
- b. Emergency Boration Valve, Align RWST to Charging, CVCS and Blender.
- c. CVCS and Blender, Emergency Boration Valve, Align RWST to Charging.
- d. CVCS and Blender, Align RWST to Charging, Emergency Boration Valve.

QUESTION: 040 (1.00)

Which of the following will cause an AUTOMATIC trip of a Steam Generator Feedwater Pump (SGFP) during normal operation?

- a. SGFP thrust bearing pressure 5.9 psig.
- b. SGFP discharge pressure at 1159 psig.
- c. SGFP suction pressure at 159 psig for 120 seconds.
- d. SGFP lube oil pressure 5.9 psig

QUESTION: 041 (1.00)

The Gas Amplification Curve for Nuclear Detectors has six regions; in which region does the Source Range Detector operate and in which region does the Power Range operate?

	SOURCE RANGE	POWER RANGE
a.	Limited Proportional	Proportional
b.	Ionization	Recombination
c.	Recombination	Limited Proportional
d.	Proportional	Ionization

QUESTION: 042 (1.00)

Which of the following would REQUIRE a plant shutdown?

- a. 0.9 gpm Unidentified Leakage.
- b. 9 gpm Identified leakage.
- c. 0.9 gpm Primary to Secondary Leakage.
- d. Failed air ejector gas monitor.

QUESTION: 043 (1.00)

The following plant conditions exists:

- One accumulator has an out of spec high water level.
- Nitrogen pressure is NORMAL.

Which of the following describes the ability of the accumulator to perform its designated safety function during a large break LOCA?

- a. It will discharge an insufficient volume of water.
- b. It will discharge excessive nitrogen into the core.
- c. It will discharge its contents too late.
- d. It will discharge its contents too soon.

QUESTION: 044 (1.00)

The following plant conditions exist:

Instrument air compressor K2A selected to CONSTANT
Instrument air compressor K2B selected to AUTO

Instrument air header pressure momentarily dips to 88 psig then increases to 110 psig. Assuming no operator action, what would be the present status of the two air compressors?

- | | K2A | K2B |
|----|---------|---------|
| a. | running | running |
| b. | running | off |
| c. | off | running |
| d. | off | off |

QUESTION: 045 (1.00)

During a refueling outage, maintenance involving an ignition source is commenced at 1000 with a fire watch stationed. If the work is completed and the ignition source discontinued at 1230, what would be the EARLIEST time that the fire watch is allowed to leave the work site?

- a. 1245
- b. 1300
- c. 1315
- d. 1330

QUESTION: 046 (1.00)

With the reactor at 12% power following a reactor start-up, a control rod suddenly drops into the core. No reactor trip occurs. Which of the following actions should be taken?

- a. Trip the reactor and enter EOP-0, Reactor Trip or Safety Injection.
- b. The reactor is considered shutdown. Subsequent startup will be performed in accordance with OP-1B, Reactor Startup.
- c. Maintain power below 75% and attempt to determine the cause of the dropped rod.
- d. Set NI's power range over-power trip to 75% rated power and attempt to determine the cause of the dropped rod.

QUESTION: 047 (1.00)

With the plant operating normally at 70% power, the following symptoms occur:

Increasing PZR level
PZR PORV actuation
Tave greater than Tref
"Tave steam dump channel alert" annunciator

Which of the following would cause the above symptoms?

- a. Uncontrolled rod withdrawal
- b. Excessive boration
- c. Inadvertent steam dump actuation
- d. Inadvertent AFW actuation.

QUESTION: 048 (1.00)

If "A" RCP #2 seal fails, then "A" RCP #1 seal...

- a. leakoff flow INCREASES.
- b. leakoff flow DECREASES.
- c. leakoff temperature INCREASES.
- d. leakoff temperature DECREASES.

QUESTION: 049 (1.00)

Eight hours after initiating hot shutdown following 100 days of full power operation, decay heat will still be generating power at an equivalent rate of approximately...

- a. 0.7%
- b. 1.7%
- c. 2.7%
- d. 3.7%

QUESTION: 050 (1.00)

With the reactor operating normally at 100% power, a safety injection is inadvertently initiated. Assuming no LOCA exists and no operator action taken, which of the following describes RCS pressure response?

- a. RCS pressure will INCREASE to the PZR PORV setpoint and be maintained there by PORV operation.
- b. RCS pressure will DECREASE due to cooldown, then INCREASE to normal operating pressure due to safety injection.
- c. RCS pressure will INCREASE to shut-off head of the SI pumps, then DECREASE due to PZR spray actuation.
- d. RCS pressure will DECREASE due to cooldown, then INCREASE due to PZR heater actuation.

QUESTION: 051 (1.00)

The following plant conditions exist:

Procedure in effect	EOP-1
Containment pressure	65 psig and increasing

The operators transition to CSP-Z.1, Response to High Containment Pressure and upon completion of all steps in CSP-Z.1, the containment pressure is now 61 psig.

The operator should...

