UNITED STATES NUCLEAR REGULATORY COMMISSION
BOILING WATER REACTOR GENERIC FUNDAMENTALS EXAMINATION
DECEMBER 2006--FORM A

Please Print

Name: _____

Docket No.: _____

Facility: _____

Start Time: _____ Stop Time: _____

INSTRUCTIONS TO APPLICANT

Answer all the test items using the answer sheet provided, ensuring a single answer is marked for each test item. Each test item has equal point value. A score of at least 80% is required to pass this portion of the NRC operator licensing written examination. All examination papers will be collected 3.0 hours after the examination starts. This examination applies to a typical boiling water reactor (BWR) nuclear power plant.

SECTION	QUESTIONS	% OF TOTAL	SCORE
COMPONENTS	1 - 22		
REACTOR THEORY	23 - 36		
THERMODYNAMICS	37 - 50		
TOTALS	50		

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

_____

Applicant's Signature

RULES AND GUIDELINES FOR THE NRC
GENERIC FUNDAMENTALS EXAMINATION

During the administration of this examination the following rules apply:

NOTE: The generic term "control rod" refers to the length of neutron absorber material that can be positioned by the operator to change core reactivity.

1. Print your name in the blank provided on the cover sheet of the examination.

2. Fill in your individual docket number.

3. Fill in the name of your facility.

4. Fill in your start and stop times at the appropriate time.

5. Two aids are provided for your use during the examination:

   (1) An equations and conversions sheet contained within the examination copy, and

   (2) Steam tables and Mollier Diagram provided by your proctor.

6. Place your answers on the answer sheet provided. Credit will only be given for answers properly marked on this sheet. Follow the instructions for filling out the answer sheet.

7. Scrap paper will be provided for calculations.

8. Cheating on the examination will result in the automatic forfeiture of this examination. Cheating could also result in severe penalties.

9. Restroom trips are limited. Only **ONE** examinee may leave the room at a time. In order to avoid the appearance or possibility of cheating, avoid all contact with anyone outside of the examination room.

10. After you have completed the examination, sign the statement on the cover sheet indicating that the work is your own and you have neither given nor received any assistance in completing the examination. Either pencil or pen may be used.

11. Turn in your examination materials, answer sheet on top, followed by the examination booklet, then examination aids - steam table booklets, handouts, and scrap paper used during the examination.

12. After turning in your examination materials, leave the examination area, as defined by the proctor. If after leaving you are found in the examination area while the examination is in progress, your examination may be forfeited.

GENERIC FUNDAMENTALS EXAMINATION
EQUATIONS AND CONVERSIONS HANDOUT SHEET

EQUATIONS

$\dot{Q} = \dot{m}c_p\Delta T$

$\dot{Q} = \dot{m}\Delta h$

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

$\dot{Q} \propto \dot{m}^3_{\text{Nat Circ}}$

$\Delta T \propto \dot{m}^2_{\text{Nat Circ}}$

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

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

$SUR = 26.06/\tau$

$\tau = \dfrac{\bar{\beta} - \rho}{\lambda_{eff}\,\rho}$

$\rho = \dfrac{\ell^*}{\tau} + \dfrac{\bar{\beta}}{1 + \lambda_{eff}\tau}$

$\ell^* = 1 \times 10^{-4}$ sec

$\lambda_{eff} = 0.1\ \text{sec}^{-1}$ (for small positive ρ)

$DRW \propto \varphi^2_{tip}/\varphi^2_{avg}$

$P = P_o 10^{SUR(t)}$

$P = P_o e^{(t/\tau)}$

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

$CR_{S/D} = S/(1 - K_{eff})$

$CR_1(1 - K_{eff1}) = CR_2(1 - K_{eff2})$

$1/M = CR_1/CR_X$

$A = \pi r^2$

$F = PA$

$\dot{m} = \rho A\vec{v}$

$\dot{W}_{Pump} = \dot{m}\Delta P\upsilon$

$E = IR$

Eff. = Net Work Out/Energy In

$$\frac{g(z_2 - z_1)}{g_c} + \frac{(\vec{v}_2^{\,2} - \vec{v}_1^{\,2})}{2g_c} + \upsilon(P_2 - P_1) + (u_2 - u_1) + (q - w) = 0$$

$g_c = 32.2$ lbm-ft/lbf-sec^2

CONVERSIONS

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1 Mw	= 3.41×10^6 Btu/hr	1 Curie	= 3.7×10^{10} dps
1 hp	= 2.54×10^3 Btu/hr	1 kg	= 2.21 lbm
1 Btu	= 778 ft-lbf	1 gal_{water}	= 8.35 lbm
°C	= (5/9)(°F - 32)	1 ft^3_{water}	= 7.48 gal
°F	= (9/5)(°C) + 32		

QUESTION: 1

A completely full water storage tank is being hydrostatically tested to 100 psig using a positive displacement pump (PDP) with a smooth and constant discharge flow rate of 10 gpm. The tank is protected by a safety valve and a relief valve; both valves will discharge to the atmosphere. Each valve has an opening setpoint of 105 psig and a maximum rated discharge flow rate of 6 gpm. The PDP is inadvertently left running when tank pressure reaches 100 psig.

