TOPIC: 292002
KNOWLEDGE: K1.01 [1.9/1.9]
QID: B7737 (P7737)

Before a fission neutron could migrate out of a fuel pellet, the neutron was absorbed by the nucleus of a uranium atom. The absorption occurred at a neutron energy of 2.1 MeV. If the neutron was absorbed by a U-235 nucleus, the most likely outcome would be __________; if the neutron was absorbed by a U-238 nucleus, the most likely outcome would be __________.

A. fission; fission

B. fission; capture

C. capture; fission

D. capture; capture

ANSWER: A.

TOPIC: 292002
KNOWLEDGE: K1.07 [3.5/3.5]
K1.08 [2.7/2.8]
QID: B186 (P44)

Initially, a reactor is subcritical with the effective multiplication factor ($K_{eff}$) equal to 0.998. After a brief withdrawal of control rods, $K_{eff}$ equals 1.002. The reactor is currently...

A. prompt critical.

B. supercritical.

C. exactly critical.

D. subcritical.

ANSWER: B.

TOPIC: 292002
KNOWLEDGE: K1.07 [3.5/3.5]
QID: B247 (P445)

Which one of the following conditions describes a reactor that is exactly critical?

A. $K_{eff} = 0$; $\Delta K/K = 0$

B. $K_{eff} = 0$; $\Delta K/K = 1$

C. $K_{eff} = 1$; $\Delta K/K = 0$

D. $K_{eff} = 1$; $\Delta K/K = 1$

ANSWER: C.

TOPIC: 292002
KNOWLEDGE: K1.08 [2.7/2.8]
QID: B46

Which one of the following does <u>not</u> affect $K_{eff}$?

A. Core dimensions.

B. Core burnup.

C. Moderator-to-fuel ratio.

D. Installed neutron sources.

ANSWER: D.

TOPIC: 292002
KNOWLEDGE: K1.08 [2.7/2.8]
QID: B348

Which one of the following, if decreased, will <u>not</u> affect $K_{eff}$?

A. Fuel enrichment.

B. Control rod worth.

C. Neutron contribution from neutron sources.

D. Shutdown margin when the reactor is subcritical.

ANSWER: C.

TOPIC: 292002
KNOWLEDGE: K1.08 [2.7/2.8]
QID: B847 (P1846)

The effective multiplication factor ($K_{eff}$) describes the ratio of the number of fission neutrons at the end of one generation to the number of fission neutrons at the __________ of the __________ generation.

A. beginning; next

B. beginning; previous

C. end; next

D. end; previous

ANSWER: D.

TOPIC: 292002
KNOWLEDGE: K1.08 [2.7/2.8]
QID: B1447 (P1346)

The effective multiplication factor ($K_{eff}$) can be determined by dividing the number of neutrons in the third generation by the number of neutrons in the __________ generation.

A. first

B. second

C. third

D. fourth

ANSWER: B.

TOPIC: 292002
KNOWLEDGE: K1.08 [2.7/2.8]
QID: B2647 (P2647)

A thermal neutron is about to interact with a U-238 nucleus in an operating reactor. Which one of the following describes the most likely interaction and its effect on $K_{eff}$?

A. The neutron will be scattered, thereby leaving $K_{eff}$ unchanged.

B. The neutron will be absorbed and the nucleus will fission, thereby decreasing $K_{eff}$.

C. The neutron will be absorbed and the nucleus will fission, thereby increasing $K_{eff}$.

D. The neutron will be absorbed and the nucleus will decay to Pu-239, thereby increasing $K_{eff}$.

ANSWER: A.

TOPIC: 292002
KNOWLEDGE: K1.08 [2.7/2.8]
QID: B3147 (P3046)

A nuclear power plant is currently operating at steady-state 80 percent power near the end of its fuel cycle. During the next 3 days of steady-state power operation, no operator action is taken.

How will $K_{eff}$ be affected during the 3-day period?

A. $K_{eff}$ will gradually increase during the entire period.

B. $K_{eff}$ will gradually decrease during the entire period.

C. $K_{eff}$ will tend to increase, but inherent reactivity feedback will maintain $K_{eff}$ at 1.0.

D. $K_{eff}$ will tend to decrease, but inherent reactivity feedback will maintain $K_{eff}$ at 1.0.

ANSWER: D.