- a. remain in CSP-Z.1 until the red path condition clears.
- b. exit CSP-Z.1 and return to EOP-1 at the step in effect.
- c. exit CSP-Z.1 and re-initiate procedure EOP-1.
- d. perform CSP-Z.1 and EOP-1 concurrently.

QUESTION: 052 (1.00)

Step 30 of ECA-0.0, Loss of All AC Power, has the operator verify that the RCP seals are isolated by locally shutting seal injection valves (CV-300A/B).

Why are these valves shut?

- a. Protects against CCW steam formation caused by thermal barrier heatup.
- b. Prevents flashing in the seal return heat exchanger.
- c. Prevents RCS flow to the PRT via the seal return heat exchanger relief line.
- d. Allows charging pumps to be started normally without thermal shock to an RCP seal.

QUESTION: 053 (1.00)

An ERP has been calculated 24 hours following a reactor trip on unit 1 from twenty days at 100% power.

Which of the following most closely represents the total xenon worth for the ERP calculation (cycle 23).

- a. 2000 pcm
- b. 3000 pcm
- c. 4000 pcm
- d. 5000 pcm

QUESTION: 054 (1.00)

The red "M" light is illuminated on the SPING eberline radiation monitor control panel in the rod drive room.

This verifies....

- a. a source check is in progress.
- b. an external failure caused by high sample flow has occurred.
- c. the display value calculated has reached the "alert" alarm value.
- d. a detector is sensing a trend alarm.

QUESTION: 055 (1.00)

The instrument air header has an unisolable rupture in the line and air header pressure is decreasing slowly.

Which of the following will occur as a direct result of the decreasing instrument air pressure? (No operator action)

- a. RCP seal injection flow will go to maximum.
- b. RCP thermal barrier isolation valves will fail open.
- c. Pressurizer pressure will decrease until the low pressure trip.
- d. Charging pump 2P2C will reduce speed to minimum.

QUESTION: 056 (1.00)

The following plant conditions exist: Unit 1

RCS drained down
Reactor vessel level(LI-447/447A) 50% and decreasing

Which of the following combinations are available to refill the reactor coolant system?

- a. Charging pumps, refueling water circulating water pump from RWST
- b. Boric acid transfer pump, chemical drain pump
- c. Spent fuel pit pump, spent fuel pool skimmer pump
- d. reactor coolant drain tank pump, spent fuel pool skimmer pump

QUESTION: 057 (1.00)

The following conditions exist: Unit 2

Reactor power	100%
FT-464- Steam flow (Blue channel)	3.3 E6 pph
PT-468- Steam Pres. (Blue channel)	fails to 600 psig
Feedwater flow control	Blue channel selected
Steam flow control	Blue channel selected

Which of the following best describes the initial steam generator level response?

- Level drops, then returns to a higher than normal level.
- Level drops, then returns to normal level.
- Level rises, then returns to normal level.
- Level rises, undershoots, then returns to higher than normal level.

QUESTION: 058 (1.00)

The following conditions exist: Unit 1

RCP's	Running
Rod bottom lights	ON
RCS pressure	1600 psig
SI pumps	running

Immediate actions of EOP-0, Reactor Trip or Safety Injection, have just been completed.

Which of the following plant conditions would be given FIRST priority while taking subsequent actions to mitigate the event in progress?

- The RCS is losing inventory at 250 gpm.
- Air ejector and steam generator blowdown radiation alarms occur.
- One steam generator has completely depressurized.
- The RCS is 20 Deg. F subcooled.

QUESTION: 059 (1.00)

According to Technical Specifications, which of the following temperature changes would be ALLOWABLE in a one hour period?

A 200 deg F.....

- a. heatup of the RCS
- b. cooldown of the RCS
- c. heatup of the pressurizer
- d. cooldown of the pressurizer

QUESTION: 060 (1.00)

The following plant conditions exist: Unit 1

Reactor power	65%
RCS pressure	1965 psig
Pressurizer back-up heaters	ENERGIZED
Main turbine vibration	11 mils and steady
RCP B upper radial bearing temp	185 Deg. F and steady
Instrument Air header pressure	78 psig and dropping
Digital metal impact monitoring system-Reactor vessel	IN ALARM

The reactor operator is required to:

- a. reduce reactor power to less than or equal to the P-8 setpoint.
- b. have the instrument air dryer tower bypass valves locally verified open.
- c. trip the reactor, then trip RCP B.
- d. reduce reactor power to the P-9 setpoint and then trip the main turbine.

QUESTION: 061 (1.00)

Following a loss of offsite power to Unit 1, the following conditions are monitored:

Power range	0%
RCS pressure	500 lbs.
Total feedwater flow	250 gpm
Core exit thermocouples	1100 Deg. F
Containment pressure	25 psig
RVLIS (narrow range)	32 ft
Reactor coolant pumps	none running
EDG G01	Running and loaded
EDG G03	Electrical breaker fire
Narrow range steam generator levels (both generators)	25%

EOP-0, "Reactor Trip or Safety Injection", has been completed through step 37. Which of the following procedures are you now required to be in?