With the PDP still running, tank pressure will stabilize _____ 105 psig; the greater mass flow rate will be coming from the _____ valve.

A. at; safety

B. above; safety

C. at; relief

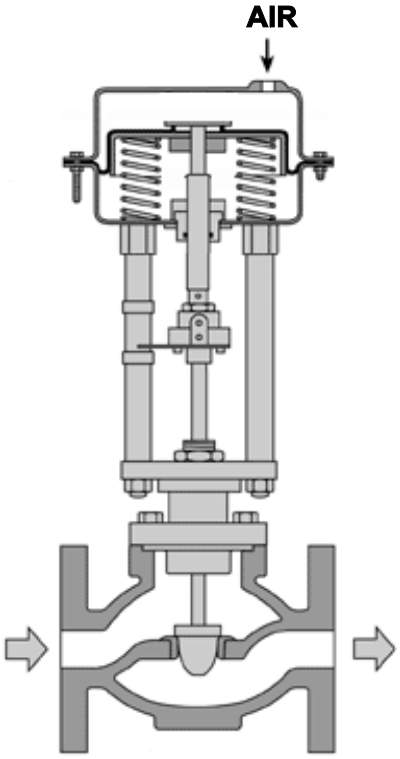
D. above; relief

QUESTION: 2

Refer to the drawing of a pneumatically-operated valve (see figure below). The valve actuator may be shown with or without air pressure applied to it.

Which one of the following describes the type of valve shown, and the fail position on loss of air to the actuator?

	Valve Type	Fail Position
A.	Gate	Open
B.	Gate	Closed
C.	Globe	Open
D.	Globe	Closed



QUESTION: 3

Various types of valves are being considered for use in an application that requires local manual closure capability in the event of an inoperable motor actuator.

Which one of the following types of similarly sized valves requires the most manual valve stem rotation to move the valve from fully open to fully closed? (Assume that each valve has a non-rising stem.)

A. Ball

B. Gate

C. Plug

D. Butterfly

QUESTION: 4

The downcomer region of a reactor vessel contains 40 feet of saturated water at 536°F. A reactor vessel water level detector has a pressure tap located at the bottom of the downcomer region. Approximately how much of the total pressure at the pressure tap is caused by the downcomer water?

A. 0.6 psi

B. 13.0 psi

C. 27.7 psi

D. 156.0 psi

QUESTION: 5

Reed switches are being used in an electrical measuring circuit to monitor the position of a control rod in a nuclear reactor. The reed switches are mounted in a column below the reactor vessel such that the control rod drive shaft passes by the reed switches as the control rod is withdrawn.

Which one of the following describes the action that causes the electrical output of the measuring circuit to change as the control rod is withdrawn?

A. An ac coil on the control rod drive shaft induces a voltage into each reed switch as the drive shaft passes by.

B. A metal tab on the control rod drive shaft mechanically closes each reed switch as the drive shaft passes by.

C. The primary and secondary coils of each reed switch attain maximum magnetic coupling as the drive shaft passes by.

D. A permanent magnet on the control rod drive shaft attracts the movable contact arm of each reed switch as the drive shaft passes by.

QUESTION: 6

Most of the electrons collected in a fission chamber are released as a result of ionizations caused directly by...

A. fission fragments.

B. fission gammas.

C. fission betas.

D. fissionable materials.

QUESTION: 7

Which one of the following describes a characteristic of a self-reading pocket dosimeter (SRPD)?

A. The output of an SRPD is a dose rate in mr/hr.

B. SRPDs can be used to record beta and gamma radiation.

C. SRPD readings must be considered inaccurate when they are dropped.

D. SRPDs hold their charge indefinitely when removed from a radiation field.

QUESTION: 8

A flow controller has proportional, integral, and derivative control features. Which one of the following lists the effect on the control features when the controller is switched from the automatic mode to the manual mode?