TOPIC: 292002
KNOWLEDGE: K1.08 [2.7/2.8]
QID: B6424 (P6424)

A 1.5 MeV neutron is about to interact with a U-238 nucleus in an operating reactor. Which one of the following describes the most likely interaction and its effect on $K_{eff}$?

A. The neutron will be scattered, thereby leaving $K_{eff}$ unchanged.

B. The neutron will be absorbed and the nucleus will fission, thereby decreasing $K_{eff}$.

C. The neutron will be absorbed and the nucleus will fission, thereby increasing $K_{eff}$.

D. The neutron will be absorbed and the nucleus will decay to Pu-239, thereby increasing $K_{eff}$.

ANSWER: A.

TOPIC: 292002
KNOWLEDGE: K1.09 [2.4/2.6]
QID: B1147

Which one of the following combinations of core conditions at 30 percent power indicates the largest amount of excess reactivity exists in the core?

| | Control Rod Position | Reactor Recirculation Flow |
|---|---|---|
| A. | 25% rod density | 25% |
| B. | 50% rod density | 50% |
| C. | 25% rod density | 50% |
| D. | 50% rod density | 25% |

ANSWER: D.

TOPIC: 292002
KNOWLEDGE: K1.09 [2.4/2.6]
QID: B1247

Which one of the following combinations of core conditions at 35 percent power indicates the least amount of excess reactivity exists in the core?

| | Control Rod Position | Reactor Recirculation Flow |
|---|---|---|
| A. | 50% inserted | 50% |
| B. | 50% inserted | 25% |
| C. | 25% inserted | 50% |
| D. | 25% inserted | 25% |

ANSWER: C.

TOPIC: 292002
KNOWLEDGE: K1.09 [2.4/2.6]
QID: B1848 (P646)

Which one of the following defines K-excess?

A. $K_{eff}$ - 1

B. $K_{eff}$ + 1

C. $(K_{eff} - 1)/K_{eff}$

D. $(1-K_{eff})/K_{eff}$

ANSWER: A.

TOPIC: 292002
KNOWLEDGE: K1.09 [2.4/2.6]
QID: B2048 (P1246)

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

A. To compensate for the conversion of U-238 to Pu-239 during a fuel cycle.

B. To compensate for burnout of Xe-135 and Sm-149 during a power increase.

C. To ensure the fuel temperature coefficient remains negative during a fuel cycle.

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

ANSWER: D.

TOPIC: 292002
KNOWLEDGE: K1.09 [2.4/2.6]
QID: B2747 (P2847)

A reactor is operating at full power at the beginning of a fuel cycle. A neutron has just been absorbed by a U-238 nucleus at a resonance energy of 6.7 electron volts.

Which one of the following describes the most likely reaction for the newly formed U-239 nucleus and the effect of this reaction on $K_{excess}$?

A. Decays over several days to Pu-239, which increases $K_{excess}$.

B. Decays over several days to Pu-240, which increases $K_{excess}$.

C. Immediately undergoes fast fission, which decreases $K_{excess}$.

D. Immediately undergoes thermal fission, which decreases $K_{excess}$.

ANSWER: A.

TOPIC: 292002
KNOWLEDGE: K1.09 [2.4/2.6]
QID: B2947

The following are combinations of critical conditions that may exist for the same reactor operating at 50 percent power at different times in core life. Which one of the following combinations indicates the <u>largest</u> amount of excess reactivity present in the reactor fuel?

| | Control <u>Rod Position</u> | Reactor Recir- <u>culation Flow</u> |
|---|---|---|
| A. | 25% rod density | 75% |
| B. | 50% rod density | 50% |
| C. | 25% rod density | 50% |
| D. | 50% rod density | 75% |

ANSWER: B.

TOPIC: 292002
KNOWLEDGE: K1.09 [2.4/2.6]
QID: B3447

The following are combinations of critical conditions that existed for the same reactor operating at 50 percent power at different times in core life. Which one of the following combinations indicates the <u>smallest</u> amount of excess reactivity present in the reactor fuel?

| | Control Rod Position | Reactor Recirculation Flow |
|---|---|---|
| A. | 25% rod density | 75% |
| B. | 50% rod density | 50% |
| C. | 25% rod density | 50% |
| D. | 50% rod density | 75% |

ANSWER: A.