- a. CSP-C.2, Response to Degraded Core Cooling.
- b. ECA-0.0, Loss of All AC Power.
- c. CSP-Z.1, Response to High Containment Pressure.
- d. CSP-H.1, Response to Loss of Secondary Heat Sink

QUESTION: 062 (1.00)

Due to a leak, pressure has dropped rapidly to 75 psig in the fire header with no suppression signals to the fire system present.

Which of the following describes automatic fire pump operation?

- a. The air compressor combined with the hydropneumatic tank will start immediately to restore system pressure to 120 psig.
- b. The electric fire pump will start after the "ER" level relay in the hydropneumatic tank is energized to restore system pressure to 130 psig.
- c. The electric motor driven fire pump will start immediately and automatically secure at system pressure.
- d. The diesel engine fire pump will start immediately and must be manually secured.

QUESTION: 063 (1.00)

Which of the following initially indicates that the PRT rupture disk has ruptured following a pressurizer PORV failing OPEN?

- a. PRT temperature decreasing.
- b. Relief line temperature increasing.
- c. PRT level low.
- d. Pressurizer level decreasing.

QUESTION: 064 (1.00)

Which of the following conditions would require the suspension of all core alterations per technical specifications during refueling operations?

- a. The overall containment integrated leakage rate exceeded Technical Specification limits.
- b. The reactor coolant system had an inadvertent dilution to 1750 ppm.
- c. The temporary third door airlock automatic door closer was found broken with two personnel doors closed.
- d. The containment purge and vent isolation system was inoperable with the purge and vent penetrations closed.

QUESTION: 065 (1.00)

The following conditions exist: Unit 1

RCS Pressure	1700 psig
Containment Pressure	22 psig

Equipment list:

- 1. Charging pumps
- 2. CCW pump
- 3. SI pump
- 4. Containment fans
- 5. Containment spray pump
- 6. RHR pump
- 7. MD Aux FWP
- 8. Service water pump
- 9. Service air compressor

Which of the following is the order of sequential diesel loading for the listed equipment for these conditions?

- a. 3-6-7-8-4
- b. 2-4-8-7-9
- c. 3-6-4-8-5
- d. 3-2-7-6-1

QUESTION: 066 (1.00)

Which of the following is the reason all reactor coolant pumps are tripped according to CSP-H.1, "Response to Loss of Secondary Heat Sink"?

- a. To increase the time available to restore feed flow to a steam generator.
- b. To allow immediate initiation of RCS bleed and feed when no SI pumps are available.
- c. To get increased safety injection flow by decreasing RCS cold leg pressure.
- d. To minimize the possibility of a tube rupture as AFW is restored to the steam generator.

QUESTION: 067 (1.00)

The following plant conditions exist: Unit 1

Reactor power: 100% steady state
All control systems in automatic
T-cold temperature transmitter TE-401 B fails low

Which of the following describes the affects of this failure on the corresponding Tavg and Delta-T indications?

- | | Tavg | Delta-T |
|----|-----------|-----------|
| a. | INCREASES | INCREASES |
| b. | DECREASES | DECREASES |
| c. | INCREASES | DECREASES |
| d. | DECREASES | INCREASES |

QUESTION: 068 (1.00)

Which of the following is an immediate operator action for ECA-0.0, Loss of All AC Power?

- a. Place motor driven AFW pumps in Pull-To-Lock.
- b. Check if the letdown isolation valves are closed.
- c. Try to restore power to any AC emergency bus.
- d. Check main steamline isolation valves are closed.

QUESTION: 069 (1.00)

The following conditions exist: Unit 1

Tavg	550 deg F
Tref	552 deg F
Rod control	Automatic
Control bank D	Stepping OUT

Which of the following describes the immediate operator actions that should be taken?

- a. Manually trip the reactor and perform EOP-0, Reactor Trip or Safety Injection immediate actions.
- b. Place rods in Bank D select and verify rod control is operable by driving rods in and out.
- c. Place rods in manual and verify rod motion stops.
- d. Monitor Tavg and ensure that the rod motion is in response to the Tavg/Tref mismatch.

QUESTION: 070 (1.00)

A radiation worker has received .1 RAD of alpha, .2 RAD of beta, .3 RAD of gamma, and .4 RAD of neutron. How much total exposure (in mREM) has the worker received?

- a. 1000
- b. 1900
- c. 5500
- d. 6500

QUESTION: 071 (1.00)

According to 10 CFR 20, what is the definition of Total Effective Dose Equivalent (TEDE)?

- a. It is the sum of the Shallow Dose Equivalent, Whole Body (SDE, WB) and the Committed Effective Dose Equivalent (CEDE).
- b. It is the sum of the Deep Dose Equivalent (DDE) and the Committed Dose Equivalent (CDE).
- c. It is the sum of the Deep Dose Equivalent (DDE) and the Committed Effective Dose Equivalent (CEDE).
- d. It is the sum of the Shallow Dose Equivalent, Max Extremity (SDE,ME) and the Deep Dose Equivalent (DDE).