A. Only the derivative feature will be lost.

B. Only the integral and derivative features will be lost.

C. All proportional, integral, and derivative features will be lost.

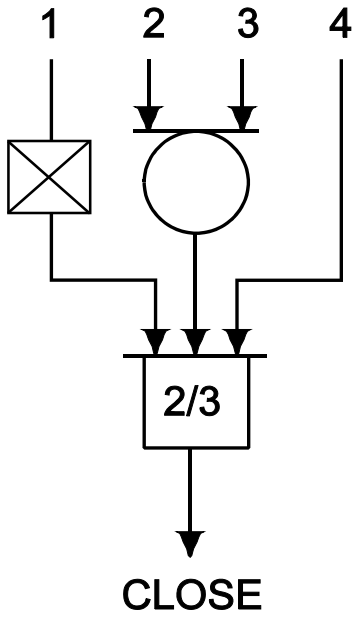
D. All control features will continue to influence the controller output.

QUESTION: 9

Refer to the valve controller logic diagram (see figure below).

Which one of the following combinations of inputs will result in the valve receiving a close signal?

	INPUTS			
	1.	2.	3.	4.
A.	On	On	Off	Off
B.	Off	Off	On	Off
C.	On	Off	Off	On
D.	On	On	On	Off



QUESTION: 10

Refer to the drawing of a pump with a recirculation line (see figure below).

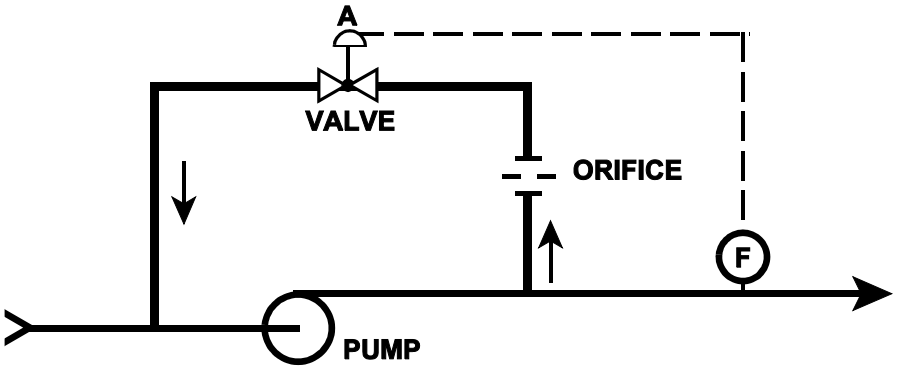
Valve "A" will close when pump...

A. discharge pressure increases above a setpoint.

B. discharge pressure decreases below a setpoint.

C. flow rate increases above a setpoint.

D. flow rate decreases below a setpoint.



QUESTION: 11

An ac motor-driven centrifugal pump was just started. During the start, motor current remained peaked for 6 seconds before decreasing to standard running current. Normally, the starting current peak lasts about 4 seconds.

Which one of the following could have caused the extended starting current peak?

A. The pump shaft was seized and did not turn.

B. The pump was initially rotating slowly in the reverse direction.

C. The pump discharge check valve was stuck closed and did not open.

D. The pump was initially air bound, and then primed itself after 6 seconds of operation.

QUESTION: 12

A centrifugal fire water pump takes a suction on an open storage tank and discharges through a fire hose. Which one of the following will cause the pump to operate at shutoff head?

A. A firefighter inadvertently severs the fire hose.

B. The fire hose becomes partially crimped in a fire door.

C. Fire water storage tank level drops below the pump suction tap.

D. A firefighter adjusts the fire hose nozzle spray pattern from “deluge” to “off”.

QUESTION: 13

Use the following drawing of system and pump operating curves for a positive displacement pump with discharge relief valve protection to answer the following question.

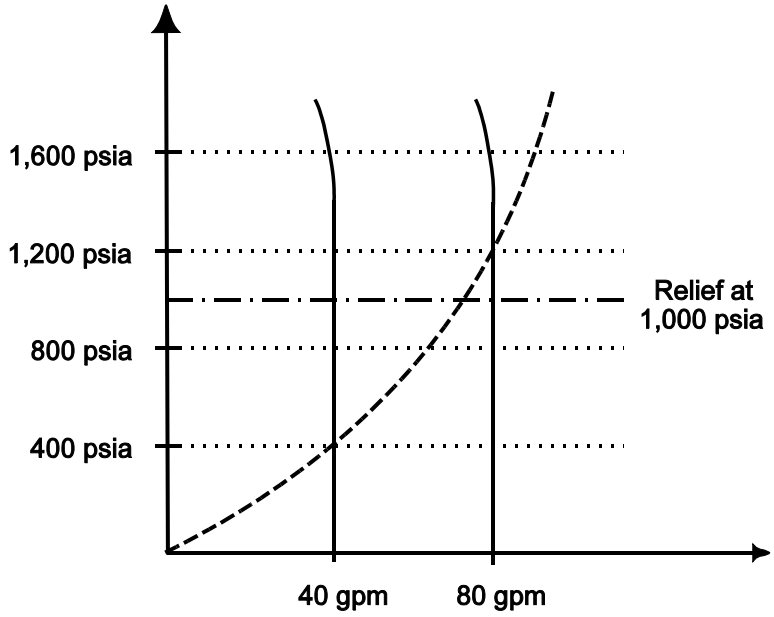
A positive displacement pump is initially supplying 40 gpm to a system at a pump discharge pressure of 400 psia. Then, pump speed is increased until pump flow rate is 80 gpm. What is the pump discharge pressure at the new pump flow rate of 80 gpm?