TOPIC: 292002
KNOWLEDGE: K1.09 [2.4/2.6]
QID: B3547 (P3547)

Which one of the following is a benefit of installing excess reactivity ($K_{excess}$) in a reactor?

A. Ensures that sufficient control rod negative reactivity is available to shut down the reactor.

B. Ensures that the reactor can be made critical during a peak xenon condition after a reactor scram.

C. Ensures that positive reactivity additions result in controllable reactor power responses.

D. Ensures that the U-235 fuel enrichment is the same at the beginning and the end of a fuel cycle.

ANSWER: B.

TOPIC: 292002
KNOWLEDGE: K1.10 [3.2/3.5]
QID: B248 (P245)

The shutdown margin determination for an operating reactor assumes the complete withdrawal of…

A. a single control rod of high reactivity worth.

B. a symmetrical pair of control rods of high reactivity worth.

C. a single control rod of average reactivity worth.

D. a symmetrical pair of control rods of average reactivity worth.

ANSWER: A.

TOPIC: 292002
KNOWLEDGE: K1.10 [3.2/3.5]
QID: B1348

The shutdown margin for an operating reactor is the amount of reactivity by which a xenon-free reactor at 68°F would be subcritical if all control rods were fully...

A. withdrawn, except for an average worth control rod which remains fully inserted.

B. inserted, except for an average worth control rod which remains fully withdrawn.

C. withdrawn, except for the highest worth control rod which remains fully inserted.

D. inserted, except for the highest worth control rod which remains fully withdrawn.

ANSWER: D.

TOPIC: 292002
KNOWLEDGE: K1.11 [3.2/3.3]
QID: B47

The fractional change in neutron population from one generation to the next is called...

A. beta.

B. lambda.

C. reactivity.

D. K-effective.

ANSWER: C.

TOPIC: 292002
KNOWLEDGE: K1.12 [2.4/2.5]
QID: B648 (P1946)

In a subcritical reactor, $K_{eff}$ was increased from 0.85 to 0.95 by rod withdrawal. Which one of the following is the approximate amount of reactivity that was added to the core?

A. 0.099 $\Delta K/K$

B. 0.124 $\Delta K/K$

C. 0.176 $\Delta K/K$

D. 0.229 $\Delta K/K$

ANSWER: B.

TOPIC: 292002
KNOWLEDGE: K1.12 [2.4/2.5]
QID: B748 (P3347)

With $K_{eff}$ equal to 0.983, how much positive reactivity must be added to make the reactor critical? (Round answer to the nearest 0.01 %ΔK/K.)

A. 1.70 %ΔK/K

B. 1.73 %ΔK/K

C. 3.40 %ΔK/K

D. 3.43 %ΔK/K

ANSWER: B.

TOPIC: 292002
KNOWLEDGE: K1.12 [2.4/2.5]
QID: B1548 (P446)

With $K_{eff}$ equal to 0.987, how much reactivity must be added to make the reactor critical? (Round answer to the nearest 0.01 %ΔK/K.)

A. 1.01 %ΔK/K

B. 1.03 %ΔK/K

C. 1.30 %ΔK/K

D. 1.32 %ΔK/K

ANSWER: D.

TOPIC: 292002
KNOWLEDGE: K1.12 [2.4/2.5]
QID: B1947 (P2447)

With $K_{eff}$ equal to 0.985, how much positive reactivity is required to make the reactor critical? (Round answer to the nearest 0.01 %ΔK/K.)

A. 1.49 %ΔK/K

B. 1.50 %ΔK/K

C. 1.52 %ΔK/K

D. 1.55 %ΔK/K

ANSWER: C.

TOPIC: 292002
KNOWLEDGE: K1.12 [2.4/2.5]
QID: B2848 (P2146)

With $K_{eff}$ equal to 0.982, how much positive reactivity is required to make the reactor critical? (Round answer to the nearest 0.01 %ΔK/K.)

A. 1.72 %ΔK/K

B. 1.77 %ΔK/K

C. 1.80 %ΔK/K

D. 1.83 %ΔK/K

ANSWER: D.