QUESTION: 072 (1.00)

Performance of EOP-1.2, SMALL BREAK LOCA COOLDOWN AND DEPRESSURIZATION, is in progress. What is the PRIMARY reason for starting both control rod shroud fans after depressurizing the RCS?

- a. To provide adequate cooling for the NIS detectors
- b. To provide adequate cooling for the CRDMs
- c. To cool down the upper head region of the reactor vessel
- d. To reduce containment pressure and humidity

QUESTION: 073 (1.00)

Which one of the following radiation monitors would be a symptom of a fuel handling accident in the spent fuel pit per AOP-8C "IRRADIATED FUEL HANDLING ACCIDENT IN THE SPENT FUEL PIT"?

- a. SPING-23 (auxiliary building exhaust)
- b. RE-313 (auxiliary building exhaust iodine)
- c. RE-220 (SFP liquid monitor)
- d. RE-221 (drumming area vent gas)

QUESTION: 074 (1.00)

During a startup with the plant operating at 12% power, one shutdown bank A rod position indicator fails. Which of the following actions should be taken?

- a. Ensure power does not exceed 90%.
- b. Perform a normal shutdown of the plant to a Hot Shutdown condition.
- c. Check the position of the RCCA indirectly by core instrumentation every shift.
- d. Continue with the power increase. Special monitoring is not required while operating < 50%.

QUESTION: 075 (1.00)

The 2P-1B #1 seal has malfunctioned causing seal leakoff flow to INCREASE. Which one of the following actions is required according to AOP-1B "REACTOR COOLANT PUMP MALFUNCTION"?

- a. Shut 2P-1B #1 seal bypass valve CV-386
- b. Slowly close charging line flow control valve HCV-142
- c. Open 2P-1B thermal barrier isolation valve CV-761B
- d. Fully open charging line flow control valve HCV-142

QUESTION: 076 (1.00)

CCW surge tank level is increasing. Which one of the following component failures would explain the flow IN to the CCW system? (Assume all the components are on line)

- a. Seal return heat exchanger
- b. Primary sample heat exchangers
- c. RCP motor bearing coolers
- d. BA evaporator overhead condenser and distillate cooler

QUESTION: 077 (1.00)

An ATWS event has occurred and you are performing step 2, "Verify Turbine Trip", of CSP-S.1, "RESPONSE TO NUCLEAR POWER GENERATION/ATWS", when a SI actuation occurs. What is the correct course of action?

- a. Perform both the immediate actions of EOP-0, "REACTOR TRIP OR SAFETY INJECTION", and the rest of the actions in CSP-S.1 in parallel
- b. Transition immediately to EOP-0, "REACTOR TRIP OR SAFETY INJECTION" and make subsequent transitions as directed by EOP-0
- c. Complete the action steps of CSP-S.1 through step 4 (Emergency Boration) then perform the action steps of CSP-S.1 Appendix A and continue with CSP-S.1 step 5 in parallel
- d. Transition to and immediately perform the actions in CSP-S.1 Appendix A then return to CSP-S.1 step 3

QUESTION: 078 (1.00)

EOP-1 "LOSS OF REACTOR OR SECONDARY COOLANT", directs the operator to cool down and depressurize the secondary side of the intact steam generator to less than RCS pressure if intact steam generator pressure is greater than RCS pressure. If fuel damage is suspected, then during performance of this action, steam generator pressures...

- a. should be decreased to less than primary pressure to minimize steam voiding in the core
- b. should be maintained higher than primary pressure to minimize radiological releases
- c. should be decreased to less than primary pressure to assist natural circulation flow
- d. should be maintained higher than primary pressure to enhance cooldown of the RCS

QUESTION: 079 (1.00)

Which ONE of the following describes the basis for the minimum requirement of pressurizer heaters that must be operable from an emergency power source?

- a. To maintain RCS pressure during natural circulation.
- b. To minimize thermal shock during auxiliary spray operation.
- c. To limit an RCS pressure increase to within the capacity of auxiliary spray.
- d. To maintain RCS subcooling for RCP operation.

QUESTION: 080 (1.00)

The following conditions exist:

- Reactor Bypass breaker "A" racked in and closed for testing.
- Reactor Trip breaker "A" open.

Which of following describes the response if bypass breaker "B" is racked in?

- a.a. Bypass breaker "A" will remain shut and trip breaker "B" will receive a trip open signal.
- b. Bypass breaker "A" and trip breaker "B" will remain shut.
- c. Bypass breaker "A" and trip breaker "B" will receive trip open signals.
- d. Both bypass breakers (A and B) will receive trip open signals.

QUESTION: 081 (1.00)

Consider the following incomplete sentence:

According to Technical Specifications, reactor power shall not be maintained above _____ of rated power unless both reactor coolant pumps are in operation.

Which of the following values is the MAXIMUM value listed below that would NOT cause a technical specification violation?

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

QUESTION: 082 (1.00)

Which ONE of the following is the reason for the requirement to maintain a minimum of 15 psig backpressure on the VCT?