A. 800 psia

B. 1,000 psia

C. 1,200 psia

D. 1,600 psia



QUESTION: 14

An ac generator is supplying an isolated electrical system with a power factor of 1.0. If generator voltage is held constant while real load (kW) increases, the current supplied by the generator will increase in direct proportion to the _____ of the change in real load. (Assume the generator power factor remains constant at 1.0.)

A. cube

B. square

C. amount

D. square root

QUESTION: 15

A main generator is connected to an infinite power grid with the following initial generator parameters:

Voltage:	22 KV
Frequency:	60 Hertz
Load--Real:	600 MW
Load--Reactive:	100 MVAR (VARS in)
Power Factor:	0.986

Which one of the following contains a combination of manual adjustments to the main generator voltage regulator and speed control setpoints such that each adjustment will initially result in main generator operation at a power factor closer to 1.0. (Assume the generator power factor remains less than 1.0.)

	Voltage Setpoint	Speed Setpoint
A.	Increase	Increase
B.	Increase	Decrease
C.	Decrease	Increase
D.	Decrease	Decrease

QUESTION: 16

A liquid-to-liquid heat exchanger containing trapped air on the shell side will be less efficient because the air...

A. causes more turbulent fluid flow.

B. increases the differential temperature across the tubes.

C. reduces the fluid contact with the heat transfer surface.

D. causes pressure oscillations.

QUESTION: 17

Refer to the following drawing of an operating water cleanup system. Valves A, B, and C are fully open. Valve D is 20% open. All temperatures are as shown.

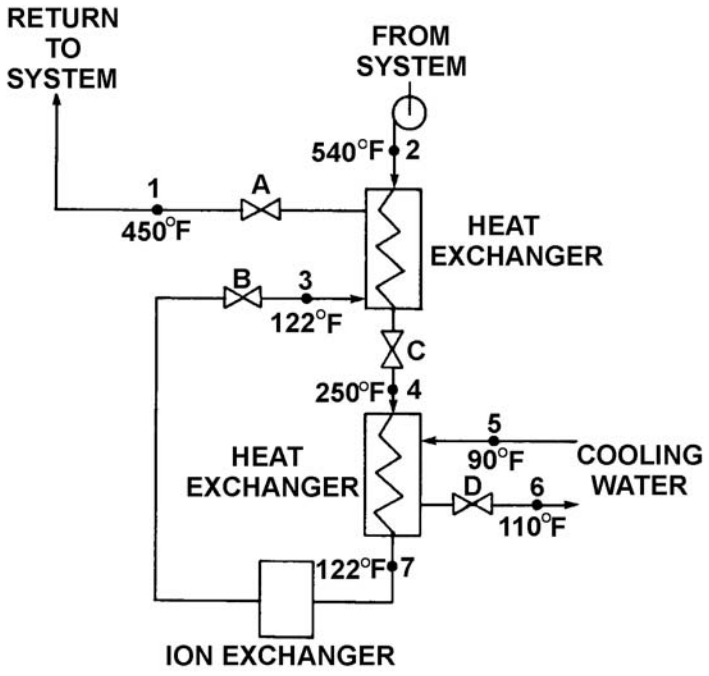
If valve D is then opened to 100%, the temperature at point...

A. 3 will increase.

B. 4 will decrease.

C. 5 will decrease.

D. 7 will increase.



QUESTION: 18

A nuclear reactor is shut down at 400 psia during a maintenance outage when all forced core coolant flow is lost. Which one of the following will enhance natural circulation within the reactor vessel?

A. Increasing reactor vessel pressure to 500 psia.

B. Increasing reactor vessel water level above the steam separators.

C. Decreasing reactor vessel pressure to 300 psia.

D. Decreasing reactor vessel water level to just above the top of the core.

QUESTION: 19

The decontamination factor (or demineralization factor) of a condensate demineralizer has just been determined to be 5.0, based on conductivity measurements.

If condensate having a conductivity of 20 µmho/cm is flowing into this demineralizer, which one of the following is the conductivity of the condensate at the outlet of the demineralizer?