TOPIC: 292002
KNOWLEDGE: K1.12 [2.4/2.5]
QID: B7647 (P7647)

Initially, a reactor was shutdown at a stable power level of 2.0 x $10^{-5}$ percent. After a small positive reactivity addition, the current stable power level is 3.0 x $10^{-5}$ percent. If the initial $K_{eff}$ was 0.982, what is the current $K_{eff}$?

A. 0.988

B. 0.992

C. 0.996

D. Cannot be determined without additional information.

ANSWER: A.

TOPIC: 292002
KNOWLEDGE: K1.14 [2.6/2.9]
QID: B548

The shutdown margin (SDM) upon full insertion of all control rods following a reactor scram from full power is __________ the SDM immediately prior to the scram.

A. equal to

B. less than

C. greater than

D. independent of

ANSWER: A.

TOPIC: 292002
KNOWLEDGE: K1.14 [2.6/2.9]
QID: B948

Which one of the following core changes will decrease shutdown margin?

A. Fuel depletion during reactor operation.

B. Buildup of Sm-149 after a reactor scram.

C. Increasing moderator temperature 10°F while shutdown.

D. Depletion of gadolinium during reactor operation.

ANSWER: D.

TOPIC: 292002
KNOWLEDGE: K1.14 [2.6/2.9]
QID: B1048

One hour ago, a reactor scrammed from steady-state 100 percent power due to an instrument malfunction. All systems operated normally.

Given the following absolute values of reactivities added since the scram, assign a (+) or (–) as appropriate and choose the current value of core reactivity.

| | | |
|---|---|---|
| Xenon | = | ( ) 1.0 %ΔK/K |
| Fuel temperature | = | ( ) 2.0 %ΔK/K |
| Control rods | = | ( ) 14.0 %ΔK/K |
| Voids | = | ( ) 3.0 %ΔK/K |

A. -8.0 %ΔK/K

B. -10.0 %ΔK/K

C. -14.0 %ΔK/K

D. -20.0 %ΔK/K

ANSWER: B.

TOPIC: 292002
KNOWLEDGE: K1.14 [2.6/2.9]
QID: B1248

Which one of the following will increase the shutdown margin for a subcritical reactor operating at 250°F in the middle of a fuel cycle?

A. Decay of Xenon-135

B. Increased core recirculation flow rate

C. Reactor coolant heatup

D. Control rod withdrawal

ANSWER: C.

TOPIC: 292002
KNOWLEDGE: K1.14 [2.6/2.9]
QID: B1648

A reactor scrammed from steady-state 100 percent power due to an instrument malfunction 16 hours ago. All systems operated normally.

Given the following absolute values of reactivities added since the scram, assign a (+) or (–) as appropriate and choose the current value of core reactivity.

| | | |
|---|---|---|
| Xenon | = | ( ) 1.5 %ΔK/K |
| Fuel temperature | = | ( ) 2.5 %ΔK/K |
| Control rods | = | ( ) 14.0 %ΔK/K |
| Voids | = | ( ) 3.5 %ΔK/K |

A. -6.5 %ΔK/K

B. -9.5 %ΔK/K

C. -11.5 %ΔK/K

D. -13.5 %ΔK/K

ANSWER: B.

TOPIC: 292002
KNOWLEDGE: K1.14 [2.6/2.9]
QID: B1748

Approximately 12 hours ago, a reactor scrammed from steady-state 100 percent power due to an instrument malfunction. All systems operated normally.

Given the following absolute values of reactivities added since the scram, assign a (+) or (–) as appropriate and choose the current value of core reactivity.

| | | |
|---|---|---|
| Xenon | = | ( ) 2.0 %ΔK/K |
| Fuel temperature | = | ( ) 2.5 %ΔK/K |
| Control rods | = | ( ) 14.0 %ΔK/K |
| Voids | = | ( ) 4.5 %ΔK/K |

A. -5.0 %ΔK/K

B. -9.0 %ΔK/K

C. -14.0 %ΔK/K

D. -23.0 %ΔK/K

ANSWER: B.

TOPIC: 292002
KNOWLEDGE: K1.14 [2.6/2.9]
QID: B2148

A reactor scram from 100 percent steady-state power occurred 36 hours ago due to an instrument malfunction. All systems operated normally.