- a. Provides sufficient pressure for adequate hydrogen makeup flowrate.
- b. Ensures the required NPSH for the Charging pumps.
- c. Prevents oxygen from entering the CVCS system.
- d. Ensures flow to the No. 2 RCP seal.

QUESTION: 083 (1.00)

Which ONE of the following actions would occur automatically upon reaching a Low-Low level condition (Less than 4%) in the Volume Control Tank (VCT)?

- a. Isolation of Normal letdown.
- b. Isolation of Excess letdown.
- c. Shift charging pump suction to the RWST.
- d. Initiation of automatic makeup to the VCT.

QUESTION: 084 (1.00)

Which of the following is an automatic action associated with a Safety Injection Actuation only on Unit 2?

- a. Electric fire pump trips.
- b. Service air compressor, K3A trips.
- c. Turbine building crane is deenergized.
- d. Pressurizer heater backup groups A and B trip.

QUESTION: 085 (1.00)

Which of the following conditions would be indicated by an illuminated status light on the "SI-Spray Ready Panel"?

A component:

- a. has lost DC control power.
- b. is out of normal SI ready alignment.
- c. is aligned, at the SI ready state.
- d. is in its SI actuated alignment (after SI sequence).

QUESTION: 086 (1.00)

Waste Gas Decay Tank A is lined up to receive waste gas from the waste gas compressors. Waste Gas Decay Tank B is selected as standby.

Which of the following describes how the Waste Gas System will automatically respond when Waste Gas Decay Tank A reaches 95 psig?

- a. Waste Gas Decay Tank A isolates and Waste Gas Decay Tank B is aligned for fill.
- b. Waste Gas Decay Tank A isolates and waste gas is diverted to the Deaerated Drain Tanks.
- c. Waste Gas Decay Tank B is placed in service and Waste Gas Decay Tank C is selected as the standby tank.
- d. Waste Gas Decay Tank B is placed in service and Waste Gas Compressor vents the moisture separator to the CVCS Holdup Tanks.

QUESTION: 087 (1.00)

Which of the following would be the expected response from attempting to reset safety injection (SI) with an auto signal still present? Assume reset performed 5 minutes after SI actuation.

- a. SI will reset and components started/repositioned will return to pre-safeguards position.
- b. SI will reset but additional auto SI signals will not re-initiate SI.
- c. SI will not reset.
- d. SI will momentarily reset then will reinitiate.

QUESTION: 088 (1.00)

Which of the following describes the type of protection afforded by the Reactor Protection System Overpower Delta-T (OPDT) trip?

- a. Backup protection from a loss of feedwater.
- b. Departure from nucleate boiling.
- c. Excessive core steam voiding.
- d. KW per linear foot.

QUESTION: 089 (1.00)

After a reactor trip, it is noted that THREE rods have failed to insert, but the trip breakers have opened. Which of the following actions should be taken, according to EOP-0.1, "Reactor Trip Response"?

- a. Initiate safety injection.
- b. Transition to CSP-S.1 (ATWS).
- c. Open the rod drive MG set breakers.
- d. Initiate emergency boration.

QUESTION: 090 (1.00)

Which of the following nuclear instruments should be used to confirm the reactor is subcritical during an ATWS with a design base LOCA inside containment?

- a. N-40, gamma-metrics wide range
- b. N-41, power range
- c. N-35, intermediate range
- d. N-31, source range

QUESTION: 091 (1.00)

Which of the following conditions would REQUIRE an RCP to be secured, according to AOP-1B, "Reactor Coolant Pump Malfunction"?

- a. RCP seal outlet temperature is stable at 220 degrees-F.
- b. RCP cooling water flow low alarm.
- c. RCP frame vibration is stable at 12 mils.
- d. RCP lower sump oil level high-low alarm.

QUESTION: 092 (1.00)

Which of the following conditions would require a reactor trip during a Loss of Component Cooling (CCW), according to AOP-9B, "Loss of Component Cooling"?

- a. CCW low flow alarms on the SI pumps.
- b. The RCP motor bearing temperatures at 200 degrees-F.
- c. A high radiation monitor alarm is received.
- d. CCW pump discharge low pressure alarm is received.

QUESTION: 093 (1.00)

The following plant conditions exist:

Reactor Power:	100%
Control room:	ON FIRE
Offsite Power:	AVAILABLE

A control room evacuation has been ordered and AOP-10A, "Safe Shutdown-Local Control" has been entered. The operators should immediately...

- a. initiate SI.
- b. establish feed to the "A" SG.
- c. start P-35B, the diesel fire pump.
- d. initiate emergency boration.

QUESTION: 094 (1.00)

Which of the following must approve the raising of an area monitor's Alert alarm to a value that is still below the High alarm setpoint, according to OM 4.1.7, "RMS Alarm Setpoint & Response Book"?

- a. Control operator.
- b. Duty Shift Superintendent.
- c. Superintendent - I & C.
- d. Health physics technician.

QUESTION: 095 (1.00)

A pressurizer level instrument develops a leak in its reference leg. Which of the following statements describes how and why indicated pressurizer level will change?