A. 0.4 µmho/cm

B. 4.0 µmho/cm

C. 10.0 µmho/cm

D. 100.0 µmho/cm

QUESTION: 20

Refer to the drawing of a parallel demineralizer loop that is currently aligned for normal flow direction through the demineralizer (see figure below).

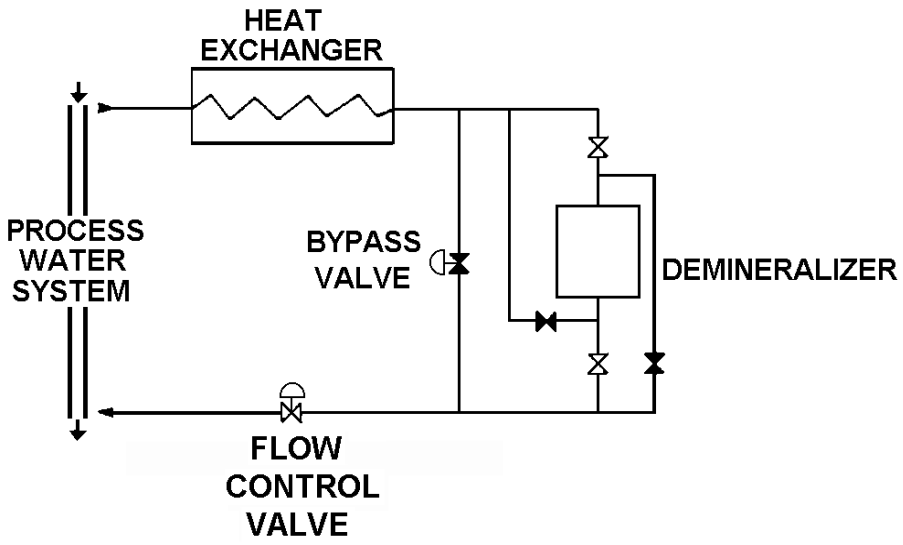
Which one of the following is most likely to cause a decrease in the demineralizer decontamination factor for ionic impurities?

A. Divert 50% of the demineralizer loop flow to bypass the demineralizer.

B. Decrease the process water system pressure from 125 psig to 75 psig.

C. Decrease the flow rate in the demineralizer loop from 105 gpm to 65 gpm.

D. Increase the temperature in the demineralizer loop from 140°F to 200°F.



QUESTION: 21

While remotely investigating the condition of a typical normally-open motor control center (MCC) feeder breaker, an operator observes the following indications:

Green breaker position indicating light is out.
Red breaker position indicating light is lit.
MCC voltmeter indicates zero volts.
MCC ammeter indicates zero amperes.

Based on these indications, the operator can accurately report that the breaker is _____ and racked _____.

A. open; out

B. closed; out

C. open; to the "test" position

D. closed; to the "test" position

QUESTION: 22

Refer to the drawing of a valve control circuit (see figure below).

Note: Limit switch (LS) contacts are shown open regardless of valve position, but relay contacts follow the standard convention for control circuit drawings.

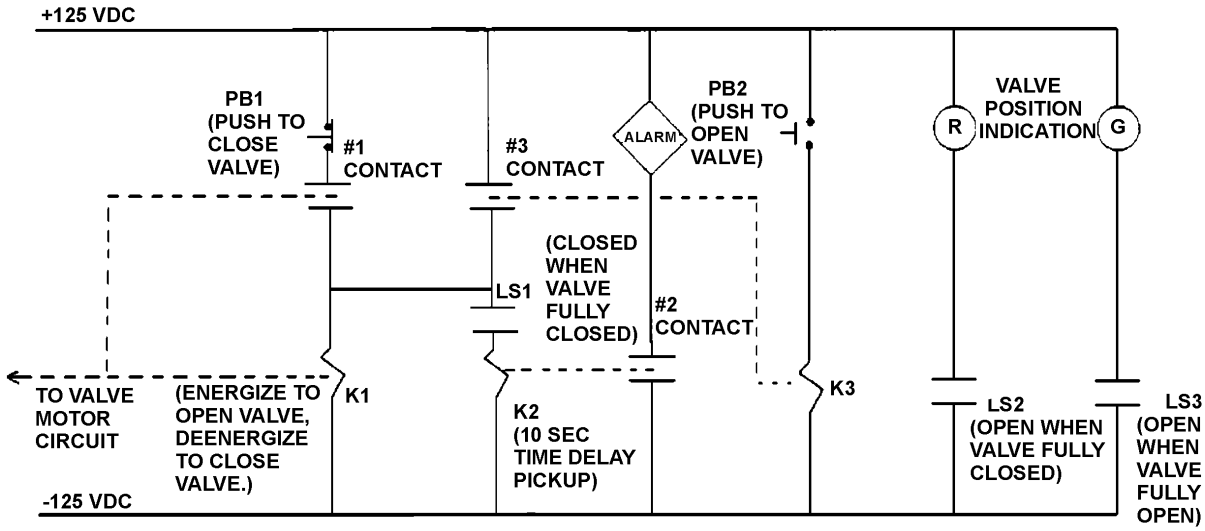
If the valve is presently closed, when will the alarm actuate?