Given the following absolute values of reactivities added since the scram, assign a (+) or (–) as appropriate and choose the current value of core reactivity.

| | | |
|---|---|---|
| Xenon | = | ( ) 1.0 %ΔK/K |
| Fuel temperature | = | ( ) 2.0 %ΔK/K |
| Control rods | = | ( ) 14.0 %ΔK/K |
| Voids | = | ( ) 3.0 %ΔK/K |

A. -8.0 %ΔK/K

B. -10.0 %ΔK/K

C. -14.0 %ΔK/K

D. -20.0 %ΔK/K

ANSWER: A.

TOPIC: 292002
KNOWLEDGE: K1.14 [2.6/2.9]
QID: B2248

Sixteen hours ago, a reactor scrammed from 100 percent steady-state power due to an instrument malfunction. All systems operated normally.

Given the following absolute values of reactivities added since the scram, assign a (+) or (–) as appropriate and choose the current value of core reactivity.

| | | |
|---|---|---|
| Xenon | = | ( ) 2.0 %ΔK/K |
| Fuel temperature | = | ( ) 3.0 %ΔK/K |
| Control rods | = | ( ) 12.0 %ΔK/K |
| Voids | = | ( ) 4.0 %ΔK/K |

A. -5.0 %ΔK/K

B. -7.0 %ΔK/K

C. -9.0 %ΔK/K

D. -11.0 %ΔK/K

ANSWER: B.

TOPIC: 292002
KNOWLEDGE: K1.14 [2.6/2.9]
QID: B2348 (P2347)

Which one of the following changes will <u>decrease</u> the available shutdown margin in a reactor? (Assume <u>no</u> operator actions.)

A. Depletion of fuel during reactor operation.

B. Depletion of burnable poisons during reactor operation.

C. Buildup of samarium-149 following a reactor power transient.

D. Buildup of Xenon-135 following a reactor power transient.

ANSWER: B.

TOPIC: 292002
KNOWLEDGE: K1.14 [2.6/2.9]
QID: B2448

A reactor scrammed from 100 percent steady-state power due to an instrument malfunction 30 hours ago. All systems operated normally.

Given the following absolute values of reactivities added since the scram, assign a (+) or (–) as appropriate and choose the current value of core reactivity.

Xenon = ( ) 1.5 %ΔK/K
Fuel temperature = ( ) 2.5 %ΔK/K
Control rods = ( ) 14.0 %ΔK/K
Voids = ( ) 3.5 %ΔK/K

A. -6.5 %ΔK/K

B. -9.5 %ΔK/K

C. -11.5 %ΔK/K

D. -13.5 %ΔK/K

ANSWER: A.

TOPIC: 292002
KNOWLEDGE: K1.14 [2.6/2.9]
QID: B3648 (P3647)

A reactor is initially operating at steady-state 60 percent power near the end of a fuel cycle when a fully withdrawn control rod suddenly inserts completely into the core. No operator action is taken and the plant control systems stabilize the reactor at a power level in the power range.

Compared to the initial shutdown margin (SDM), the current SDM is __________; and compared to the initial core $K_{eff}$, the current core $K_{eff}$ is __________.

A. the same; smaller

B. the same; the same

C. less negative; smaller

D. less negative; the same

ANSWER: B.

TOPIC: 292002
KNOWLEDGE: K1.14 [2.6/2.9]
QID: B3748 (P3747)

A nuclear power plant has just completed a refueling outage. Based on the expected core loading, reactor engineers have predicted a control rod configuration at which the reactor will become critical during the initial reactor startup following the refueling outage. However, the burnable poisons scheduled to be loaded were inadvertently omitted.

Which one of the following describes the effect of the burnable poison omission on achieving reactor criticality during the initial reactor startup following the refueling outage?

A. The reactor will become critical before the predicted critical control rod configuration is achieved.

B. The reactor will become critical after the predicted critical control rod configuration is achieved.

C. The reactor will be unable to achieve criticality because the fuel assemblies contain insufficient positive reactivity to make the reactor critical.

D. The reactor will be unable to achieve criticality because the control rods contain insufficient positive reactivity to make the reactor critical.

ANSWER: A.

TOPIC: 292002
KNOWLEDGE: K1.14 [2.6/2.9]
QID: B4924

Reactors A and B are identical except that reactor A is operating near the beginning of a fuel cycle (BOC) and reactor B is operating near the end of a fuel cycle (EOC). Both reactors are operating at 100 percent power.

Which reactor would have the smaller $K_{eff}$ five minutes after a reactor scram?