- a. Level increases because of less mass in the reference leg causing bellows DP to decrease.
- b. Level increases because of more mass in the reference leg causing bellows DP to increase.
- c. Level decreases because of less mass in the reference leg causing bellows DP to decrease.
- d. Level decreases because of more mass in the reference leg causing bellows DP to increase.

QUESTION: 096 (1.00)

The ALARA concept:

- a. Specifies exposure limits in emergency situations.
- b. Prevents exceeding 10CFR20 exposure limits.
- c. Applies to both external and internal exposure.
- d. Defines minimum dosimetry requirements for radiation work permits.

QUESTION: 097 (1.00)

PBNP has committed to having the DTA report to the control room after being notified of an "off normal" event within...

- a. 5 minutes
- b. 10 minutes
- c. 15 minutes
- d. 20 minutes

QUESTION: 098 (1.00)

Which of the following actions is NOT required for out of spec log readings?

- a. Provide a reason for the reading in the comments section.
- b. Assign a number to the reading.
- c. Initial the reading.
- d. Circle the reading.

QUESTION: 099 (1.00)

Who is authorized to function as the FIRE BRIGADE CHIEF?

- a. The Duty Shift Superintendent (DSS)
- b. The Duty Operating Supervisor
- c. Any designated Fire Brigade member
- d. Any designated licensed individual.

QUESTION: 100 (1.00)

Given the following plant conditions:

- The reactor is shutdown.
- Pressurizer pressure is 1000 psia.
- PRT pressure is 5 psig.
- PRT temperature is 90 degrees F.

Assume ambient heat losses are negligible and the steam quality in the pressurizer vapor space is 100%. Also, assume pressurizer and PRT conditions do NOT change.

Which of the following tailpipe downstream temperatures would be expected for a leaking pressurizer safety valve under these conditions?

- a. 330 degrees F
- b. 300 degrees F
- c. 265 degrees F
- d. 225 degrees F

(***** END OF EXAMINATION *****)

ANSWER: 001 (1.00)

b

REFERENCE:

LP-0078, Pg. 5

004000K601 ..(KA's)

ANSWER: 002 (1.00)

b

REFERENCE:

TS 15.6.2.2

194001A103 ..(KA's)

ANSWER: 003 (1.00)

c

REFERENCE:

E-0 Bkgd., Pg. 8

003000K110 ..(KA's)

ANSWER: 004 (1.00)

d

REFERENCE:

ECA-2.1

000040A110 ..(KA's)

ANSWER: 005 (1.00)

d

REFERENCE:

TRHB 13.3, Pg. 9, LP 0273, Pg. 26; AOP 0.1, Pg. 3; STPT 20.1, sht 16

000056G011 ..(KA's)

ANSWER: 006 (1.00)

b

REFERENCE:

TRHB 10.3, Pg. 14

010000K403 ..(KA's)

ANSWER: 007 (1.00)

b

REFERENCE:

TRHB 13.4, Pg. 21

039000K408 ..(KA's)

ANSWER: 008 (1.00)

c

REFERENCE:

TRHB 13.7, Pgs. 3-5

000054A205 ..(KA's)

ANSWER: 009 (1.00)

b

REFERENCE:

TRHB 13.4. Pgs. 4-5

000007A205 ..(KA's)

ANSWER: 010 (1.00)

d

REFERENCE:

facility exam bank #052-01-001A

194001K116 ..(KA's)

ANSWER: 011 (1.00)

a

REFERENCE:

TRHB 10.3, Pg. 7, FSAR

002000K612 ..(KA's)

ANSWER: 012 (1.00)

c

REFERENCE:

TRHB 13.3, Pg. 36; stpt 4.2

012000K106 ..(KA's)

ANSWER: 013 (1.00)

c

REFERENCE:

TRHB 10.6, Pg. 28

004000K104 ..(KA's)

ANSWER: 014 (1.00)

b

REFERENCE:

CSPs

000074G012 ..(KA's)

ANSWER: 015 (1.00)

c

REFERENCE:

EOP-1 step 2 bkgd.

000009K321 .. (KA's)

ANSWER: 016 (1.00)

b

REFERENCE:

TS 15.3.7-7

000056A214 .. (KA's)

ANSWER: 017 (1.00)

c

REFERENCE:

CSP-C.1

000074A106 .. (KA's)

ANSWER: 018 (1.00)

b

REFERENCE:

TRHB Figure 13.1.1B

015000A202 .. (KA's)

ANSWER: 019 (1.00)

a

REFERENCE:

steam tables

002000K509 ..(KA's)

ANSWER: 020 (1.00)

d

REFERENCE:

EOP-0

194001A102 ..(KA's)

ANSWER: 021 (1.00)

b

REFERENCE:

10CFR20

194001K103 ..(KA's)

ANSWER: 022 (1.00)

b

REFERENCE:

EP-6, Pg. 15

194001A116 ..(KA's)

ANSWER: 023 (1.00)

c

REFERENCE:

TRHB 10.3, Pg. 9; Table 10.3.2

007000A205 ..(KA's)