A. As soon as PB2 is pushed.

B. Ten seconds after PB2 is pushed if the valve is still closed.

C. Immediately upon pushing PB2 and for the next 10 seconds if the valve remains closed.

D. Ten seconds after PB2 is pushed if the valve is still stroking open.



VALVE CONTROL CIRCUIT

QUESTION: 23

A fast neutron will lose the greatest amount of energy during a scattering reaction in the moderator if it interacts with...

A. an oxygen nucleus.

B. a hydrogen nucleus.

C. a deuterium nucleus.

D. an electron surrounding a nucleus.

QUESTION: 24

Which one of the following is a reason for installing excess reactivity (K_{excess}) in a reactor core?

A. To compensate for burnout of Xe-135 and Sm-149 during power changes.

B. To ensure the fuel temperature coefficient remains negative throughout core life.

C. To compensate for the negative reactivity added by the power coefficient during a power increase.

D. To compensate for the conversion of U-238 to Pu-239 over core life.

QUESTION: 25

A nuclear reactor has a stable positive period of 140 seconds with core neutron level currently in the source range.

Given the following:

Initial reactor coolant temperature is 150°F.
Moderator temperature coefficient is -0.5×10^{-4} ΔK/K/°F.
Core delayed neutron fraction is 0.006.

If the reactor coolant is allowed to heat up, at what approximate reactor coolant temperature will the reactor period reach infinity? (Ignore any reactivity effects from changes in fission product poisons and fuel temperature.)

A. 151 °F

B. 158 °F

C. 200 °F

D. 230 °F

QUESTION: 26

Which one of the following describes the net reactivity effect of a decrease in moderator temperature in an undermoderated nuclear reactor core?

A. Negative reactivity will be added because more thermal neutrons will be captured by the moderator.

B. Negative reactivity will be added because more neutron leakage will occur.

C. Positive reactivity will be added because less neutron leakage will occur.

D. Positive reactivity will be added because less thermal neutrons will be captured by the moderator.

QUESTION: 27

Which one of the following will cause the void coefficient to become less negative? (Consider only the direct effects of the indicated changes.)

A. Core void fraction increases.

B. Fuel temperature decreases.

C. Gadolinium burns out.

D. Control rods are partially inserted.

QUESTION: 28

A control rod, initially at position 06, is withdrawn three notches. After withdrawal, the control rod is classified as a _____ rod; and the blade tip for this control rod is positioned 36 inches from the _____ position.

A. shallow; fully inserted

B. shallow; fully withdrawn

C. deep; fully inserted

D. deep; fully withdrawn

QUESTION: 29

Which one of the following is a reason for neutron flux shaping?

A. To minimize the worth of individual control rods by evenly distributing the flux radially.

B. To reduce the reverse power effect during rod withdrawal by peaking the flux at the top of the core.

C. To equalize control rod drive mechanism wear and control rod blade neutron burnout.

D. To increase the effectiveness of power control rods by peaking the flux at the bottom of the core.

QUESTION: 30

A nuclear reactor has been operating at 50% power for one week when power is ramped in 4 hours to 100%. Which one of the following describes the new equilibrium xenon concentration?

A. Twice the 50% power concentration.

B. Less than twice the 50% power concentration.

C. More than twice the 50% power concentration.

D. Remains the same because it is independent of power.

QUESTION: 31

Which one of the following describes a reason for the direction of change in core xenon-135 reactivity immediately after a reactor shutdown from long-term power operation?

A. The production rate of Xe-135 from I-135 decay significantly decreases.

B. The production rate of Xe-135 from fission significantly decreases.

C. The removal rate of Xe-135 by decay to I-135 significantly decreases.

D. The removal rate of Xe-135 by neutron absorption significantly decreases.

QUESTION: 32

Refer to the drawing of K_{eff} versus core age (see figure below).