A. Reactor A, because the control rods will add more negative reactivity near the BOC.

B. Reactor A, because the power coefficient is more negative near the BOC.

C. Reactor B, because the control rods will add more negative reactivity near the EOC.

D. Reactor B, because the power coefficient is more negative near the EOC.

ANSWER: C.

TOPIC: 292002
KNOWLEDGE: K1.14 [2.6/2.9]
QID: B5224

A reactor was initially operating at steady-state 100 percent power near the middle of a fuel cycle when it was shut down and then cooled down to 200°F over a three-day period.

Given the following absolute values of reactivities added during the shutdown and cooldown, assign a (+) or (–) as appropriate and choose the current value of core reactivity.

| | |
|---|---|
| Control rods | = ( ) 12.50 %ΔK/K |
| Voids | = ( ) 3.50 %ΔK/K |
| Xenon | = ( ) 2.50 %ΔK/K |
| Fuel temperature | = ( ) 2.00 %ΔK/K |
| Moderator temperature | = ( ) 0.50 %ΔK/K |

A. -3.0 %ΔK/K

B. -4.0 %ΔK/K

C. -8.0 %ΔK/K

D. -9.0 %ΔK/K

ANSWER: B.

TOPIC: 292002
KNOWLEDGE: K1.14 [2.6/2.9]
QID: B6224

Reactors A and B are identical except that reactor A is operating near the beginning of a fuel cycle (BOC) and reactor B is operating near the end of a fuel cycle (EOC). Both reactors are operating at 100 percent power.

Which reactor will have the greater core $K_{eff}$ five minutes after a reactor scram?

A. Reactor A, because complete control rod insertion will add less negative reactivity near the BOC.

B. Reactor A, because the power coefficient is less negative near the BOC.

C. Reactor B, because complete control rod insertion will add less negative reactivity near the EOC.

D. Reactor B, because the power coefficient is less negative near the EOC.

ANSWER: A.

TOPIC: 292002
KNOWLEDGE: K1.14 [2.6/2.9]
QID: B7224

A nuclear power plant was initially operating at equilibrium 100 percent power just prior to a refueling outage. The plant was shut down, refueled, restarted, and is currently operating at equilibrium 100 percent power. Assume the 100 percent power fission rate did not change.

Which one of the following describes the current plant status as compared to the plant status just prior to the refueling?

A. The core thermal neutron flux is greater.

B. The available shutdown margin is smaller.

C. The control rods are withdrawn farther from the core.

D. The equilibrium core Xe-135 concentration is smaller.

ANSWER: B.

TOPIC: 292002
KNOWLEDGE: K1.14 [2.6/2.9]
QID: B7787

A reactor is currently operating at steady-state 100 percent power near the beginning of a fuel cycle (BOC). When the same reactor is operating at steady-state 100 percent power near the end of a fuel cycle (EOC), how will the BOC and EOC shutdown margins compare?

A. The EOC shutdown margin will be more negative because the control rods will add more negative reactivity during a reactor scram near the EOC.

B. The EOC shutdown margin will be less negative because the control rods will add less negative reactivity during a reactor scram near the EOC.

C. The EOC shutdown margin will be more negative because xenon-135 will add more negative reactivity immediately after a reactor scram near the EOC.

D. The EOC shutdown margin will be less negative because xenon-135 will add less negative reactivity immediately after a reactor scram near the EOC.

ANSWER: A.

TOPIC: 292002
KNOWLEDGE: K1.14 [2.6/2.9]
QID: B7817

Reactors A and B are identical except that reactor A is operating near the end of a fuel cycle (EOC) and reactor B is operating near the beginning of a fuel cycle (BOC). Both reactors are currently operating at steady-state 100 percent power. The total reactivity worth of the control rods is the same for both reactors.

Which reactor will have the greater $K_{eff}$ value 5 minutes after a reactor scram, and why?

A. Reactor A, because the full insertion of all control rods will add less negative reactivity near the EOC.

B. Reactor A, because the xenon-135 negativity reactivity peak is greater after a scram near the EOC.

C. Reactor B, because the full insertion of all control rods will add less negative reactivity near the BOC.

D. Reactor B, because the xenon-135 negativity reactivity peak is greater after a scram near the BOC.

ANSWER: C.