ANSWER: 024 (1.00)

c

REFERENCE:

TRHB 11.10, Pg. 15

000007A107 ..(KA's)

ANSWER: 025 (1.00)

c

REFERENCE:

EP 6.0, Pgs. 19-20

194001A116 ..(KA's)

ANSWER: 026 (1.00)

c

REFERENCE:

EOP-3 Pg. 3 (bkgd)

000038K305 ..(KA's)

ANSWER: 027 (1.00)

c

REFERENCE:

OP-4B; AOP-1B; OP-1B

003000G010 ..(KA's)

ANSWER: 028 (1.00)

b

REFERENCE:

LP 0125, Pg. 10

003000G007 ..(KA's)

ANSWER: 029 (1.00)

d

REFERENCE:

TRHB 10.6, Pg. 12

194001K115 ..(KA's)

ANSWER: 030 (1.00)

c

REFERENCE:

THHB 13.1, Pg. 22

000032G008 ..(KA's)

ANSWER: 031 (1.00)

a

REFERENCE:

OM 3.17, Pg. 4

194001K101 ..(KA's)

ANSWER: 032 (1.00)

a

REFERENCE:

Sim failures RCS-4, SGN-2

000040A203 ..(KA's)

ANSWER: 033 (1.00)

d

REFERENCE:

LP-0701 (Accident Response IX), Pg. 7

000011A109 ..(KA's)

ANSWER: 034 (1.00)

b

REFERENCE:

CSP-S.1, Pg. 11

000029G012 ..(KA's)

ANSWER: 035 (1.00)

c

REFERENCE:

TS 15.6.2.2

194001K116 ..(KA's)

ANSWER: 036 (1.00)

a

REFERENCE:

TRHB 10.6, Pg. 33

004000K118 ..(KA's)

ANSWER: 037 (1.00)

b

REFERENCE:

TRHB Fig 10.6.1

005000K104 ..(KA's)

ANSWER: 038 (1.00)

d

REFERENCE:

SIM failure NIS-1

000007K202 ..(KA's)

ANSWER: 039 (1.00)

c

REFERENCE:

AOP-6E, Pg. 1

000029K312 ..(KA's)

ANSWER: 040 (1.00)

d

REFERENCE:

TRHB-11.3, Pg. 9

059000K416 ..(KA's)

ANSWER: 041 (1.00)

d

REFERENCE:

TRHB 13.1, Pgs. 11, 19

015000K501 ..(KA's)

ANSWER: 042 (1.00)

c

REFERENCE:

TS 15.3.1-12

000037A210 ..(KA's)

ANSWER: 043 (1.00)

a

REFERENCE:

LP-0066, Pg. 20

006000K502 ..(KA's)

ANSWER: 044 (1.00)

a

REFERENCE:

TRHB 11.11, Pg. 3

078000A301 ..(KA's)

ANSWER: 045 (1.00)

b

REFERENCE:

NP 1.9.13, Pg. 3

194001K116 ..(KA's)

ANSWER: 046 (1.00)

c

REFERENCE:

AOP-6A, Pg. 5

000003G007 ..(KA's)

ANSWER: 047 (1.00)

a

REFERENCE:

AOP 6C, Pgs. 1-2

000001A205 ..(KA's)

ANSWER: 048 (1.00)

b

REFERENCE:

TRHB 10.2, Pg. 17

003000A201 ..(KA's)

ANSWER: 049 (1.00)

a

REFERENCE:

TS 15.3.3-8

000025K101 .. (KA's)

ANSWER: 050 (1.00)

d

REFERENCE:

TRHB 10.8, Pg. 20

000007A103 .. (KA's)

ANSWER: 051 (1.00)

b.

REFERENCE:

BG CSP-Z.1 REV. 3 P.3

000069G011 .. (KA's)

ANSWER: 052 (1.00)

d

REFERENCE:

BG ECA 0.0 REV. 10 STEP 13

000055G007 .. (KA's)

ANSWER: 053 (1.00)

b

REFERENCE:

ROD-10, p.2

001010K526 ..(KA's)

ANSWER: 054 (1.00)

a

REFERENCE:

TRHB 13.12 pgs. 33-35; Fig. 13.12.15

073000A402 ..(KA's)

ANSWER: 055 (1.00)

b

REFERENCE:

AOP-5B, p. 7; 14

000065A208 ..(KA's)

ANSWER: 056 (1.00)

a

REFERENCE:

OP-4F p. 9

002000K401 ..(KA's)

ANSWER: 057 (1.00)

b

REFERENCE:

TRHB 13.7 p.6 Fig. 13.7.1

035010K401 ..(KA's)

ANSWER: 058 (1.00)

d

REFERENCE:

BEP-0

000040K304 ..(KA's)

ANSWER: 059 (1.00)

d

REFERENCE:

T/S 15.3.1-4

002000G010 ..(KA's)

ANSWER: 060 (1.00)

b

REFERENCE:

AOP-5B, Loss of Instrument Air

078000G014 ..(KA's)

ANSWER: 061 (1.00)

a

REFERENCE:

CSP-C.2

194001A102 ..(KA's)

ANSWER: 062 (1.00)

d

REFERENCE:

TRHB 11.14 p.17

086000K402 ..(KA's)

ANSWER: 063 (1.00)

a

REFERENCE:

Steam tables

000008A108 ..(KA's)

ANSWER: 064 (1.00)

b

REFERENCE:

Tech Spec. 15.3.8-1

034000G011 ..(KA's)

ANSWER: 065 (1.00)

a

REFERENCE:

TRHB 10.16 P.19

000056K301 ..(KA's)

ANSWER: 066 (1.00)

a

REFERENCE:

Background CSP-H.1 p.3

000074K304 ..(KA's)

ANSWER: 067 (1.00)

d

REFERENCE:

FIG 13.3.4

002000K512 ..(KA's)

ANSWER: 068 (1.00)

d

REFERENCE:

ECA 0.0

000055G010 ..(KA's)

ANSWER: 069 (1.00)

d

REFERENCE:

AOP-6C

000001A205 ..(KA's)

ANSWER: 070 (1.00)

d

REFERENCE:

10CFR20

194001K103 ..(KA's)

ANSWER: 071 (1.00)

c.

REFERENCE:

10 CFR 20.1003, Definitions

194001K103 ..(KA's)

ANSWER: 072 (1.00)

c

REFERENCE:

BG EOP-1.2 pg.12

022000K405 ..(KA's)

ANSWER: 073 (1.00)

d

REFERENCE:

AOP-8C 3.0 Rev.4

073000G015 ..(KA's)

ANSWER: 074 (1.00)

c

REFERENCE:

TS 15.3.10.D.3

000005G008 ..(KA's)

ANSWER: 075 (1.00)

a

REFERENCE:

AOP-1B

000015A122 ..(KA's)

ANSWER: 076 (1.00)

b

REFERENCE:

AOP-9B App.A

000026A201 ..(KA's)

ANSWER: 077 (1.00)

c

REFERENCE:

CSP-S.1 CAUTION step 5

000029G012 ..(KA's)

ANSWER: 078 (1.00)

b

REFERENCE:

BG EOP1 pg. 10

000011A112 ..(KA's)

ANSWER: 079 (1.00)

a

REFERENCE:

TS 15.3.1-3e

010000K603 ..(KA's)

ANSWER: 080 (1.00)

d

REFERENCE:

TRHB 13.3, p 33.

001000K603 ..(KA's)

ANSWER: 081 (1.00)

c

REFERENCE:

T.S. 15.3.1

003000A105 ..(KA's)

ANSWER: 082 (1.00)

d

REFERENCE:

TRHB 10.6, p 34

004000K104 ..(KA's)

ANSWER: 083 (1.00)

c

REFERENCE:

TRHB 10.6, p 35

004010A105 ..(KA's)

ANSWER: 084 (1.00)

c

REFERENCE:

TRHB 10.16, p 19

013000A403 ..(KA's)

ANSWER: 085 (1.00)

b

REFERENCE:

TRHB 13.4, p 29

013000A301 ..(KA's)

ANSWER: 086 (1.00)

a

REFERENCE:

TRHB 10.15, p 23

071000K404 ..(KA's)

ANSWER: 087 (1.00)

b

REFERENCE:

TRHB 10.16, Rev 3, Steps 5.2.(F) and (g)

006050A401 ..(KA's)

ANSWER: 088 (1.00)

d

REFERENCE:

TRHB 13.3, p 6

012000K502 ..(KA's)

ANSWER: 089 (1.00)

d

REFERENCE:

EOP-0.1, Step 5 RNO

000007A202 ..(KA's)

ANSWER: 090 (1.00)

a

REFERENCE:

CSP-S.1, Note, pg. 11

000029A201 ..(KA's)

ANSWER: 091 (1.00)

c

REFERENCE:

AOP-1B, p 5

000015A122 ..(KA's)

ANSWER: 092 (1.00)

b

REFERENCE:

AOP-9B, Step 6.3, p 3.

000026K303 ..(KA's)

ANSWER: 093 (1.00)

c

REFERENCE:

AOP-10A, pg. 5

000068G010 ..(KA's)

ANSWER: 094 (1.00)

b

REFERENCE:

OM 4.1.7, p 5.

000061G005 ..(KA's)

ANSWER: 095 (1.00)

a

REFERENCE:

TRHB 13.6, p 5,6.

000008K202 ..(KA's)

ANSWER: 096 (1.00)

c

REFERENCE:

NP 4.2.3, section 4.2

194001K103 ..(KA's)

ANSWER: 097 (1.00)

b

REFERENCE:

facility exam bank #086-01-008A

194001K105 ..(KA's)

ANSWER: 098 (1.00)

c

REFERENCE:

facility exam bank #086-01-025A

194001A106 ..(KA's)

ANSWER: 099 (1.00)

a

REFERENCE:

facility exam bank #086-01-047A

194001K116 ..(KA's)

ANSWER: 100 (1.00)

b.