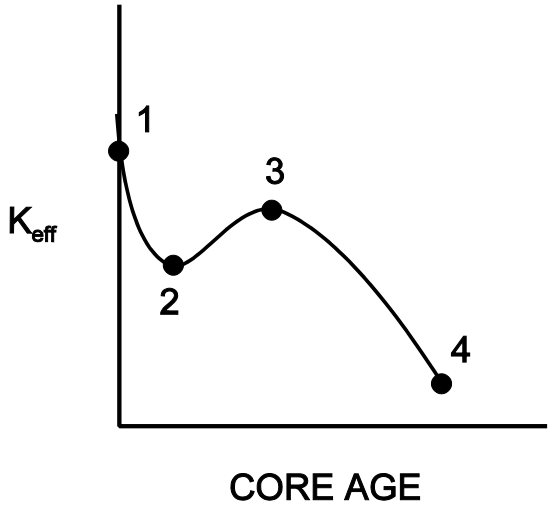
The major cause for the change in K_{eff} from point 3 to point 4 is...

A. depletion of U-235.

B. depletion of U-238.

C. burnout of burnable poisons.

D. buildup of fission product poisons.



QUESTION: 33

Which one of the following indicates that a nuclear reactor has achieved criticality during a normal nuclear reactor startup?

A. Constant positive period with no rod motion.

B. Increasing positive period with no rod motion.

C. Constant positive period during rod withdrawal.

D. Increasing positive period during rod withdrawal.

QUESTION: 34

Neglecting the effects of core Xe-135, which one of the following reactor power changes requires the greatest amount of positive reactivity addition?

A. 3% power to 10% power

B. 10% power to 25% power

C. 25% power to 65% power

D. 65% power to 100% power

QUESTION: 35

A nuclear plower plant that has been operating at rated power for two months experiences a reactor scram. Five minutes after the scram, with all control rods still fully inserted, a count rate of 5,000 cps is indicated on the source range nuclear instruments with a reactor period of negative 80 seconds.

The majority of the source range detector output is currently being caused by the interaction of _____ with the detector.

A. intrinsic source neutrons

B. fission gammas from previous power operation

C. fission neutrons from subcritical multiplication

D. delayed fission neutrons from previous power operation

QUESTION: 36

A nuclear power plant is operating at 100% power when one recirculation pump trips. Reactor power decreases and stabilizes at a lower power level. Which one of the following reactivity coefficients caused the initial decrease in reactor power?

A. Void coefficient

B. Pressure coefficient

C. Moderator temperature coefficient

D. Fuel temperature (Doppler) coefficient

QUESTION: 37

A water storage tank is enclosed to prevent vapors from escaping to the environment. The tank is also pressurized with nitrogen to prevent air inleakage. A differential pressure detector with a dry reference leg is used to measure the tank level.

To achieve the greatest accuracy of measurement, the low pressure side of the detector should sense which one of the following?

A. The pressure at the bottom of the tank

B. The pressure of the atmosphere surrounding the tank

C. The pressure of a column of water external to the tank

D. The pressure of the gas space at the top of the tank

QUESTION: 38

An open vessel contains one pound-mass of water at 206°F and standard atmospheric pressure. Which one of the following will be caused by the addition of 12.0 Btu to the water?

A. The water temperature will rise by about 6°F and none of the water will vaporize.

B. The water temperature will rise by about 6°F and some of the water will vaporize.

C. The water temperature will rise by about 12°F and none of the water will vaporize.

D. The water temperature will rise by about 12°F and some of the water will vaporize.

QUESTION: 39

A nuclear power plant is operating near rated power with the following initial conditions:

Main steam pressure: 900 psia
Main steam quality: 100%, saturated vapor
Main condenser pressure: 1.0 psia

Air leakage into the main condenser results in the main condenser pressure increasing and stabilizing at 2.0 psia. Assume that all main steam parameters (e.g., pressure, quality, and mass flow rate) remain the same and that the main turbine efficiency remains at 100%.

Which one of the following is the approximate percent by which the main generator output will decrease as a result of the main condenser pressure increase?

A. 5.0%

B. 6.3%

C. 7.5%

D. 8.8%

QUESTION: 40

Steam turbines X and Y are identical 100% efficient turbines that exhaust to a condenser at 1.0 psia. Saturated steam at 250 psia enters turbine X. Superheated steam at 250 psia and 500°F enters turbine Y.

Which one of the following lists the percentage of moisture in the exhaust of turbines X and Y?

	Turbine X	Turbine Y
A.	24.5%	20.5%
B.	26.3%	13.0%
C.	24.5%	13.0%
D.	26.3%	20.5%

QUESTION: 41

Which one of the following describes why large steam lines are gradually warmed instead of suddenly admitting full steam flow?

A. To minimize the possibility of stress corrosion cracking of the steam lines.

B. To minimize the total thermal expansion of the steam lines.

C. To minimize the potential for water hammer in the steam lines.

D. To minimize the heat loss from the steam lines.

QUESTION: 42

Water at 90°F and 50 psig is flowing through a 10-inch diameter pipe at 100 lbm/sec. The pipe then splits into two pipes, a 3-inch diameter pipe and a 6-inch diameter pipe. Disregarding any flow restrictions other than pipe size, which one of the following lists the approximate flow rates through the 3-inch and 6-inch diameter pipes? (Assume fluid velocity is the same in each pipe.)

	3-inch Pipe (lbm/sec)	6-inch Pipe (lbm/sec)
A.	10	90
B.	20	80
C.	25	75
D.	33	67

QUESTION: 43

Two of the parameters listed below are used for calculating core thermal power using the standard heat balance method. Which one of the following identifies the two parameters?

	Reactor Core Mass Flow Rate	Feedwater Temperature	Reactor Vessel Pressure	Reactor Vessel Water Level
A.	Yes	No	Yes	No
B.	No	Yes	Yes	No
C.	Yes	No	No	Yes
D.	No	Yes	No	Yes

QUESTION: 44

Which one of the following is indicated by a rapid increase in the fuel clad-to-coolant differential temperature and a decrease in heat flux from the fuel?

A. Bulk boiling is occurring.

B. Departure from nucleate boiling has been reached.

C. Critical heat flux is increasing.

D. Nucleate boiling is occurring.

QUESTION: 45

Without core orifices, the coolant flow rate through a high-power bundle will be less than the flow rate through a low-power bundle because the...

A. two-phase flow-friction multiplier will be greater in the low-power bundle.

B. channel quality will be greater in the high-power bundle.

C. bypass flow will be greater in the high-power bundle.

D. thermal expansion of the fuel rods will be greater in the high-power bundle.

QUESTION: 46

A nuclear reactor is operating at 100% power with 100% core flow rate. Reactor power is decreased and stabilized at 75% using only control rods for reactivity control. Core flow rate is maintained at 100%.

During the power decrease, core bypass flow rate _____ because core pressure drop _____.

A. decreased; increased

B. decreased; decreased

C. increased; increased

D. increased; decreased

QUESTION: 47

Operating a nuclear reactor within the limits defined by the maximum average planar linear heat generation rate (MAPLHGR) prevents...

A. exceeding 1% plastic strain in the cladding.

B. exceeding a peak fuel temperature of 2,200°F.

C. the onset of transition boiling in the upper core.

D. exceeding a peak clad temperature of 2,200°F.

QUESTION: 48

Given the following initial core parameters for a segment of a fuel rod:

Power density = 2 kW/ft
$T_{coolant}$ = 540°F
$T_{fuel\ centerline}$ = 1,800°F

Reactor power is increased such that the following core parameters now exist for the fuel rod segment:

Power density = 4 kW/ft
$T_{coolant}$ = 540°F
$T_{fuel\ centerline}$ = ?

Assuming void fraction surrounding the fuel rod segment does <u>not</u> change, what will be the new stable $T_{fuel\ centerline}$?

A. 2,520°F

B. 2,780°F

C. 3,060°F

D. 3,600°F

QUESTION: 49

A nuclear power plant is operating at 100% power when a turbine trip occurs with no bypass valve actuation. Assuming the reactor does not scram immediately, critical power ratio will initially...

A. increase due to an increased latent heat of vaporization.

B. decrease due to a decreased latent heat of vaporization.

C. increase due to an increased reactor power.

D. decrease due to a decreased reactor power.

QUESTION: 50

After several years of operation the maximum allowable stress to the reactor pressure vessel is more limited by the inner wall than the outer wall because...

A. the inner wall operates at a higher temperature than the outer wall.

B. the inner wall has a smaller surface area than the outer wall.

C. the inner wall experiences more neutron-induced embrittlement than the outer wall.

D. the inner wall experiences more tensile stress than the outer wall.

***** FINAL ANSWER KEY *****

DECEMBER 2006 NRC GENERIC FUNDAMENTALS EXAMINATION
BOILING WATER REACTOR - ANSWER KEY

FORM A	FORM B	ANS.	FORM A	FORM B	ANS.
1	15	B	26	40	C
2	16	C	27	41	B
3	17	B	28	42	C
4	18	B	29	43	A
5	19	D	30	44	B
6	20	A	31	45	D
7	21	C	32	46	A
8	22	C	33	47	A
9	23	B	34	48	C
10	24	C	35	49	D
11	25	B	36	50	A
12	26	D	37	1	D
13	27	B	38	2	B
14	28	C	39	3	C
15	29	A	40	4	A
16	30	C	41	5	C
17	31	B	42	6	B
18	32	B	43	7	B
19	33	B	44	8	B
20	34	D	45	9	B
21	35	D	46	10	B
22	36	B	47	11	D
23	37	B	48	12	C
24	38	C	49	13	B
25	39	B	50	14	C